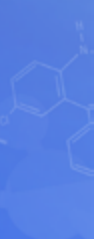
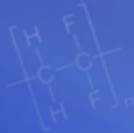




# Notebook



**Details  
and Specifications**

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# Construction Details

## Construction Details

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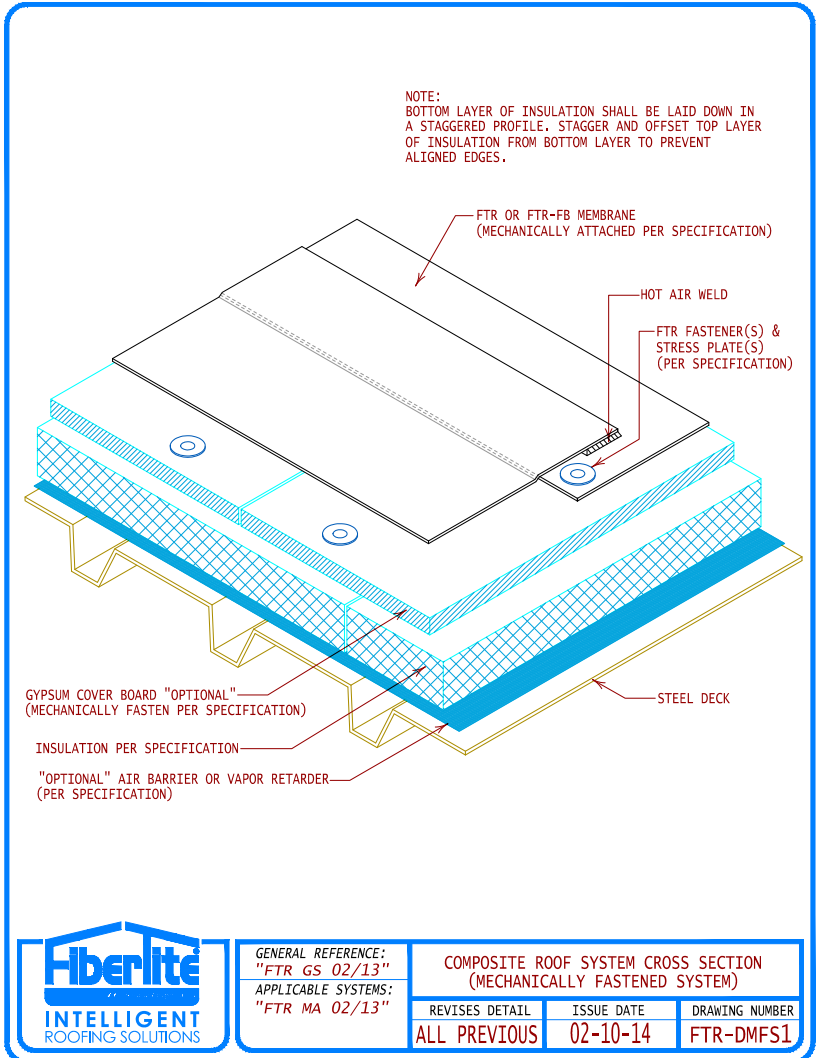
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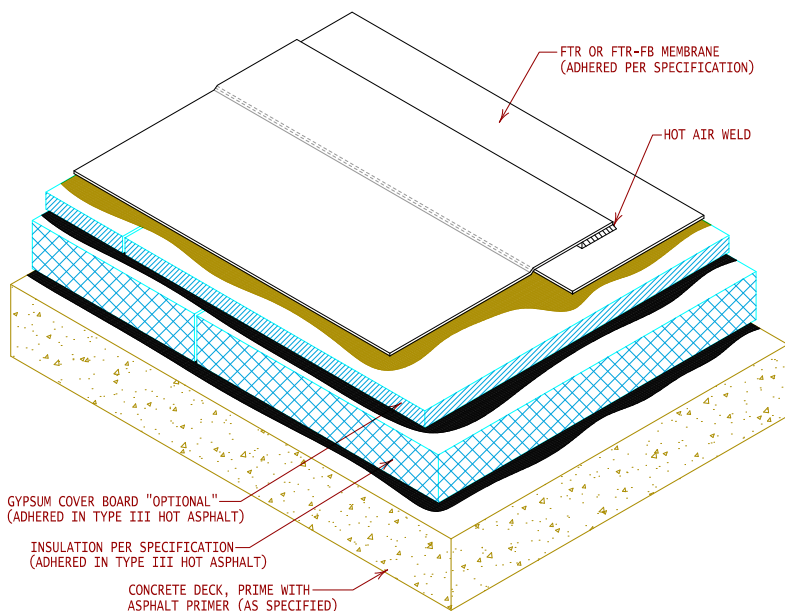


# 4.2 Construction Details: Assembly Illustrations



# 4.2 Construction Details: Assembly Illustrations

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER  
OF INSULATION FROM BOTTOM LAYER TO PREVENT  
ALIGNED EDGES.

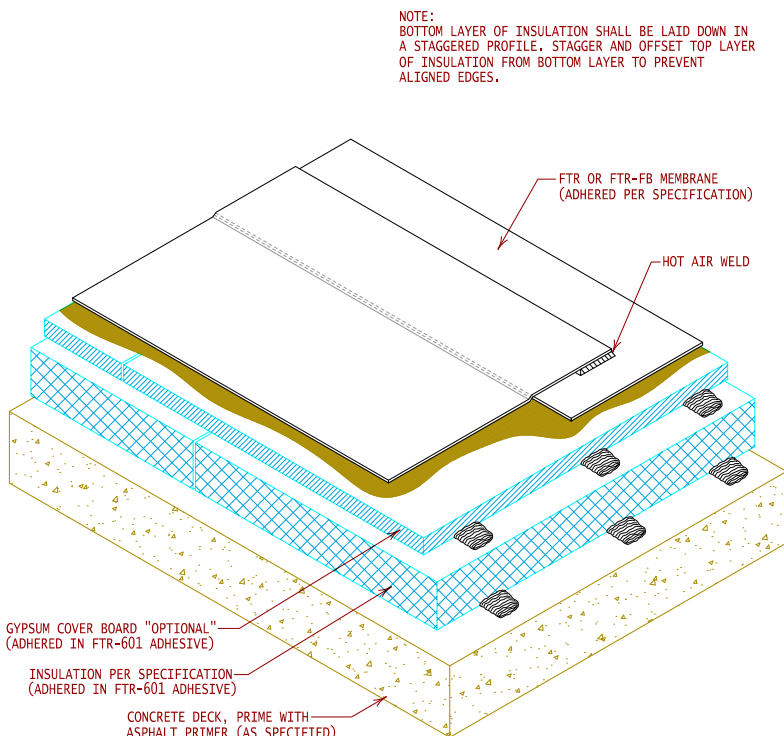


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

COMPOSITE ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN ASPHALT)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DAS1

# 4.2 Construction Details: Assembly Illustrations



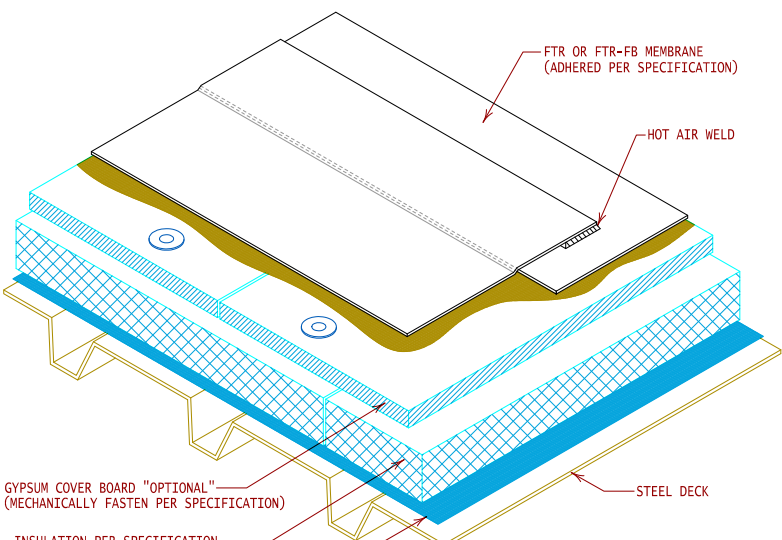
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

COMPOSITE ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DAS2

# 4.2 Construction Details: Assembly Illustrations

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER  
OF INSULATION FROM BOTTOM LAYER TO PREVENT  
ALIGNED EDGES.



FTR OR FTR-FB MEMBRANE  
(ADHERED PER SPECIFICATION)


HOT AIR WELD

GYPSUM COVER BOARD "OPTIONAL"  
(MECHANICALLY FASTEN PER SPECIFICATION)

INSULATION PER SPECIFICATION

"OPTIONAL" AIR BARRIER OR VAPOR RETARDER  
(PER SPECIFICATION)

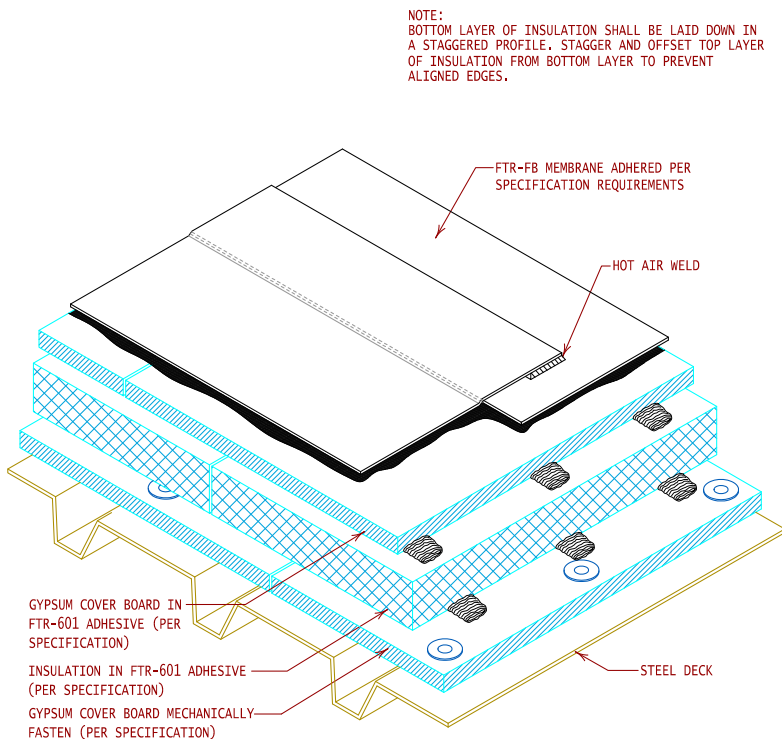
STEEL DECK



**INTELLIGENT  
ROOFING SOLUTIONS**

GENERAL REFERENCE: "FTR GS 02/13"			COMPOSITE ROOF SYSTEM CROSS SECTION (MECHANICALLY FASTENED INSULATION)		
APPLICABLE SYSTEMS: "FTR AD 02/13"			REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
			ALL PREVIOUS	02-10-14	FTR-DAS4

## 4.2 Construction Details: Assembly Illustrations

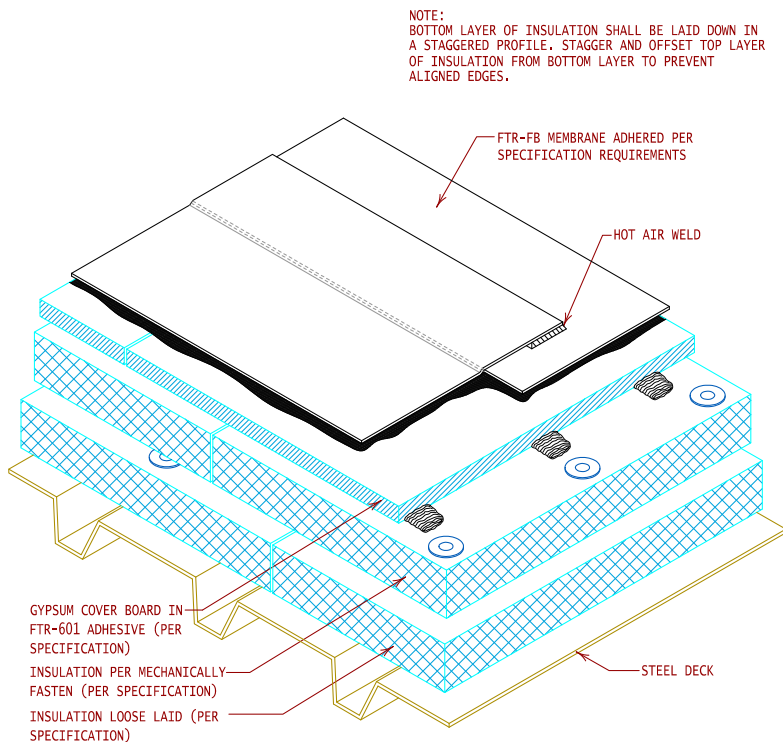


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ROOF SYSTEM CROSS SECTION  
(MECH. FAST. COVER BOARD & ADHERED INSUL.)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS16SP

# 4.2 Construction Details: Assembly Illustrations

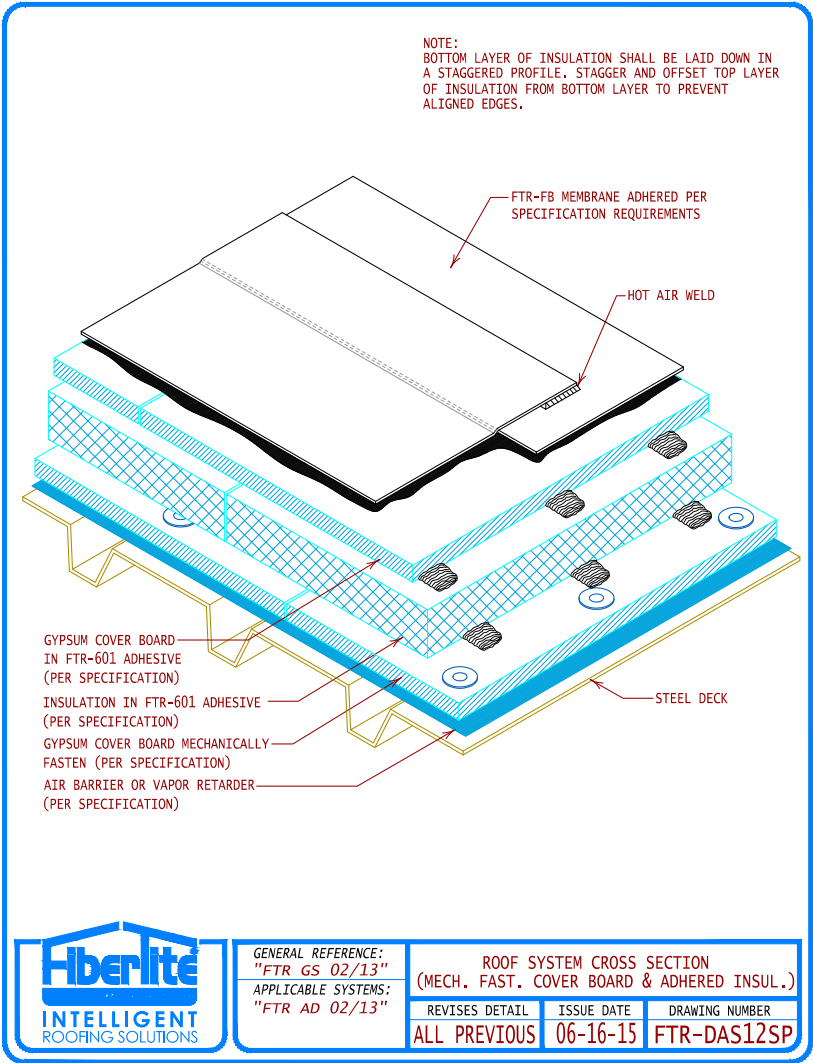


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ROOF SYSTEM CROSS SECTION  
(MECH. FAST. & ADHERED INSUL.)

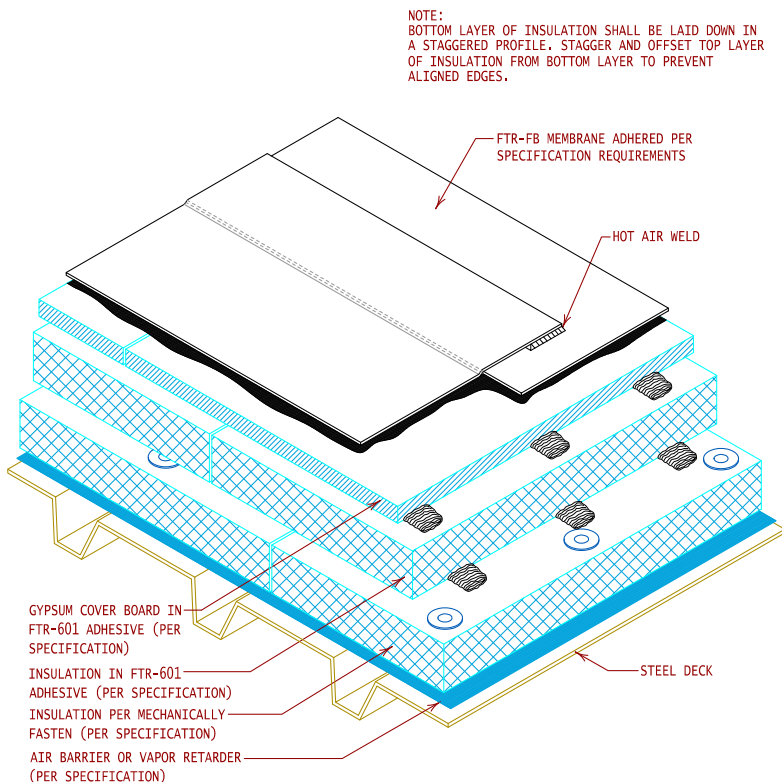
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS17SP

# 4.2 Construction Details: Assembly Illustrations





## 4.2 Construction Details: Assembly Illustrations

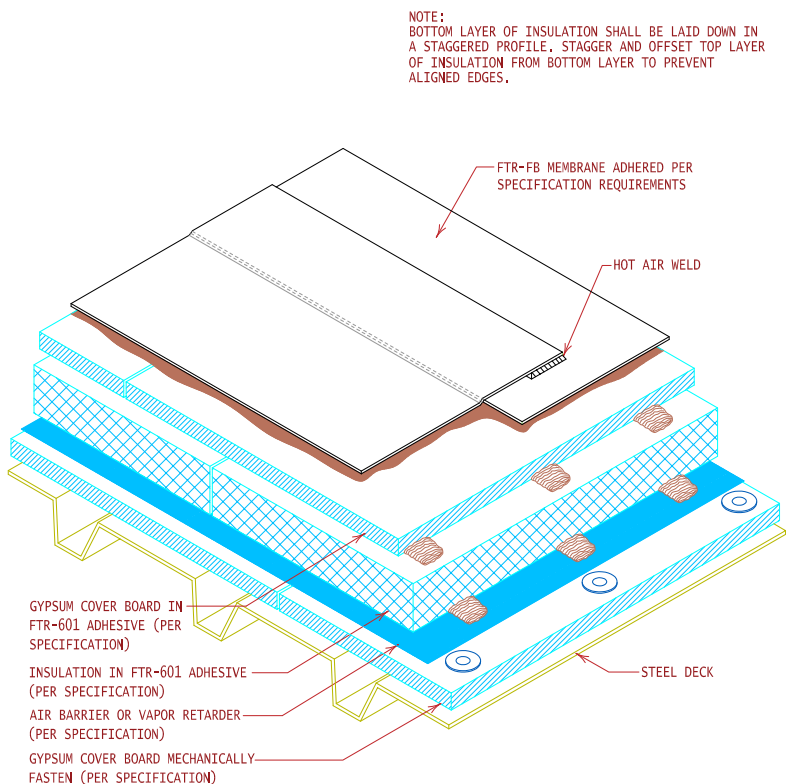


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ROOF SYSTEM CROSS SECTION  
(MECH. FAST. & ADHERED INSUL.)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS13SP

## 4.2 Construction Details: Assembly Illustrations

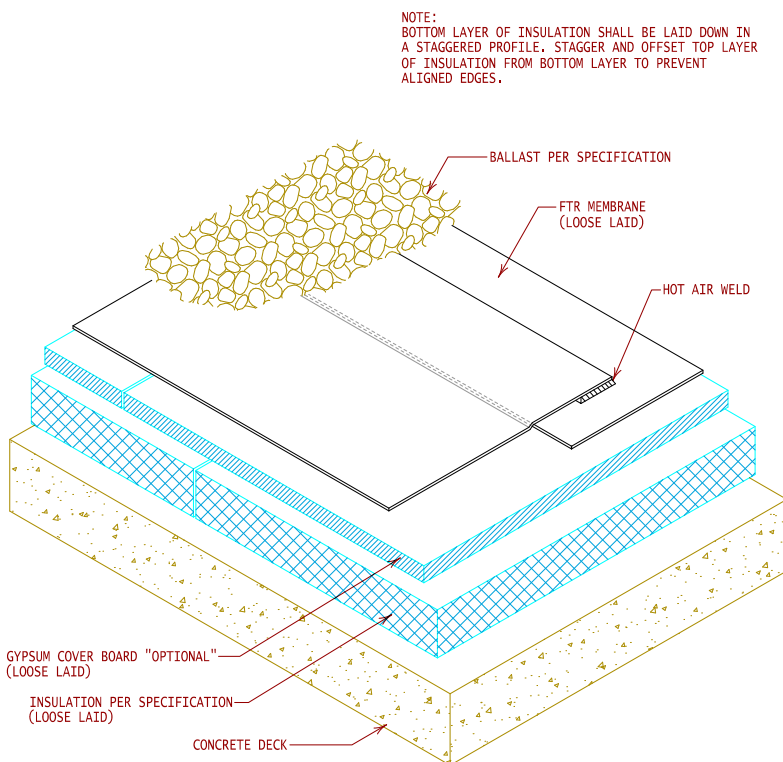


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

ROOF SYSTEM CROSS SECTION  
(MECH. FAST. & ADHERED INSUL.)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS18SP

# 4.2 Construction Details: Assembly Illustrations

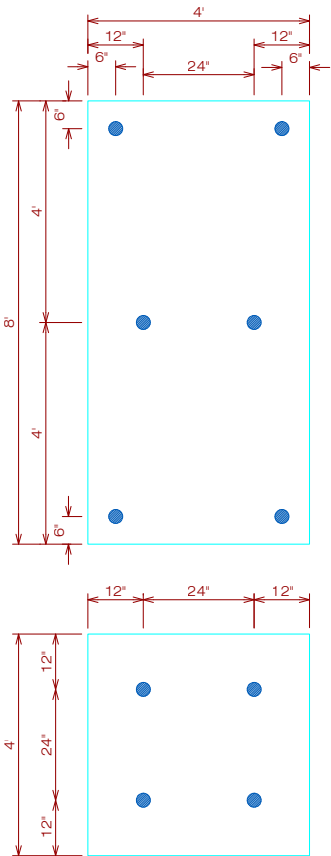


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR BA 02/13"

## COMPOSITE ROOF SYSTEM CROSS SECTION (BALLASTED SYSTEM)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DBS1

# 4.3 Construction Details: Insulation Attachments



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

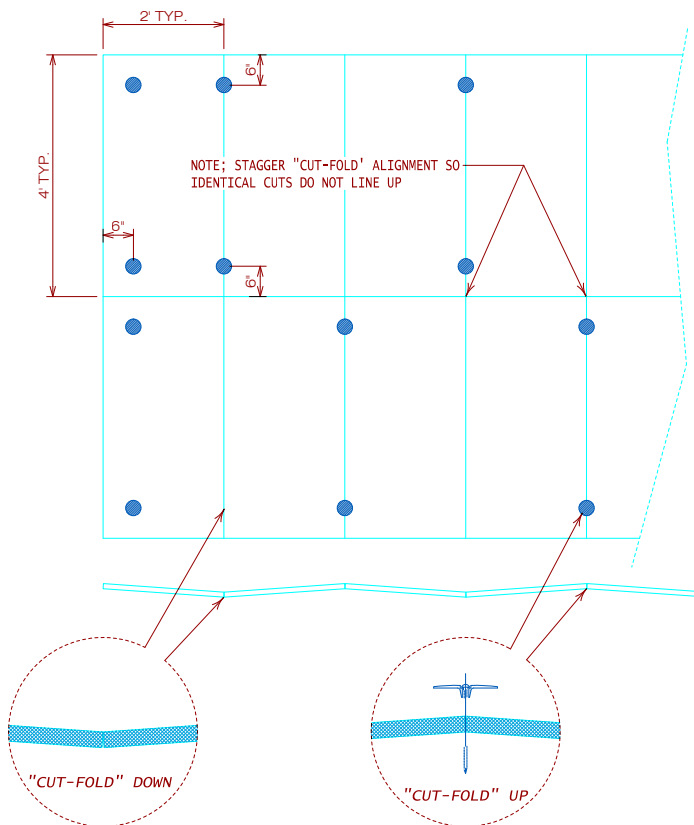
PRELIMINARY INSULATION ATTACHMENT  
FOR 1-90  
MECHANICALLY ATTACHED FIBERTITE SYSTEM

REVISES DETAIL  
ALL PREVIOUS

ISSUE DATE  
02-10-14

DRAWING NUMBER  
FTR-DI1

# 4.3 Construction Details: Insulation Attachments

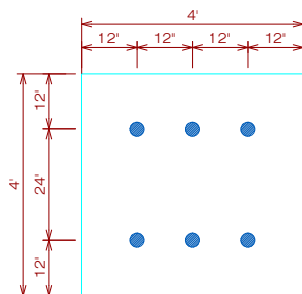
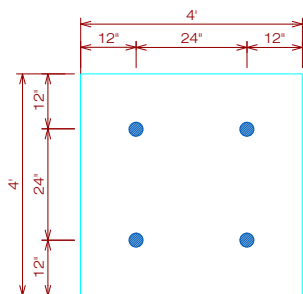
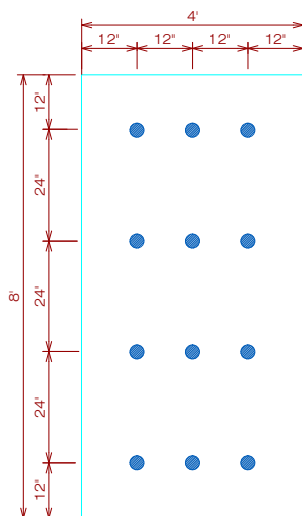
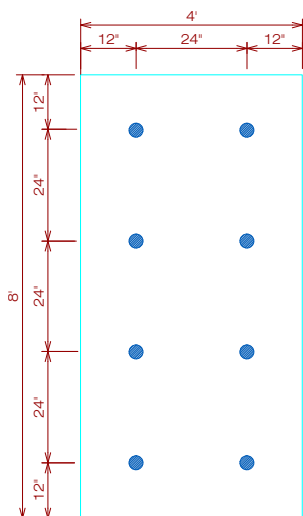


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

PRELIMINARY ATTACHMENT  
3/8" EXTRUDED POLYSTYRENE  
"CUT FOLD" RECOVERY BOARD

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-D15

# 4.3 Construction Details: Insulation Attachments



**FIELD PATTERN 1-90**

4' X 8' = 8 PER BOARD  
4' X 4' = 4 PER BOARD

**PERIMETER PATTERN 1-90**

NON-HURRICANE ZONE  
4' X 8' = 12 PER BOARD  
4' X 4' = 6 PER BOARD

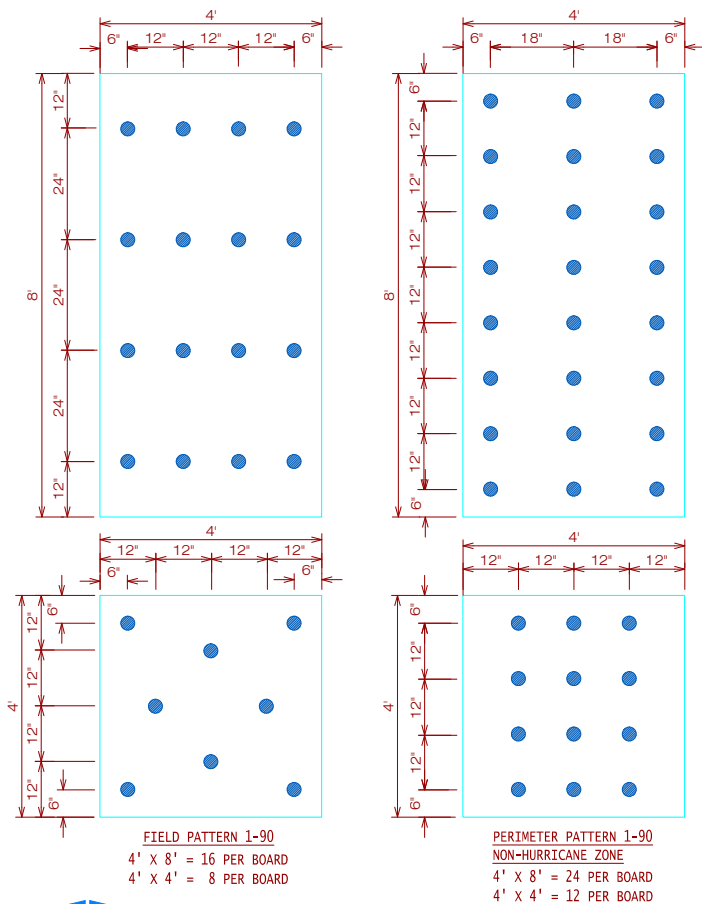


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ADHERED SYSTEM  
MECHANICALLY ATTACHED INSULATION,  
INSULATION 2.0" THICKNESS OR GREATER

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-26-16	FTR-DI2

# 4.3 Construction Details: Insulation Attachments



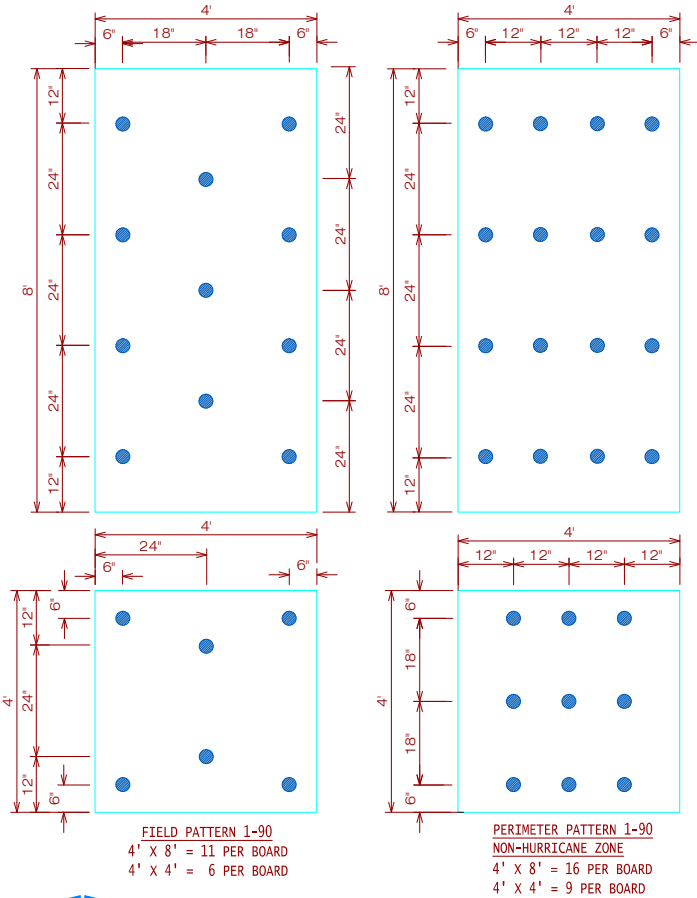
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ADHERED SYSTEM  
MECHANICALLY ATTACHED INSULATION.  
INSULATION LESS THAN 1.5" THICKNESS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-26-16	FTR-DI3



# 4.3 Construction Details: Insulation Attachments

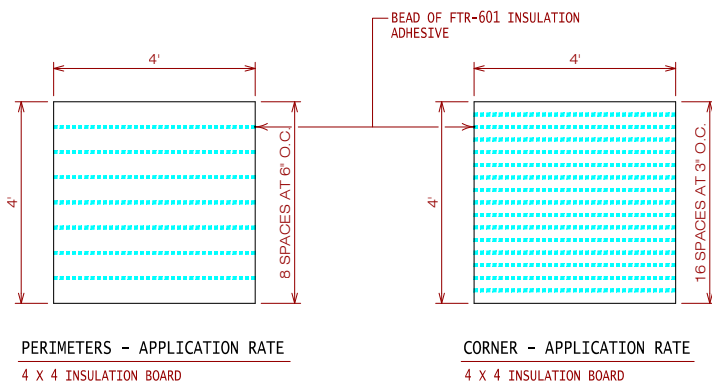
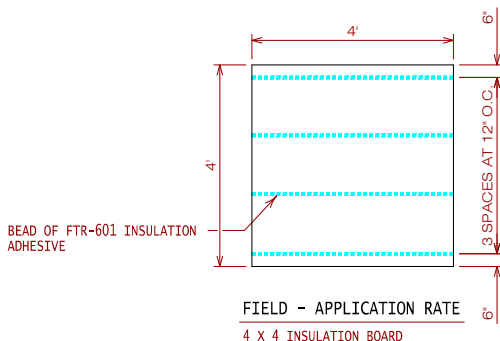


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

ADHERED SYSTEM  
MECHANICALLY ATTACHED INSULATION.  
INSULATION THICKNESS 1.5" TO 1.9"

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-26-16	FTR-DI4

# 4.3 Construction Details: Insulation Attachments

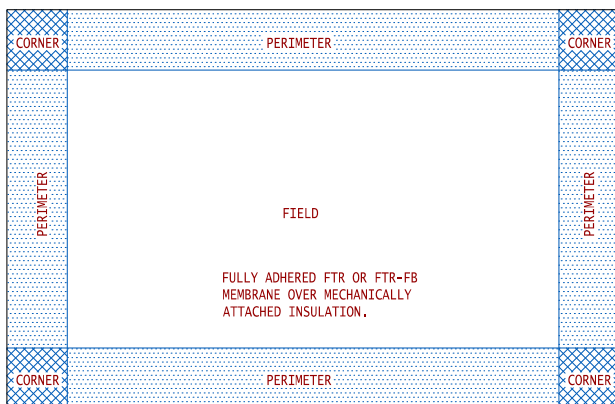


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"

## FTR-601 INSULATION ADHESIVE APPLICATION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-D601

# 4.3 Construction Details: Insulation Attachments



PERIMETER AND CORNER WIDTH DIMENSIONS ARE DETERMINED BASED ON THE LESSER PRODUCT DERIVED BY MULTIPLYING THE BUILDING HEIGHT BY .4 (40%) OR THE LESSER BUILDING DIMENSION BY .1 (10%).

FTR APPROVED INSULATION INSTALLED IN THE FIELD OF THE ROOF IS SECURED IN ACCORDANCE WITH THE APPLICABLE CODE RATING REQUIREMENTS AND ENHANCED IN THE PERIMETER AND CORNER AREAS OF THE ROOF BY THE FOLLOWING FACTORS:

PERIMETER - 50% INCREASE OVER THE FIELD SECUREMENT RATE

CORNER - 100% INCREASE OVER THE FIELD SECUREMENT RATE



GENERAL REFERENCE:

"FTR GS 02/13"

APPLICABLE SYSTEMS:

"FTR AD 02/13"

CLASS 1-90 OR LESS M/A INSULATION & MEMBRANE ADHERED; FIELD, PERIMETER & CORNERS

REVISES DETAIL

ALL PREVIOUS

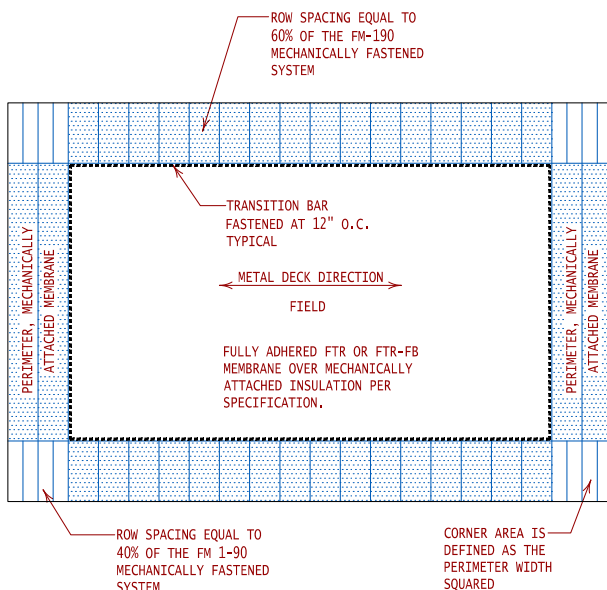
ISSUE DATE

02-10-14

DRAWING NUMBER

FINS-90a

# 4.3 Construction Details: Insulation Attachments



WITH THE EXCEPTION OF THE TRANSITIONAL BAR DIVIDING THE FULLY ADHERED AREA FROM THE MECHANICALLY ATTACHED AREA, ALL ATTACHMENT MUST BE INSTALLED PERPENDICULAR TO THE METAL DECK FLUTE ORIENTATION.

PERIMETER AND CORNER WIDTH DIMENSIONS ARE DETERMINED BASED ON THE LESSER PRODUCT DERIVED BY MULTIPLYING THE BUILDING HEIGHT BY .4 (40%) OR THE LESSER BUILDING DIMENSION BY .1 (10%).

SPACING BETWEEN ROWS OF SECUREMENT IS REDUCED BY THE FOLLOWING FACTORS:  
 PERIMETER - 60% OF THE PANEL WIDTH INSTALLED IN THE FIELD OF THE ROOF, SINCE NOBODY MANUFACTURES A 60% SHEET, HALF SHEETS ARE TYPICALLY USED.  
 CORNER - 40% OF THE PANEL WIDTH INSTALLED IN THE FIELD OF THE ROOF.

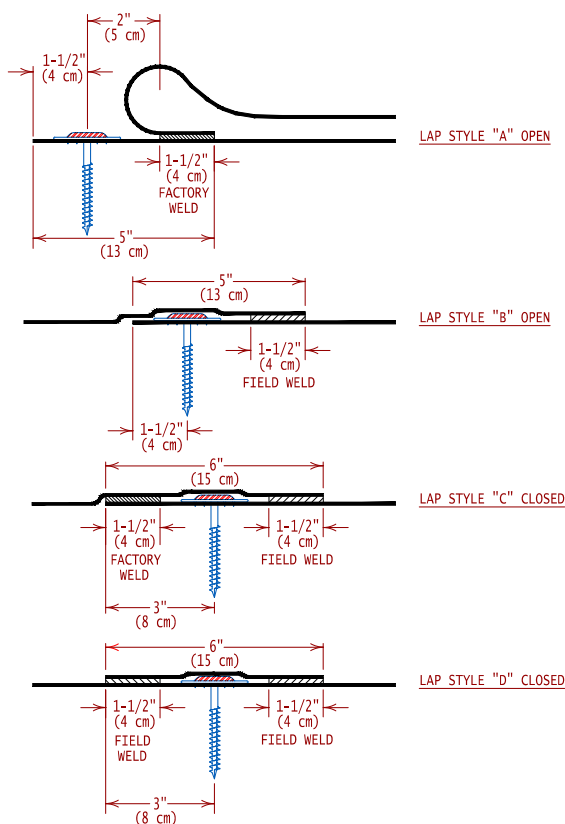


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

CLASS 1-90 M/A INSULATION & ADHERED FIELD MEMBRANE W/ M/A MEMBRANE IN PERIMETER & CORNERS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FINS-90b

# 4.4 Construction Details: Sheet Layouts

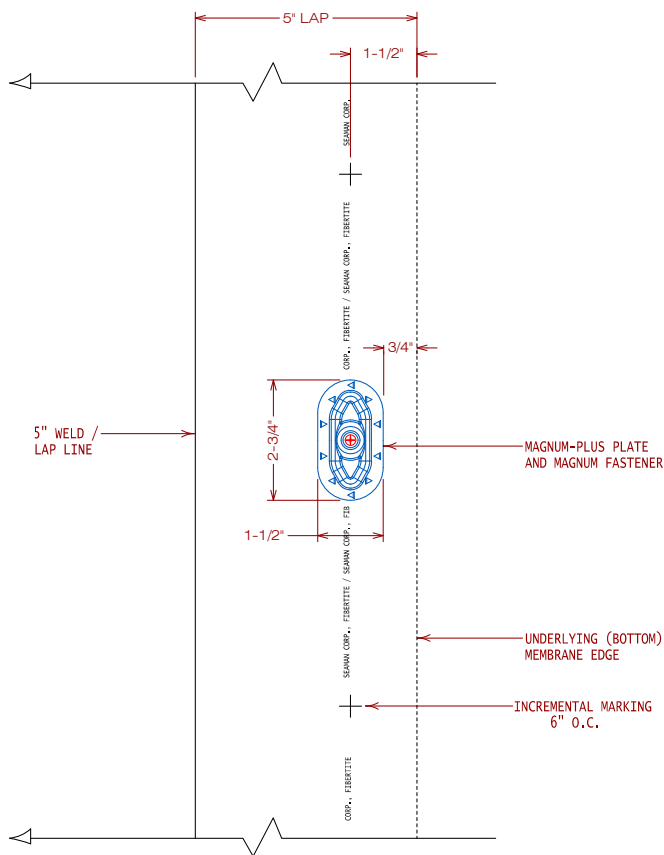


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

FTR MAGNUM PLATES & FASTENERS  
LAP STYLE AND POSITION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DLAP

# 4.4 Construction Details: Sheet Layouts



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

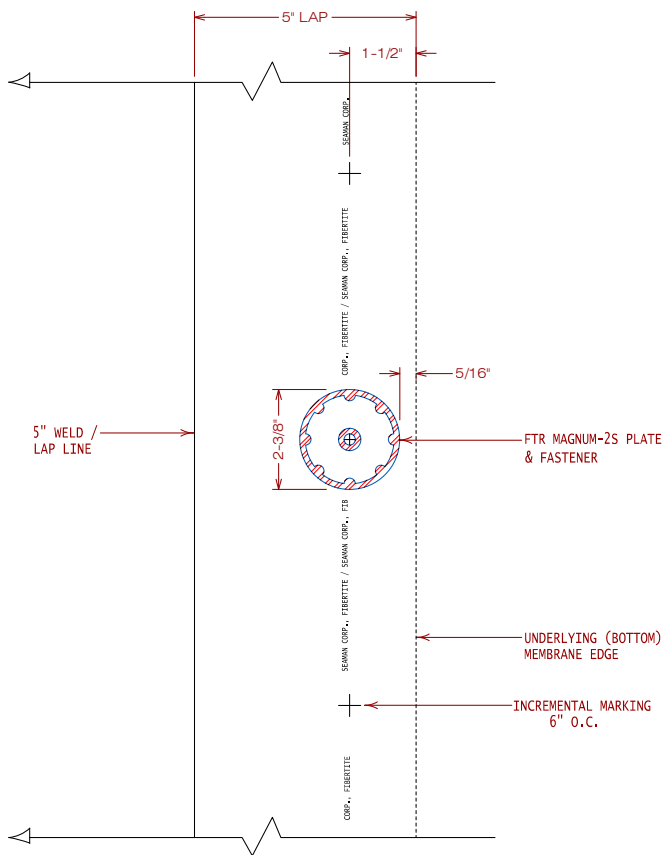
FTR MAGNUM-PLUS PLATES & MAGNUM FASTENERS  
LAP / PLACEMENT

REVISES DETAIL  
ALL PREVIOUS

ISSUE DATE  
02-10-14

DRAWING NUMBER  
FTR-DLAP4

# 4.4 Construction Details: Sheet Layouts



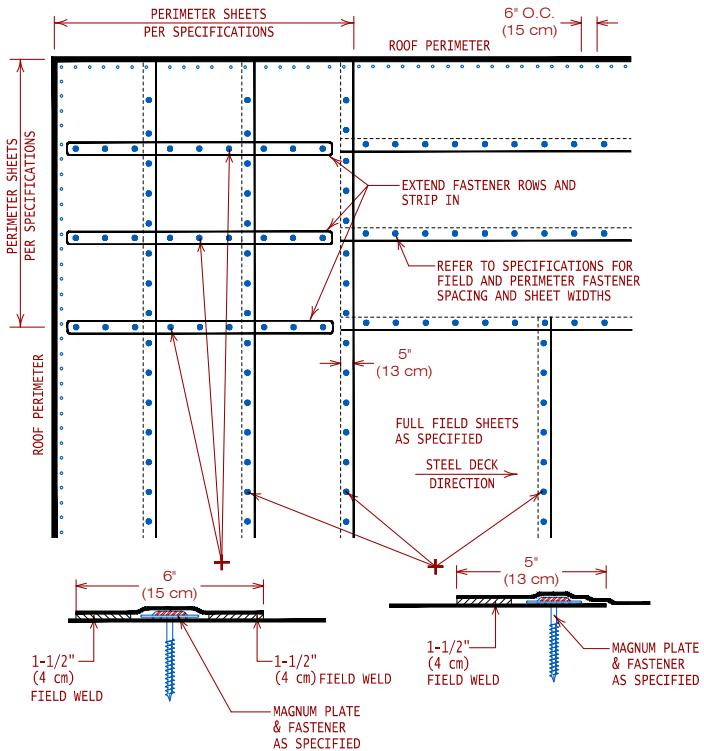
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

FTR MAGNUM-2S PLATES & FASTENERS  
LAP / PLACEMENT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DLAP3



# 4.4 Construction Details: Sheet Layouts



NOTE: DIMENSION "A" EQUALS 10% OF ROOF WIDTH OR 40% OF BUILDING HEIGHT; WHICHEVER IS LESS, WITH A MINIMUM OF 4 FT. (1.2 M)

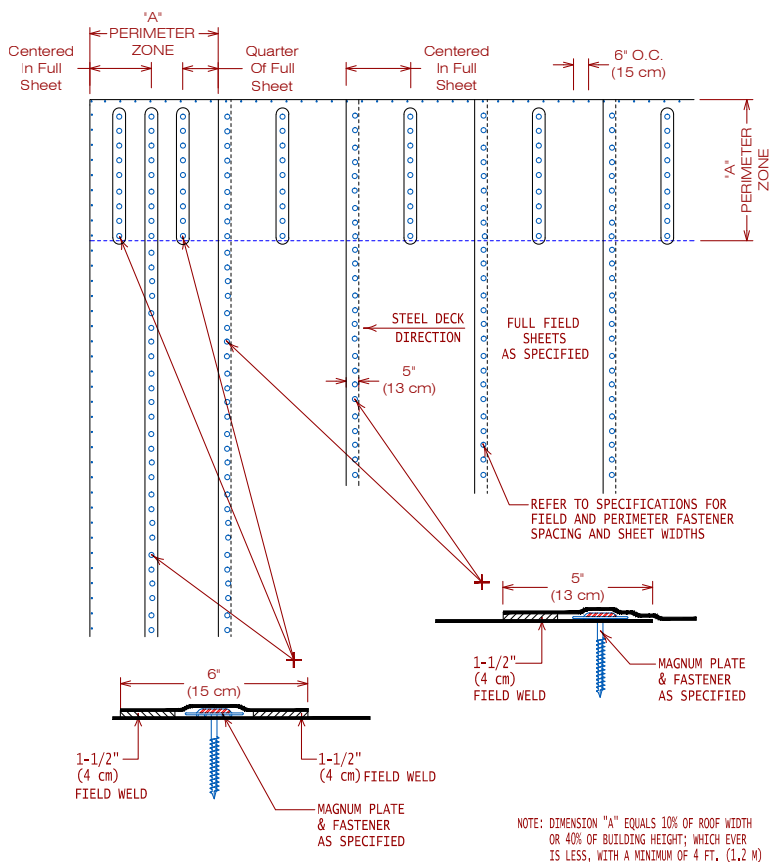


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

CLASS 1-75 OR LESS  
GENERAL PERIMETER & CORNER LAYOUT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FGL-75

# 4.4 Construction Details: Sheet Layouts

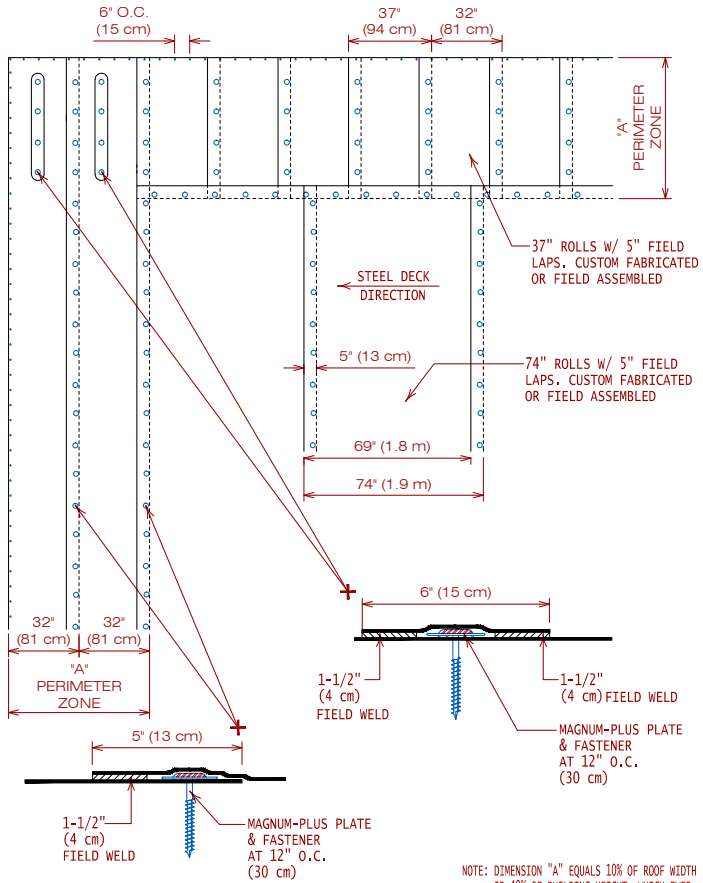


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

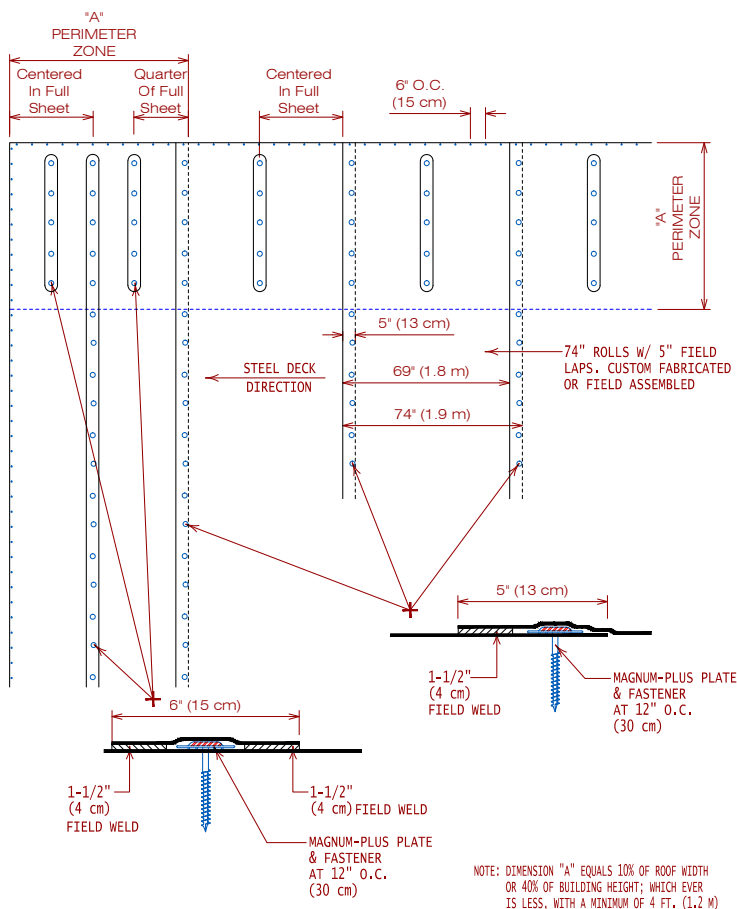
CLASS 1-90 OR GREATER  
GENERAL PERIMETER & CORNER LAYOUT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FGL-90

# 4.4 Construction Details: Sheet Layouts



# 4.4 Construction Details: Sheet Layouts



NOTE: DIMENSION "A" EQUALS 10% OF ROOF WIDTH OR 40% OF BUILDING HEIGHT; WHICHEVER IS LESS, WITH A MINIMUM OF 4 FT. (1.2 M)

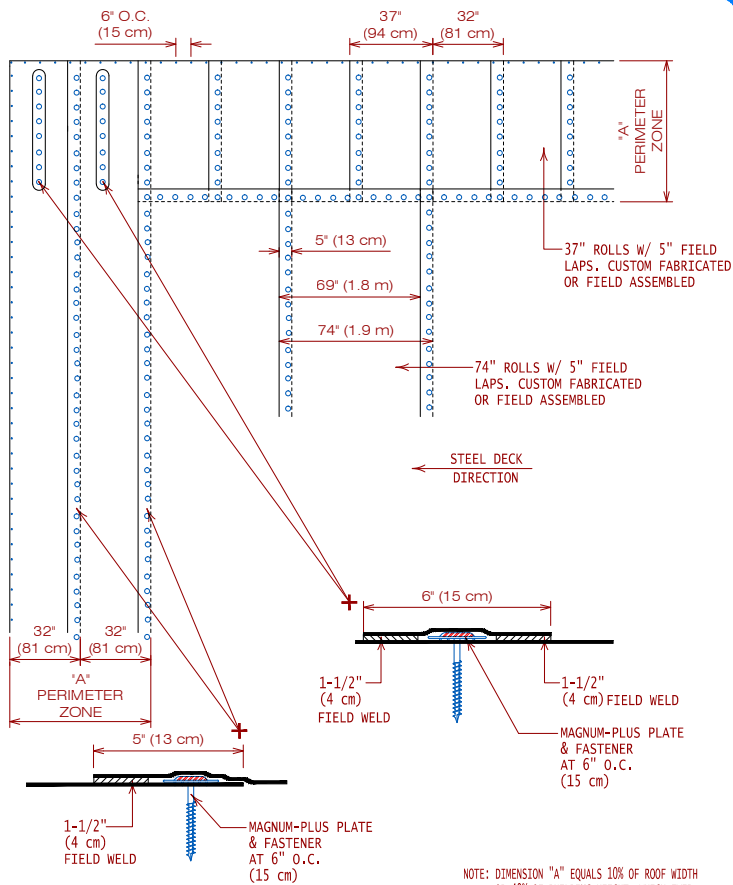


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

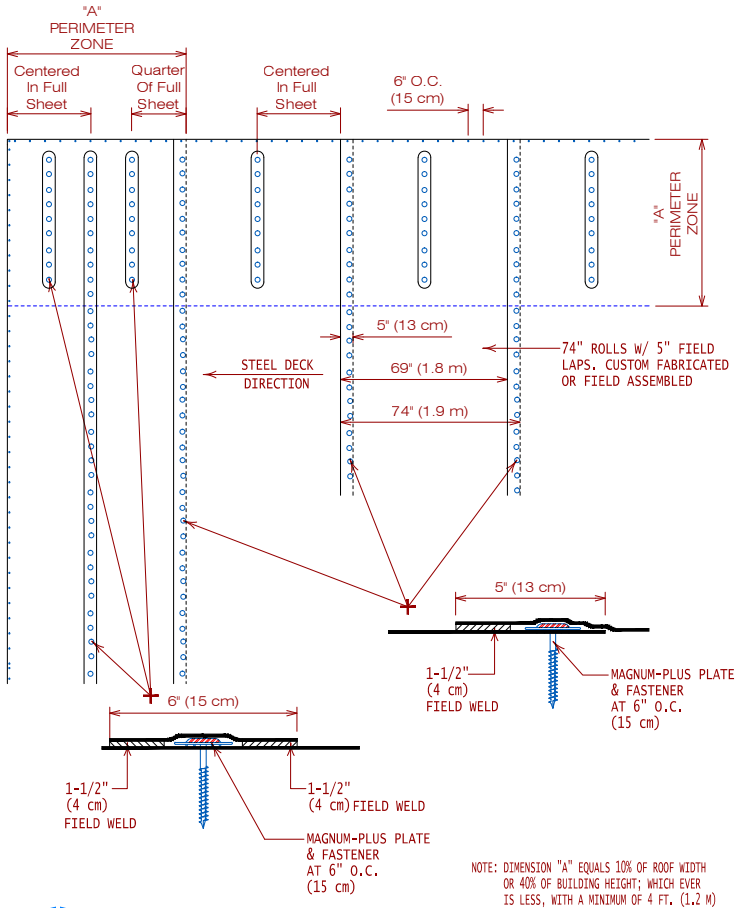
CLASS 1-90 ATTACHMENT  
74 IN. (1.9 M) ROLLS W/ STRIP IN PERIMETER  
69 IN. x 12 IN. O.C. & 34.5 IN. x 12 IN. O.C.

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	F74-RG90b

# 4.4 Construction Details: Sheet Layouts



# 4.4 Construction Details: Sheet Layouts

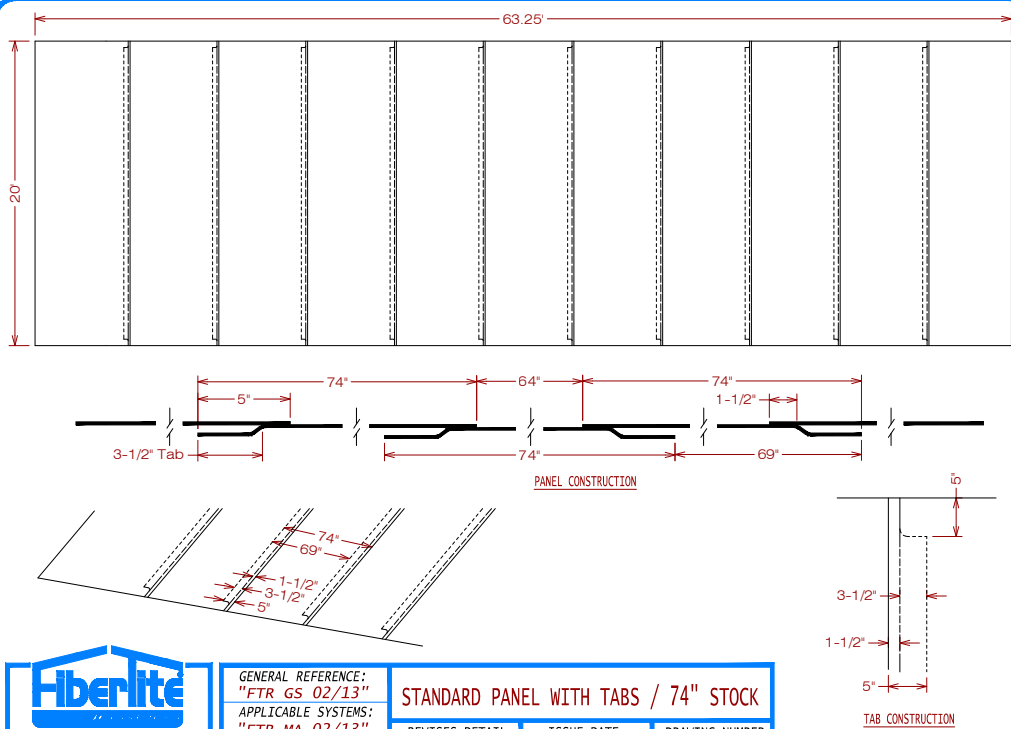


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

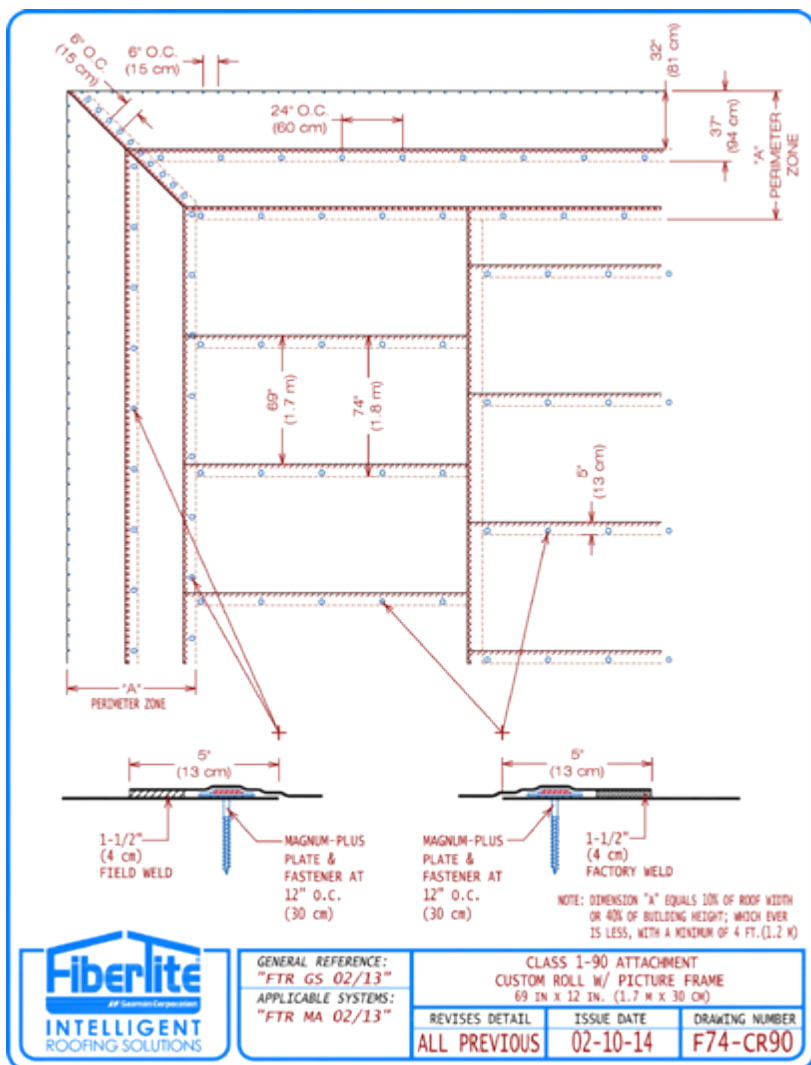
CLASS 1-120 ATTACHMENT  
74 IN. (1.9 M) ROLLS W/ STRIP IN PERIMETER  
69 IN. x 6 IN. O.C. & 34.5 IN. x 6 IN. O.C.

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	F74-RG120b

# 4.4 Construction Details: Sheet Layouts

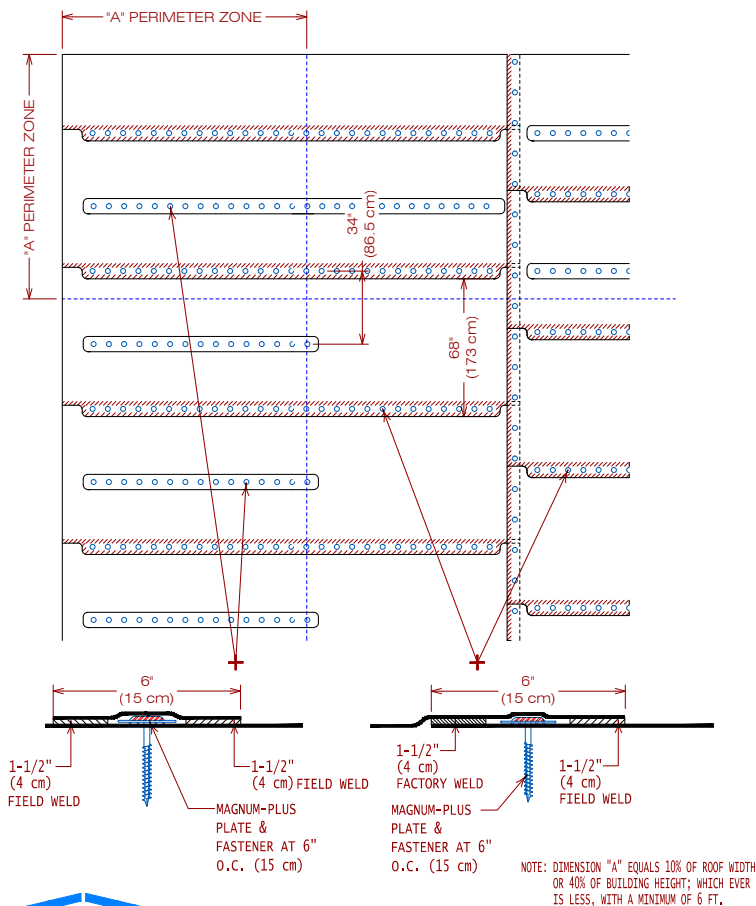


# 4.4 Construction Details: Sheet Layouts





# 4.4 Construction Details: Sheet Layouts

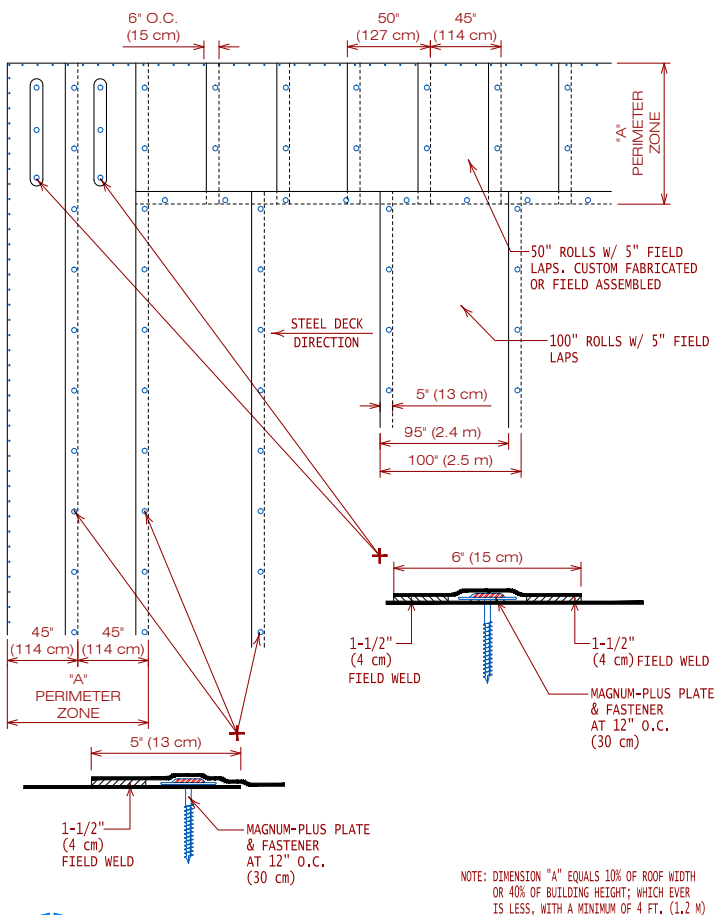


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

"TOP SIDER"  
1-165  
68 in. x 6 in. (173 cm x 15 cm)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	F74-TSXX

# 4.4 Construction Details: Sheet Layouts

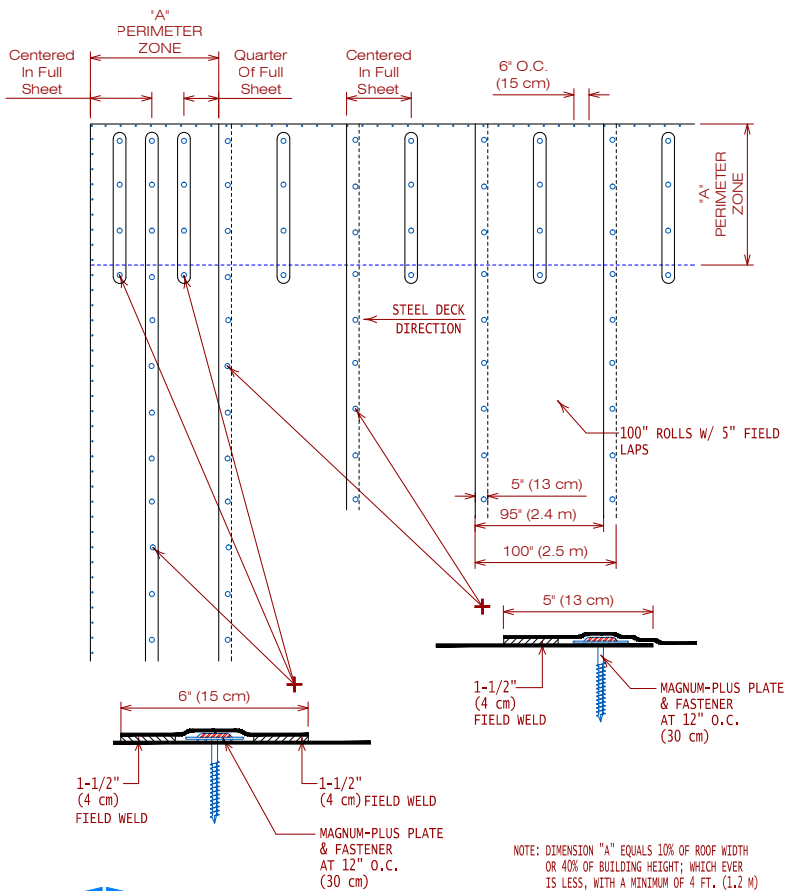


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

CLASS 1-90 ATTACHMENT  
100 IN. (2.5 m) ROLLS W/ 50 IN. (127 cm) PERIMETER ROLLS  
95 IN. x 12 IN. O.C. & 45 IN. x 12 IN. O.C.

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	F100-RG90a

# 4.4 Construction Details: Sheet Layouts

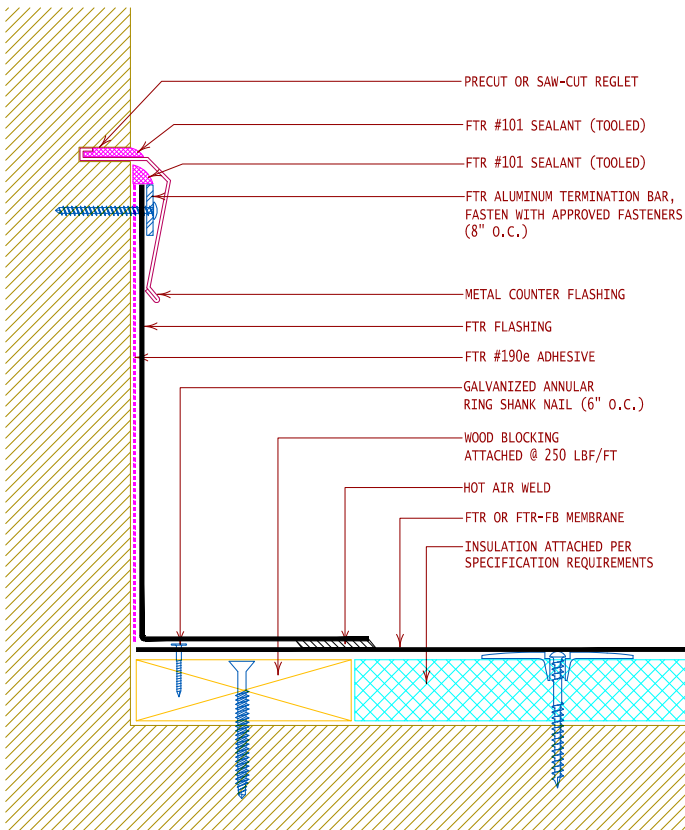


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"

CLASS 1-90 ATTACHMENT  
100 IN. (2.5 M) ROLLS W/ COVER STRIP PERIMETER  
95 IN. x 12 IN. O.C. & 47.5 IN. x 12 IN. O.C.

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	F100-RG90b

# 4.5 Construction Details: Wall Conditions

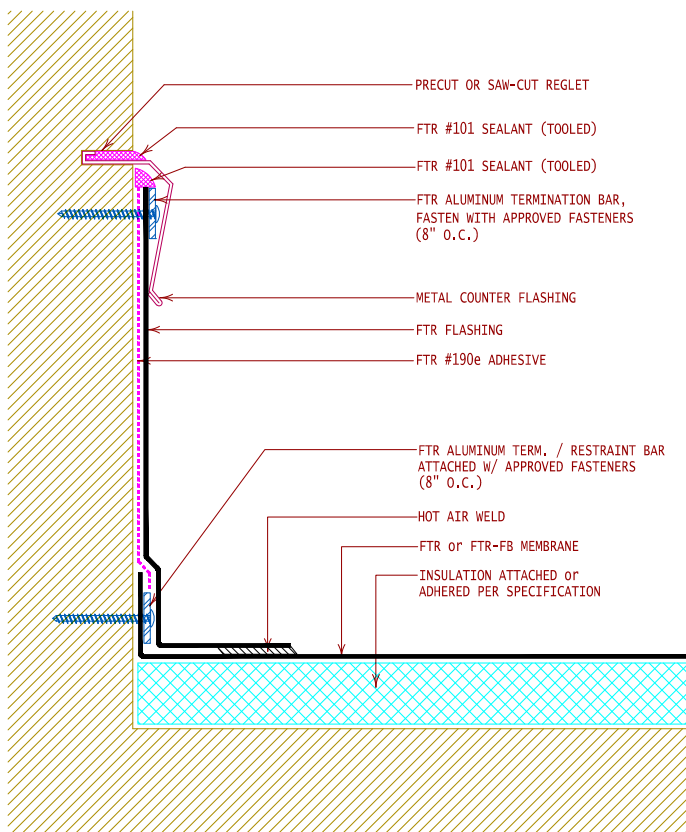


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL "MEMBRANE" WALL FLASHING HORIZONTAL BLOCKING W/ SAWCUT REGLET

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW1

# 4.5 Construction Details: Wall Conditions

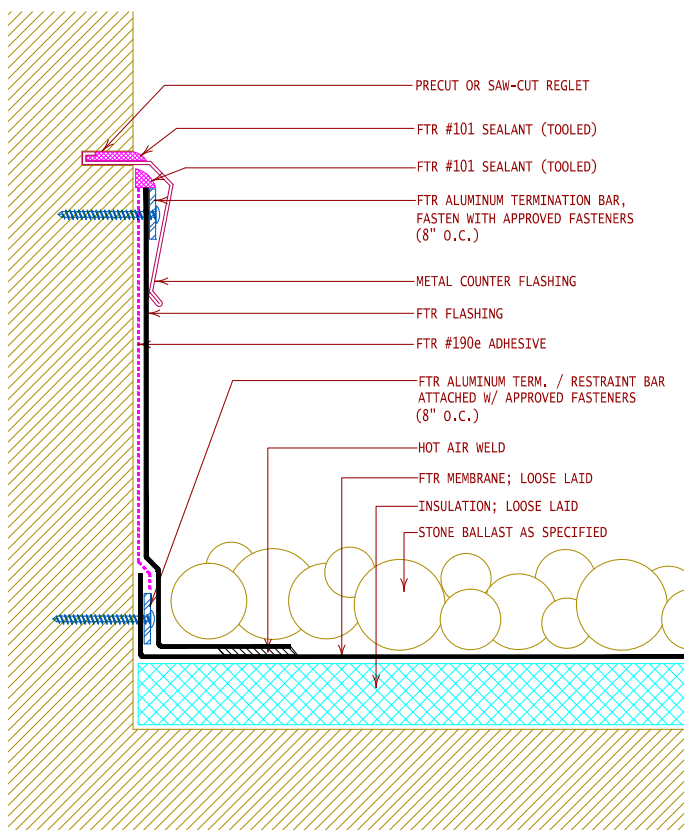


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"

WALL FLASHING (BLOCKING ALTERNATE)  
T-BAR BASE RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-Dw1a

# 4.5 Construction Details: Wall Conditions

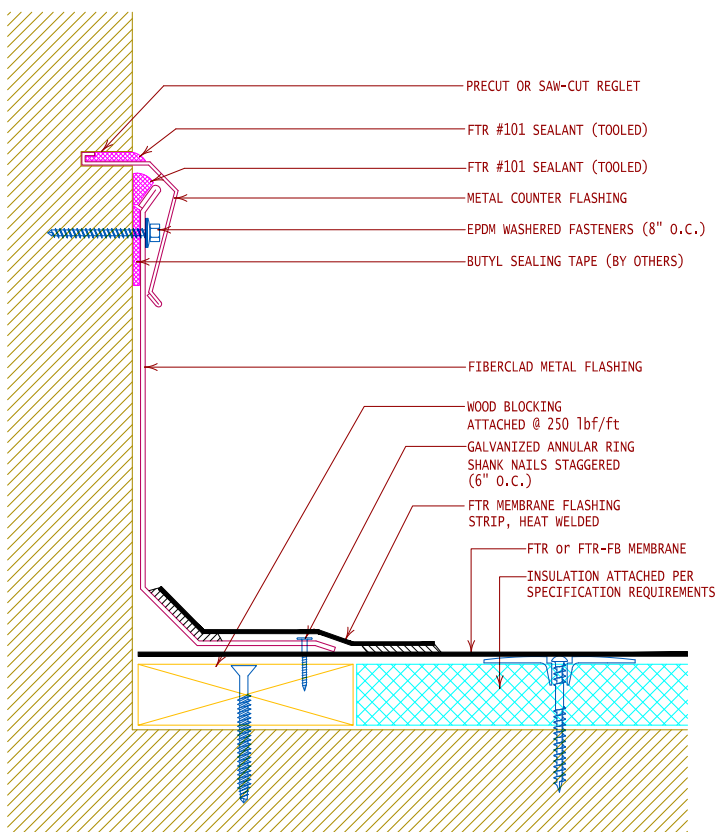


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR BA 02/13"

WALL FLASHING (BLOCKING ALTERNATE)  
T-BAR BASE RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW1b

# 4.5 Construction Details: Wall Conditions

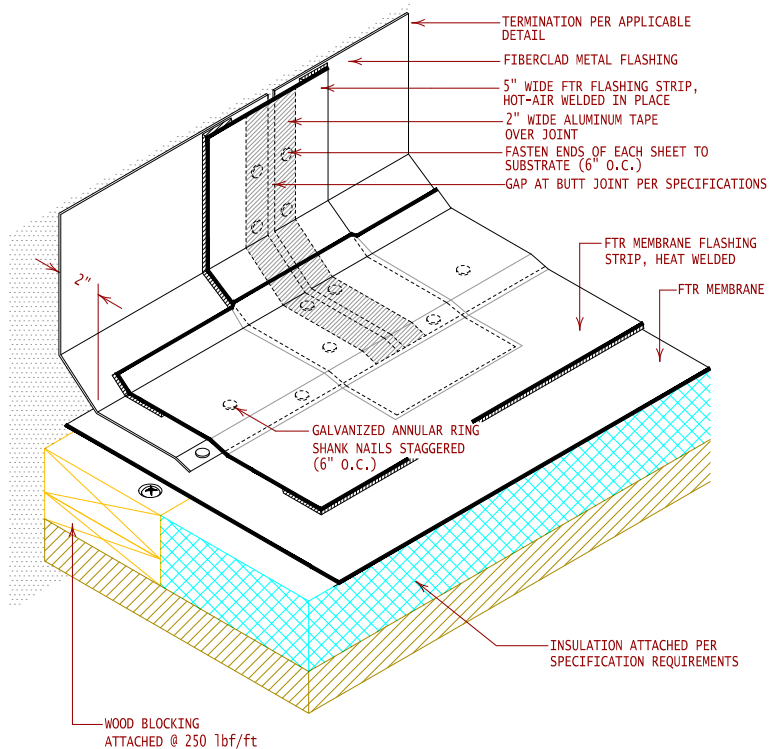


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

TYPICAL "CLAD" METAL WALL FLASHING  
HORIZONTAL BLOCKING W/ SAWCUT REGLET

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW2

# 4.5 Construction Details: Wall Conditions



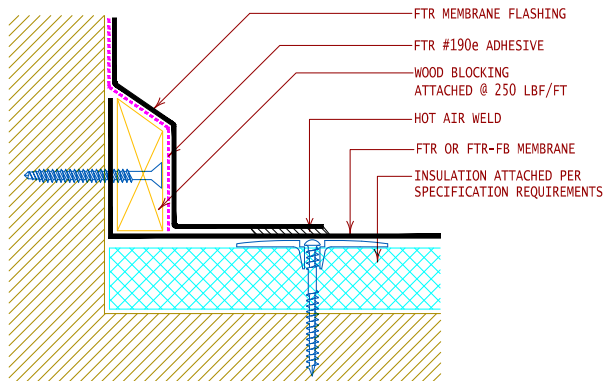
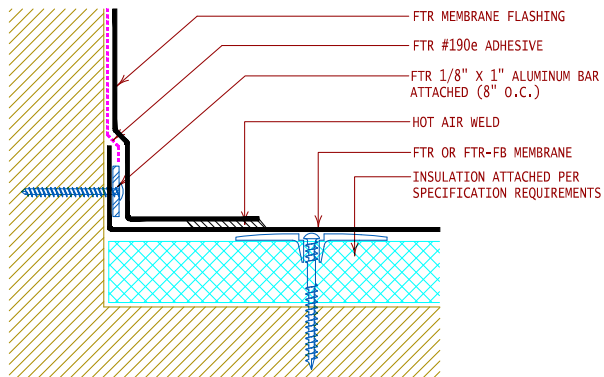
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL "CLAD" METAL WALL FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW21



# 4.5 Construction Details: Wall Conditions

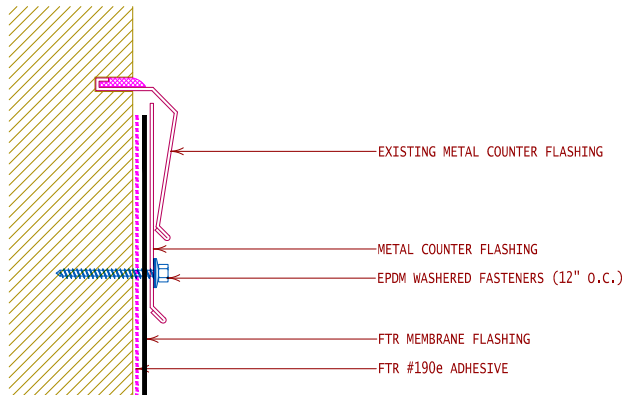
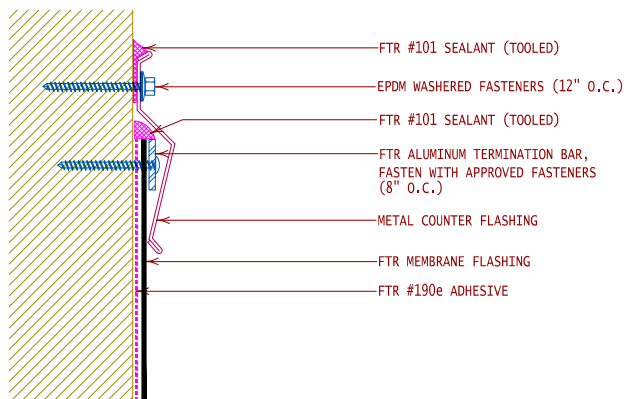


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## WALL FLASHING ALTERNATE "BASE" SECUREMENT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW3

# 4.5 Construction Details: Wall Conditions



GENERAL REFERENCE:

"FTR GS 02/13"

APPLICABLE SYSTEMS:

"FTR MA 02/13"

"FTR AD 02/13"

"FTR BA 02/13"

WALL FLASHING  
ALTERNATE TERMINATION'S

REVISES DETAIL

ALL PREVIOUS

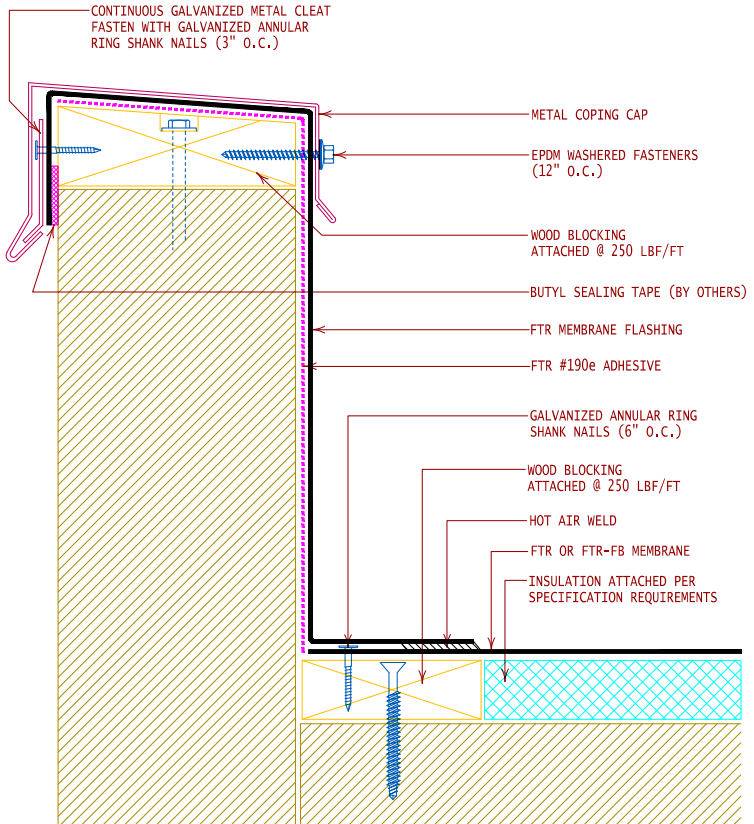
ISSUE DATE

02-10-14

DRAWING NUMBER

FTR-DW4

# 4.5 Construction Details: Wall Conditions

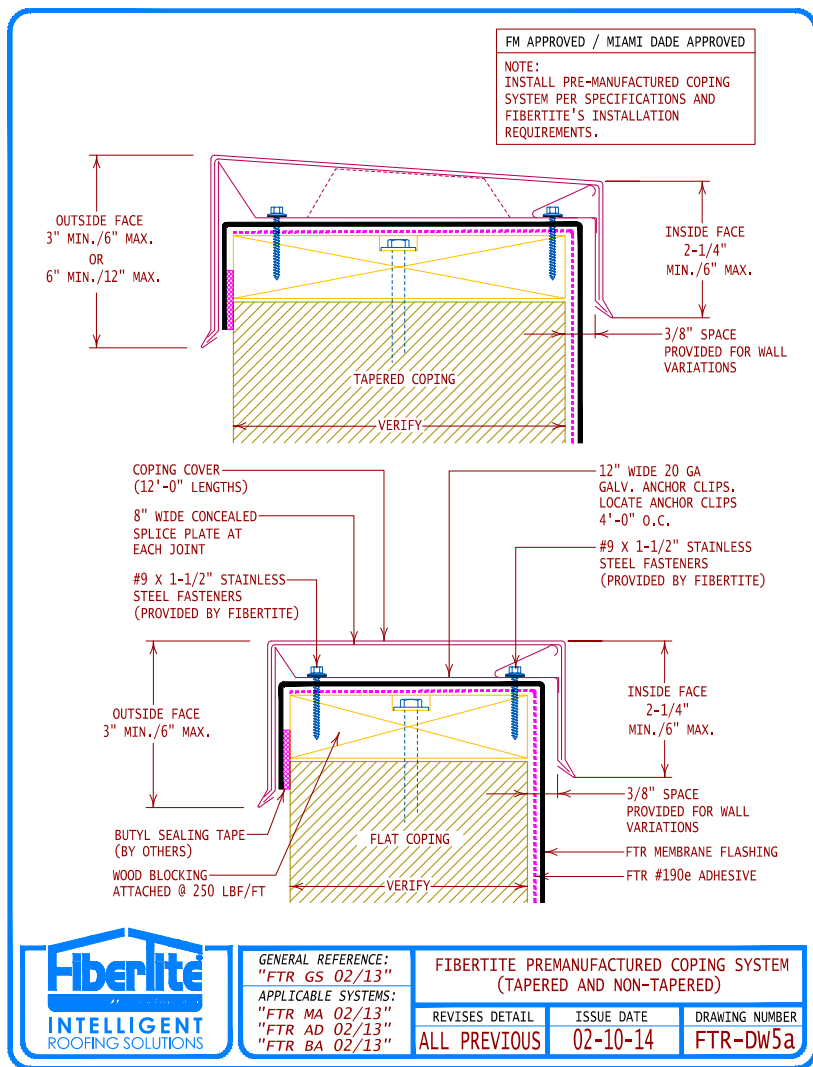


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## WALL FLASHING WITH METAL CAP FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW5

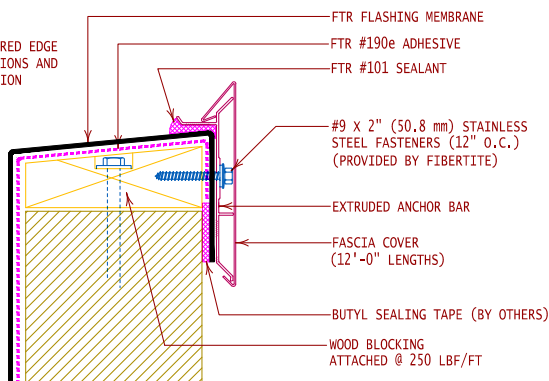
# 4.5 Construction Details: Wall Conditions



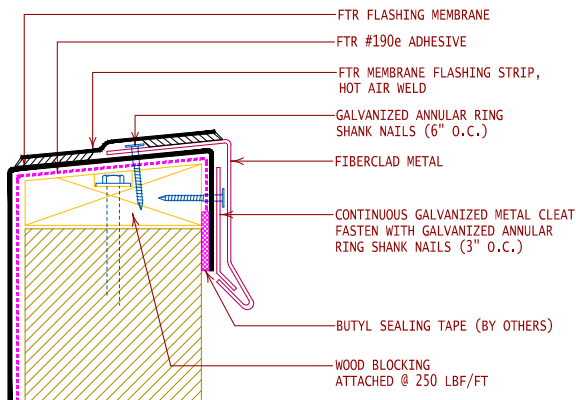
# 4.5 Construction Details: Wall Conditions

## FIBERTITE AT FASCIA SYSTEM (STANDARD FASCIA)

NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS.



## FIBERCLAD METAL

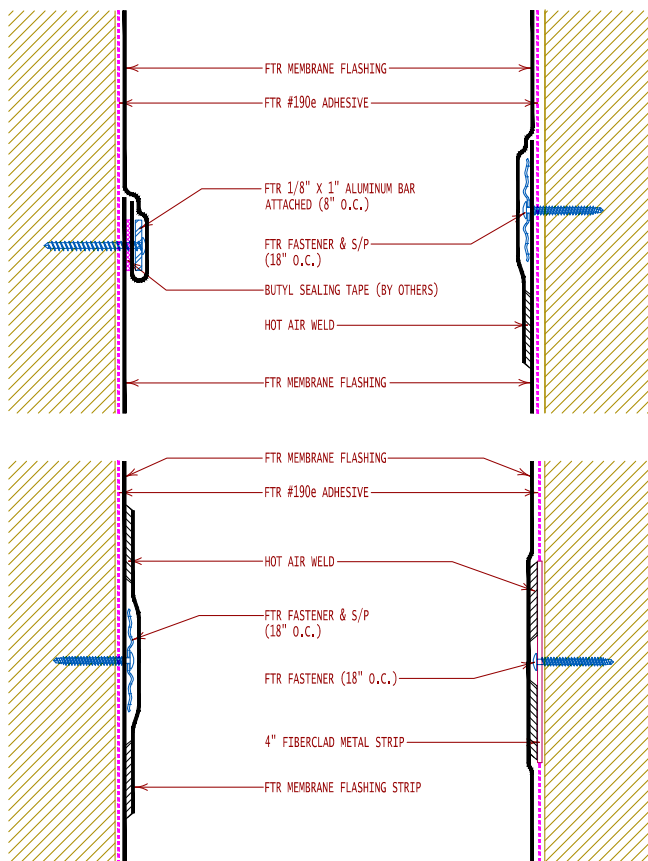


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

### ALTERNATE COPING / FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW6

# 4.5 Construction Details: Wall Conditions

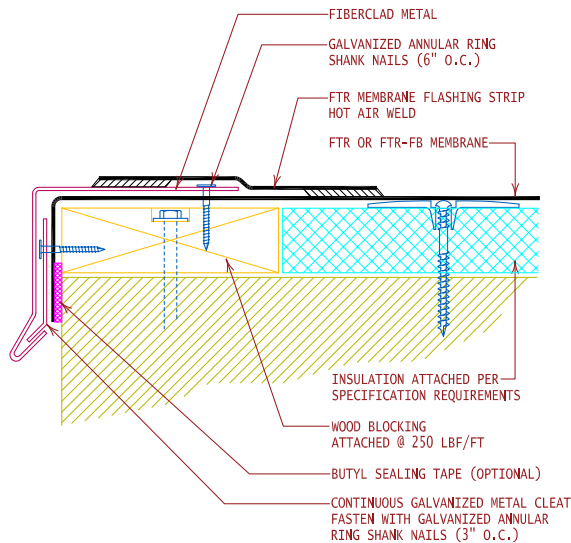
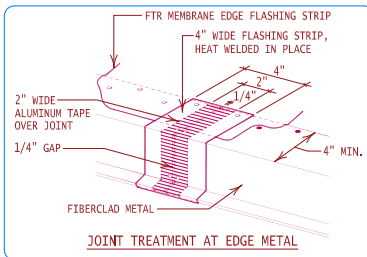


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

WALL FLASHING / INTERMEDIATE ATTACHMENT  
WHEN NECESSARY

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW7

# 4.6 Construction Details: Edge Conditions

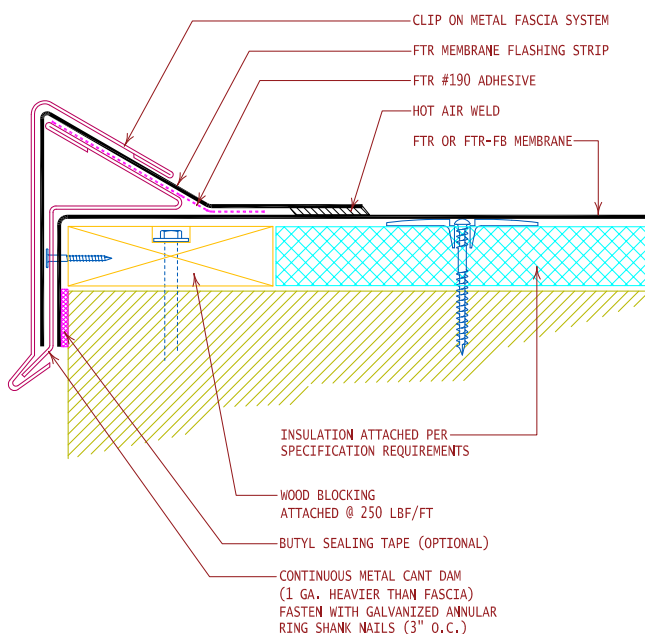


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"

## TYPICAL EDGE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE1

# 4.6 Construction Details: Edge Conditions



GENERAL REFERENCE:  
"FTR GS 02/13"

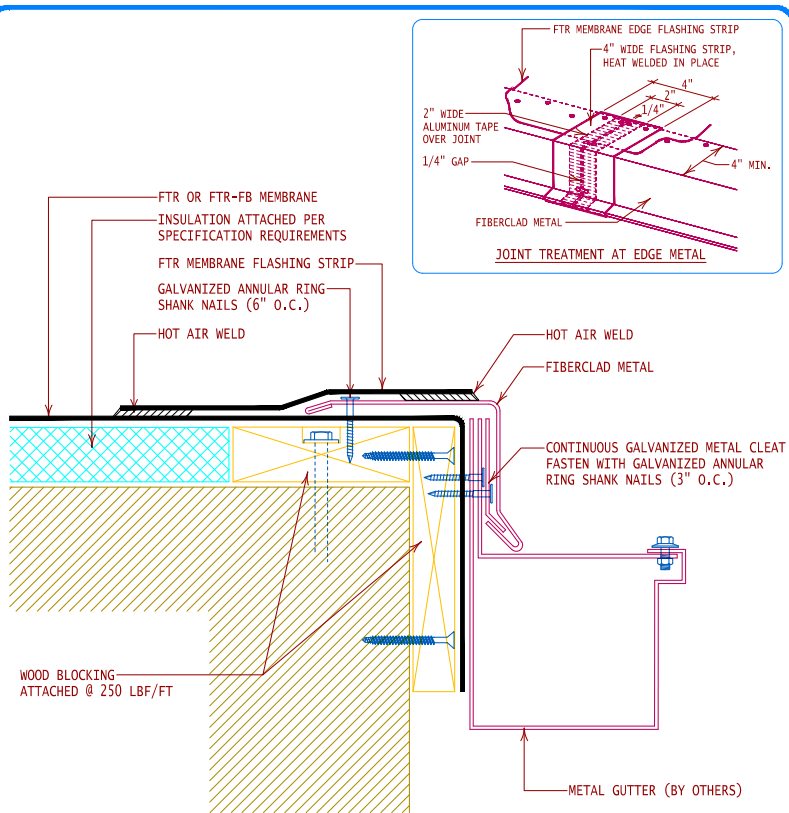
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

2-PIECE SHOP FABRICATED  
METAL EDGE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE2



# 4.6 Construction Details: Edge Conditions



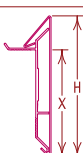
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"

## GUTTER FLASHING

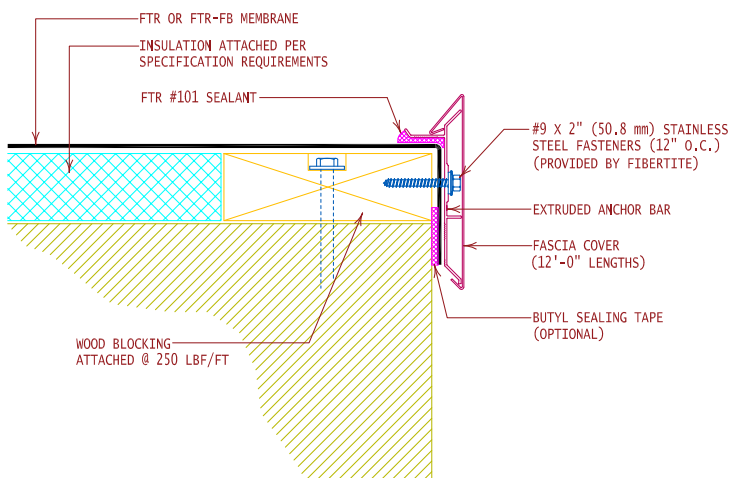
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE3

# 4.6 Construction Details: Edge Conditions

FIBERTITE AT FASCIA SYSTEM (STANDARD FASCIA)			
PRODUCT ID. NO.	H DIMENSION	X DIMENSION	NAILER COVERAGE
F-2040	4" (101.6 mm)	2-3/4" (69.9 mm)	1 NAILER
F-2055	5-1/2" (139.7 mm)	4-1/2" (108.0 mm)	2 NAILERS
F-2070	7" (177.8 mm)	5-3/4" (146.0 mm)	3 NAILERS
F-2085	8-1/2" (215.9 mm)	7-1/4" (184.2 mm)	4 NAILERS
FM APPROVED 1-645 / MIAMI DADE APPROVED			

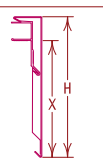


NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS

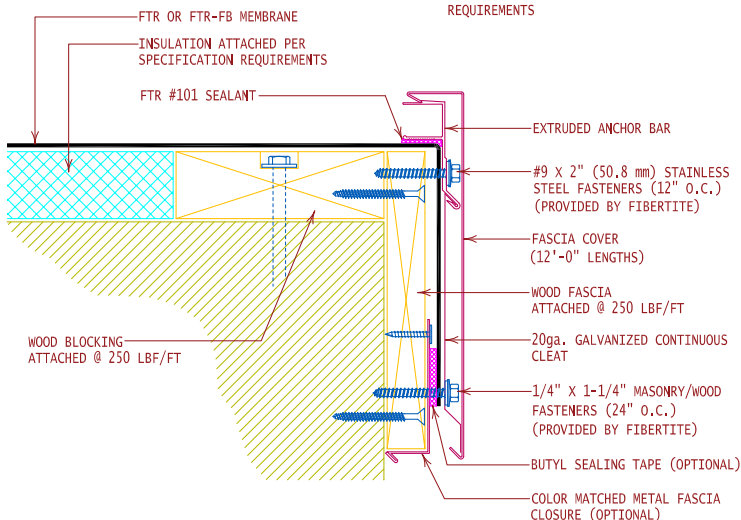


# 4.6 Construction Details: Edge Conditions

FIBERTITE AT FASCIA SYSTEM (LARGE FASCIA)		
PRODUCT ID. NO.	H DIMENSION	X DIMENSION
EFF-2085	8-1/2" (215.9 mm)	7-1/4" (184.2 mm)
EFF-2100	10" (251.0 mm)	8-3/4" (222.25 mm)
EFF-2115	11-1/2" (292.1 mm)	10-1/4" (260.35 mm)
EFF-2130	13" (215.9 mm)	11-3/4" (298.45 mm)
FM APPROVED 1-270 / MIAMI DADE APPROVED		



NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS

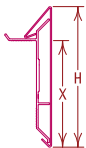


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"

## FIBERTITE AT FASCIA SYSTEM (LARGE FASCIA EDGE)

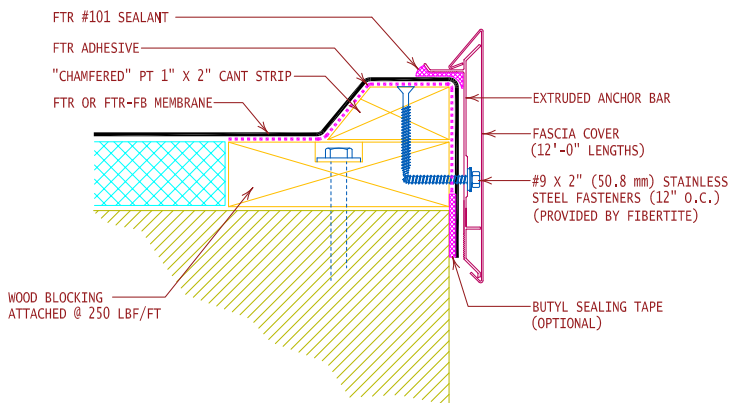
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE4a

# 4.6 Construction Details: Edge Conditions

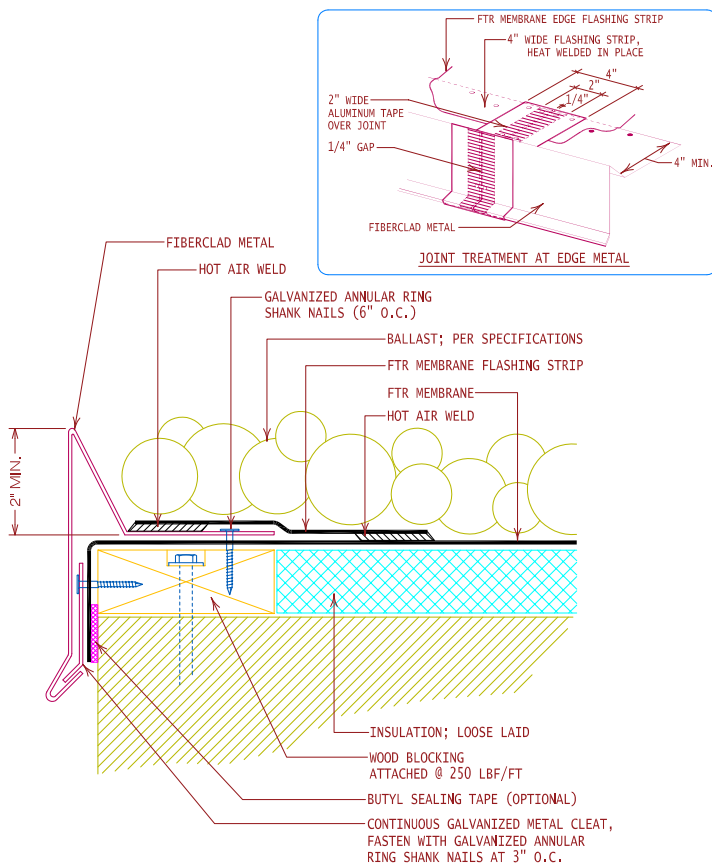
FIBERTITE AT FASCIA SYSTEM (STANDARD FASCIA)				
PRODUCT ID, NO.	H DIMENSION	X DIMENSION	NAILER COVERAGE	
F-2040	4" (101.6 mm)	2-3/4" (69.9 mm)	1 NAILER	
F-2055	5-1/2" (139.7 mm)	4-1/2" (108.0 mm)	2 NAILERS	
F-2070	7" (177.8 mm)	5-3/4" (146.0 mm)	3 NAILERS	
F-2085	8-1/2" (215.9 mm)	7-1/4" (184.2 mm)	4 NAILERS	

FM APPROVED 1-645 / MIAMI DADE APPROVED

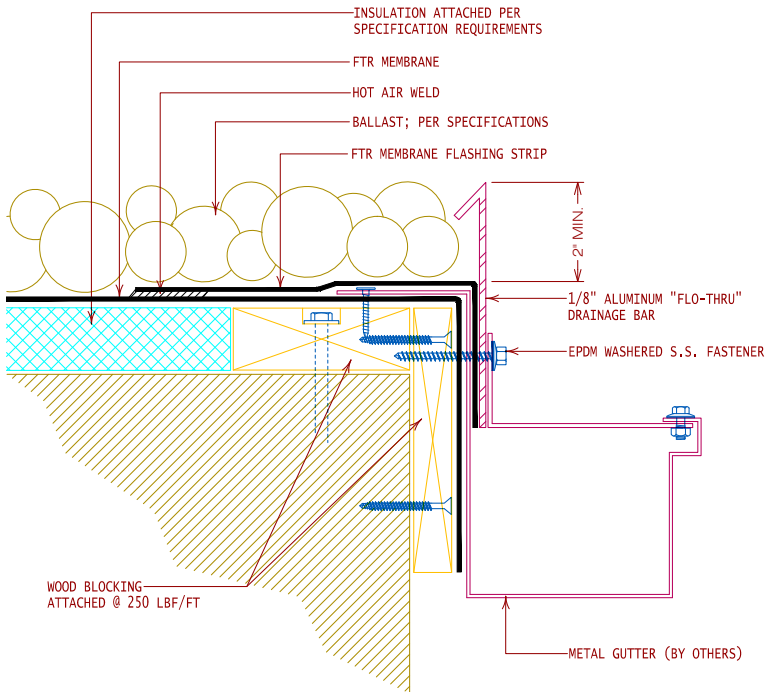
NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS



# 4.6 Construction Details: Edge Conditions



# 4.6 Construction Details: Edge Conditions

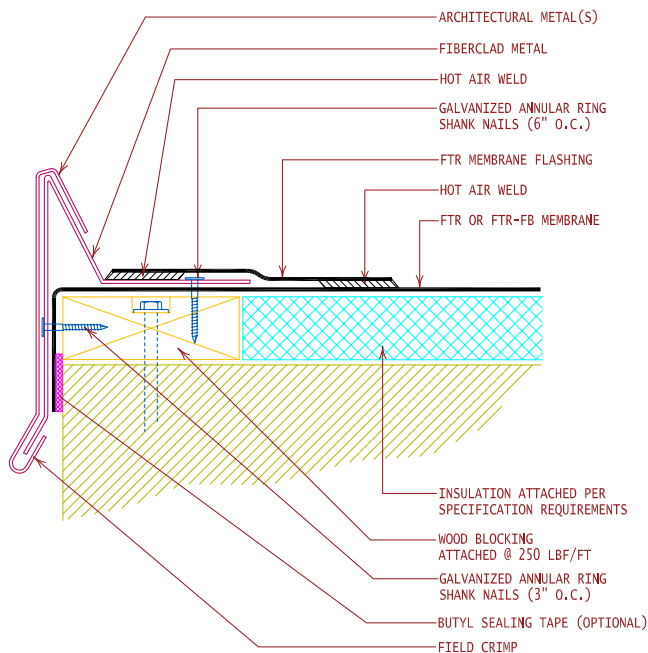


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR BA 02/13"

## GUTTER FLASHING BALLAST ROOFING SYSTEM(S)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE7

# 4.6 Construction Details: Edge Conditions



GENERAL REFERENCE:  
"FTR GS 02/13"

APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

ARCHITECTURAL METAL FASCIA  
WITH FIBERCLAD METAL CLEAT

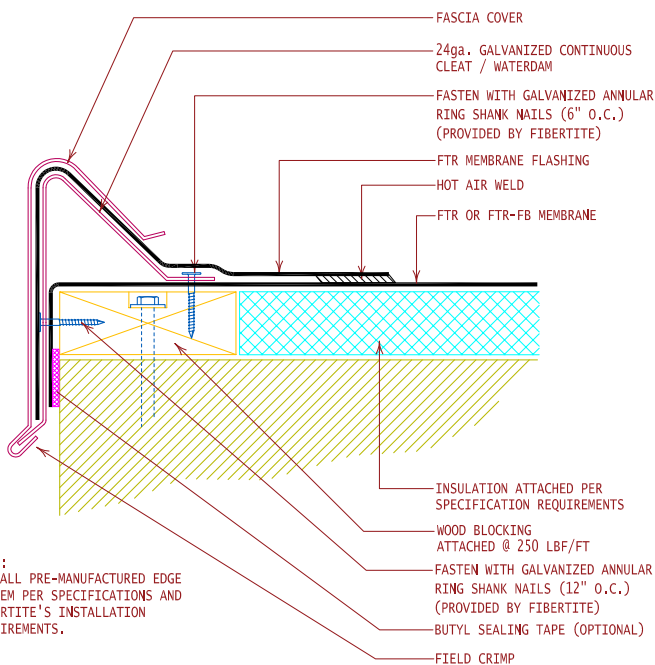
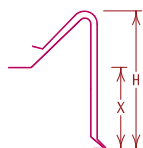
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE8

# 4.6 Construction Details: Edge Conditions

FIBERTITE 200 FASCIA SYSTEM

PRODUCT ID. NO.	H DIMENSION	X DIMENSION	NAILER COVERAGE
FAF-50	5" (127.0 mm)	3" (76.2 mm)	1 NAILER
FAF-65	6-1/2" (165.1 mm)	4-1/2" (114.3 mm)	2 NAILERS
FAF-80	8" (203.2 mm)	6" (152.4 mm)	3 NAILERS
FAF-95	9-1/2" (241.3 mm)	7-1/2" (190.5 mm)	4 NAILERS
FAF-110	11" (279.4 mm)	9" (228.6 mm)	5 NAILERS
FAF-125	12-1/2" (314.5 mm)	10-1/2" (266.7 mm)	6 NAILERS

FM APPROVED UP TO 1-195



NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS.



GENERAL REFERENCE:

"FTR GS 02/13"

APPLICABLE SYSTEMS:

"FTR MA 02/13"

"FTR AD 02/13"

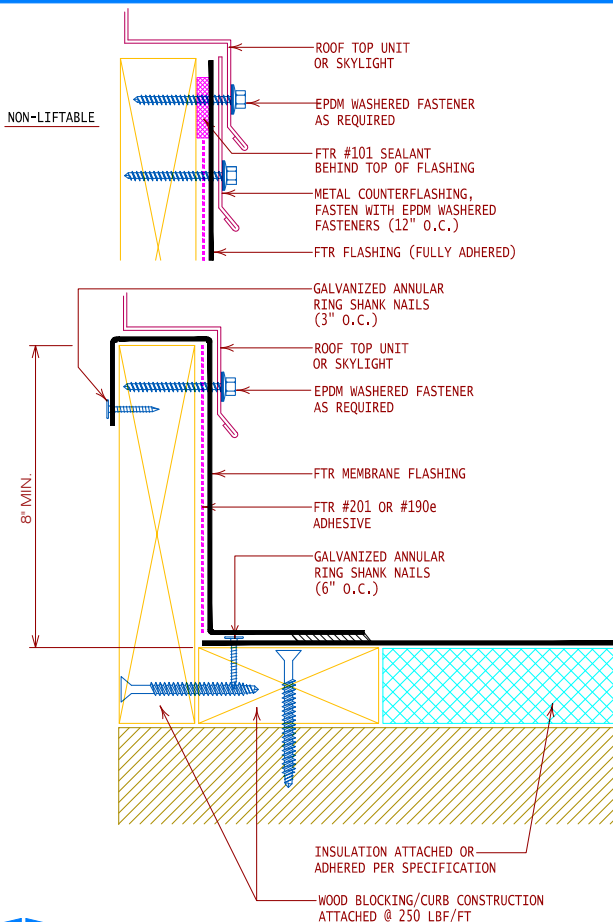
"FTR BA 02/13"

FIBERTITE 200 FASCIA SYSTEM  
(RAISED CLEAT EDGE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE8a



# 4.7 Construction Details: Penetrations

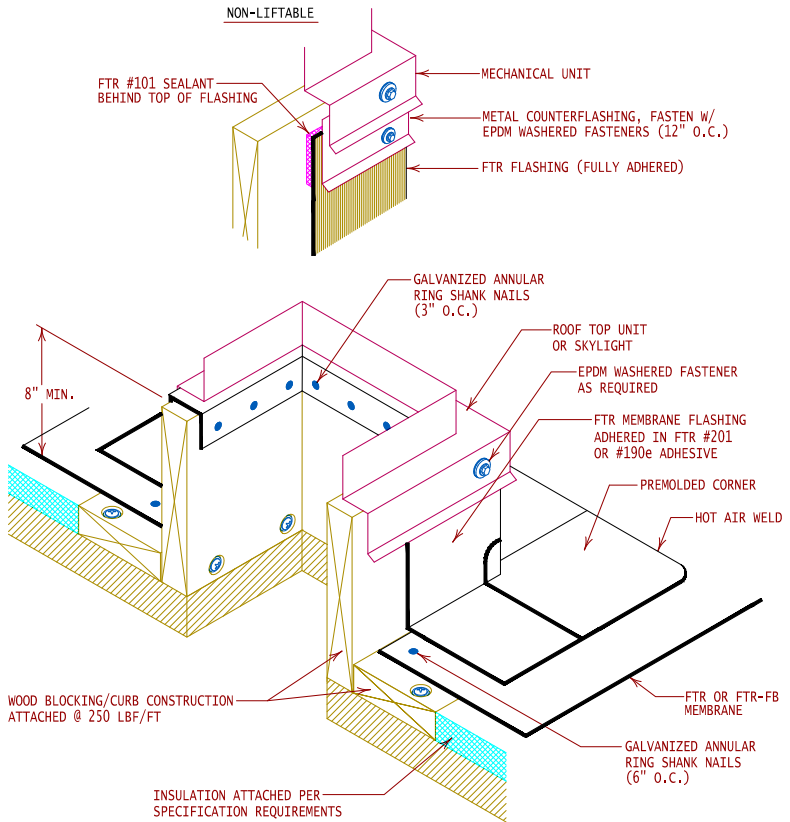


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL WOOD CURB OR SKYLIGHT FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1

# 4.7 Construction Details: Penetrations



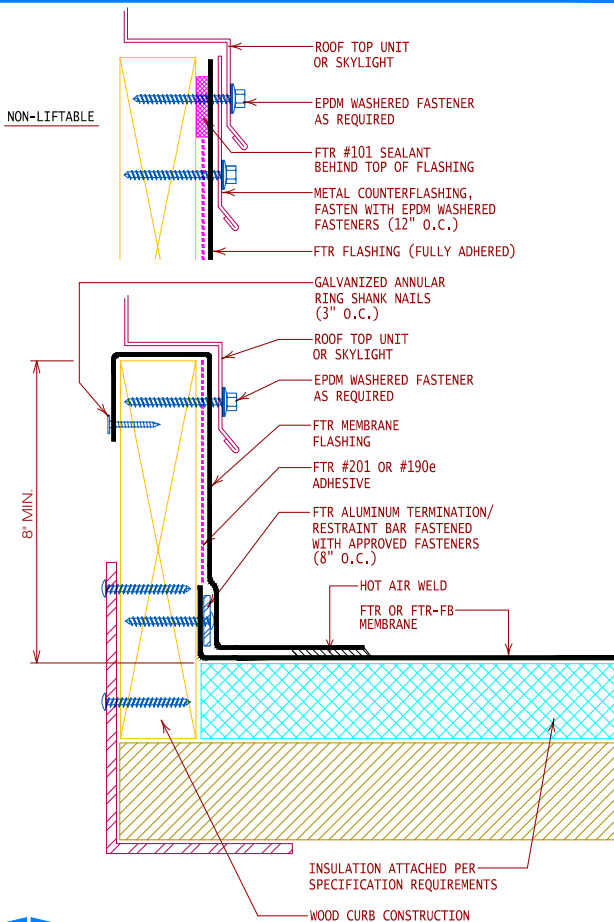
GENERAL REFERENCE:  
"FTR GS 02/13"

APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

TYPICAL WOOD CURB  
OR SKYLIGHT FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1I

# 4.7 Construction Details: Penetrations

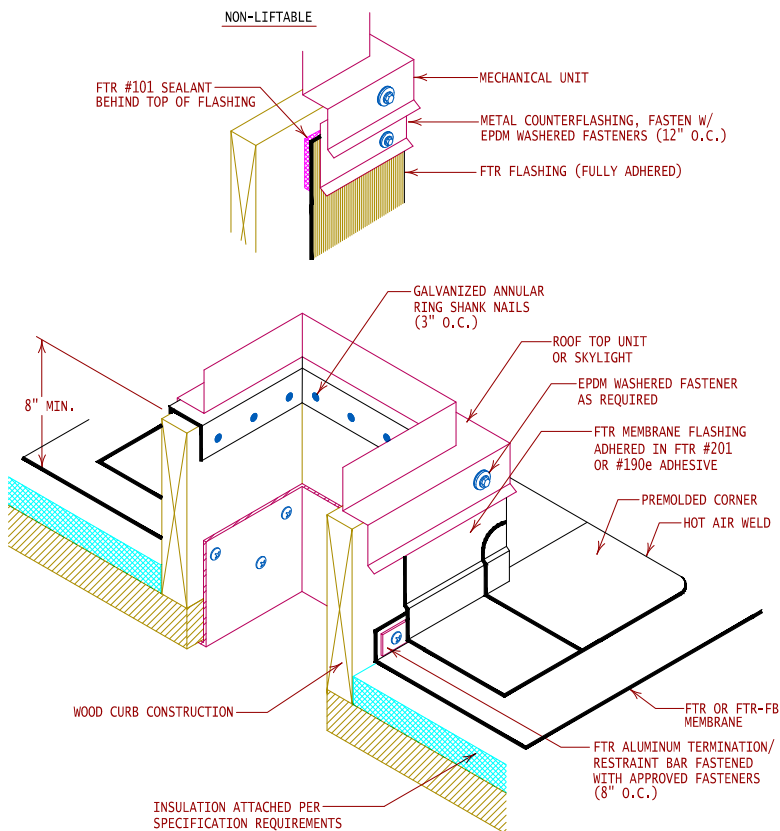


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL WOOD OR SKYLIGHT CURB FLASHING (BLOCKING ALTERNATE) T-BAR RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1a

# 4.7 Construction Details: Penetrations



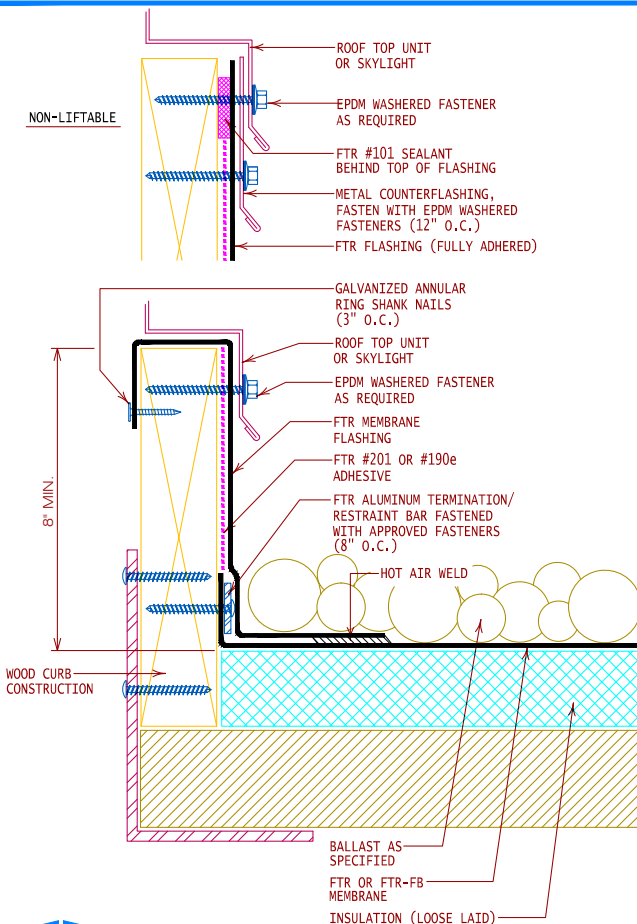
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

TYPICAL WOOD OR SKYLIGHT CURB FLASHING  
(BLOCKING ALTERNATE) T-BAR RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1ai

# 4.7 Construction Details: Penetrations

NON-LIFTABLE

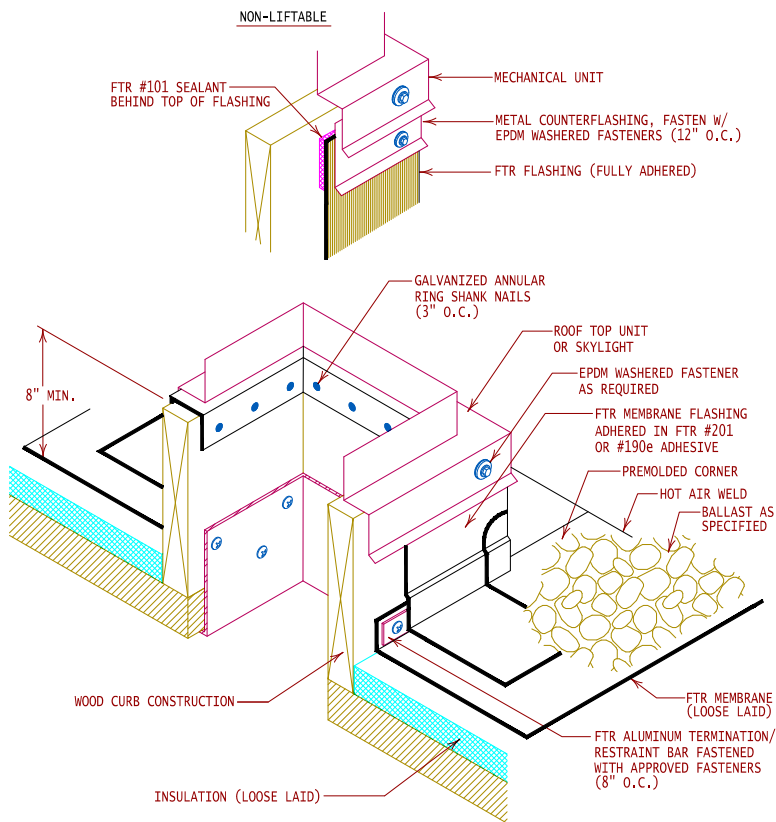


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR BA 02/13"

WOOD CURB or SKYLIGHT FLASHING  
(BLOCKING ALTERNATE) T-BAR RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1b

# 4.7 Construction Details: Penetrations



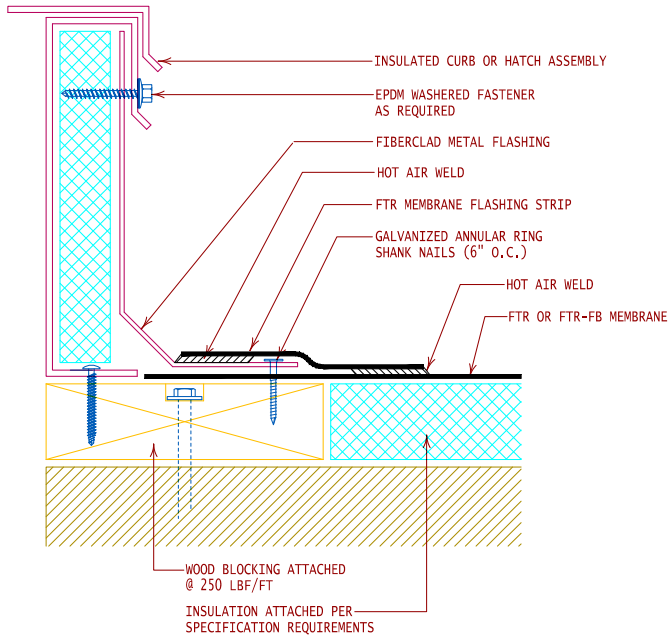
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR BA 02/13"

WOOD CURB or SKYLIGHT FLASHING  
(BLOCKING ALTERNATE) T-BAR RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1bi

# 4.7

## Construction Details: Penetrations

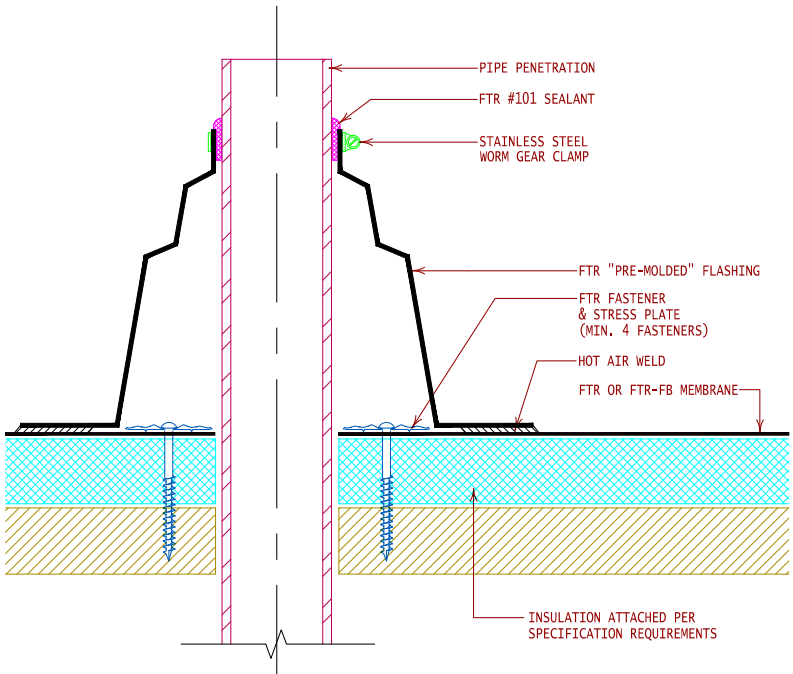


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

INSULATED CURB  
OR FIRE-HATCH

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP2

# 4.7 Construction Details: Penetrations



GENERAL REFERENCE:  
"FTR GS 02/13"

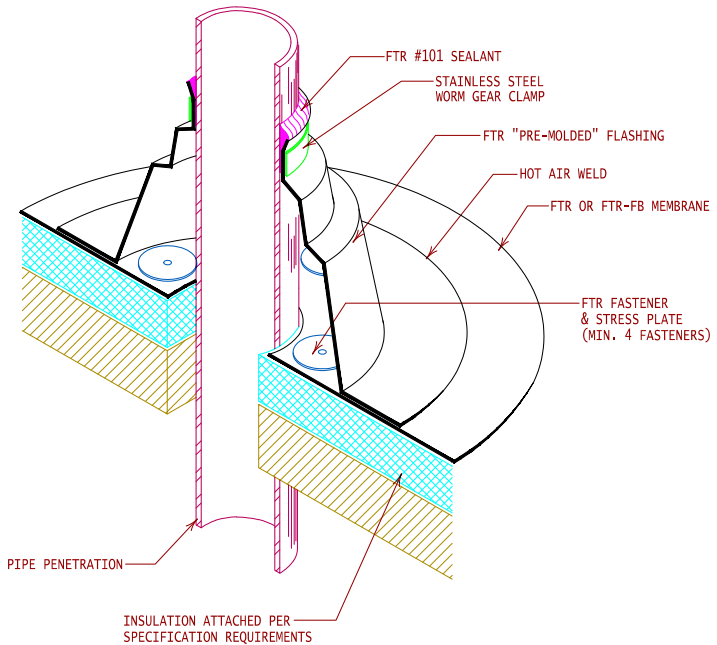
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## PRE-MOLDED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP3



# 4.7 Construction Details: Penetrations

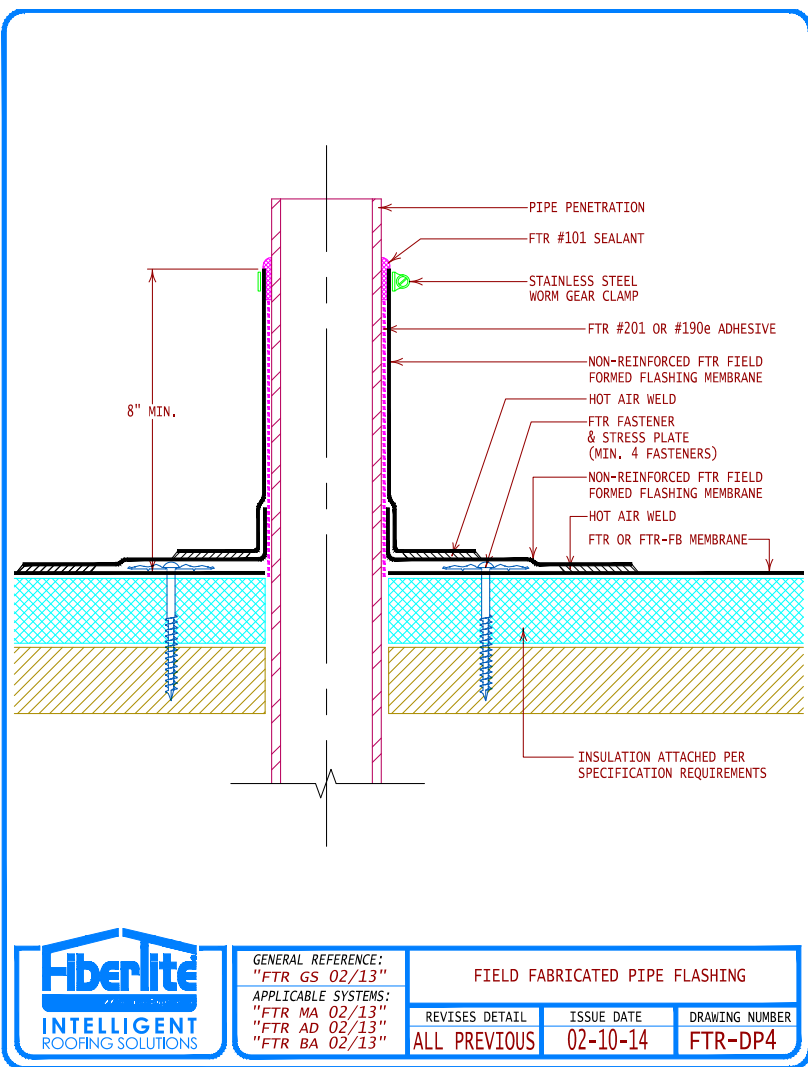


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

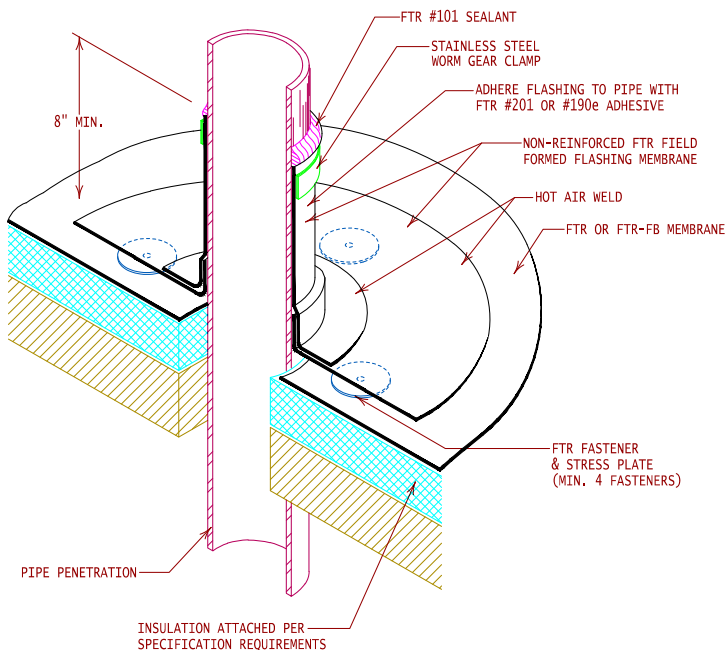
## PRE-MOLDED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP31

# 4.7 Construction Details: Penetrations



# 4.7 Construction Details: Penetrations



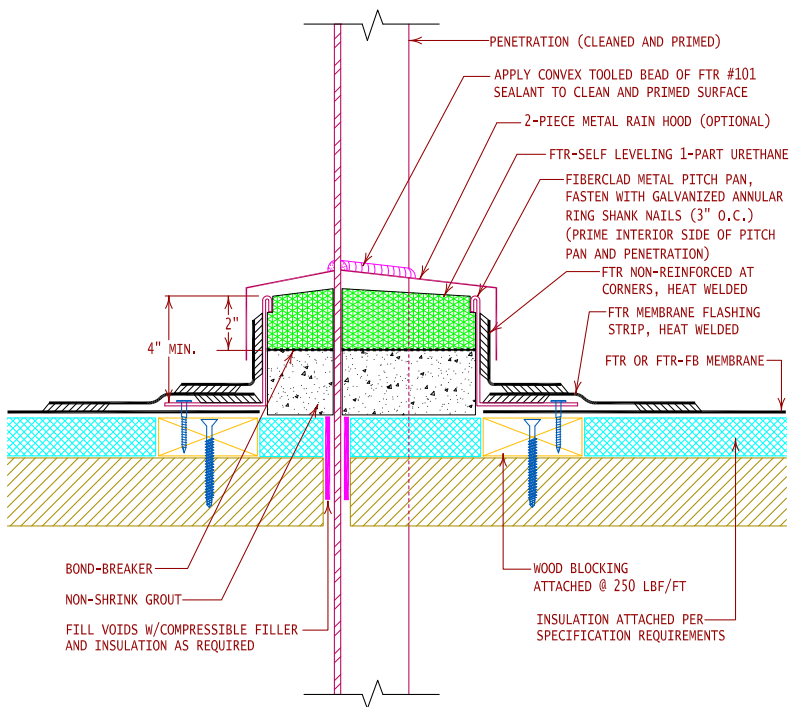
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## FIELD FABRICATED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP4i

# 4.7 Construction Details: Penetrations

NOTE:  
STRIP IN CORNER SEAM OF PITCH PAN  
WITH HEAT WELDED FLASHING STRIP.



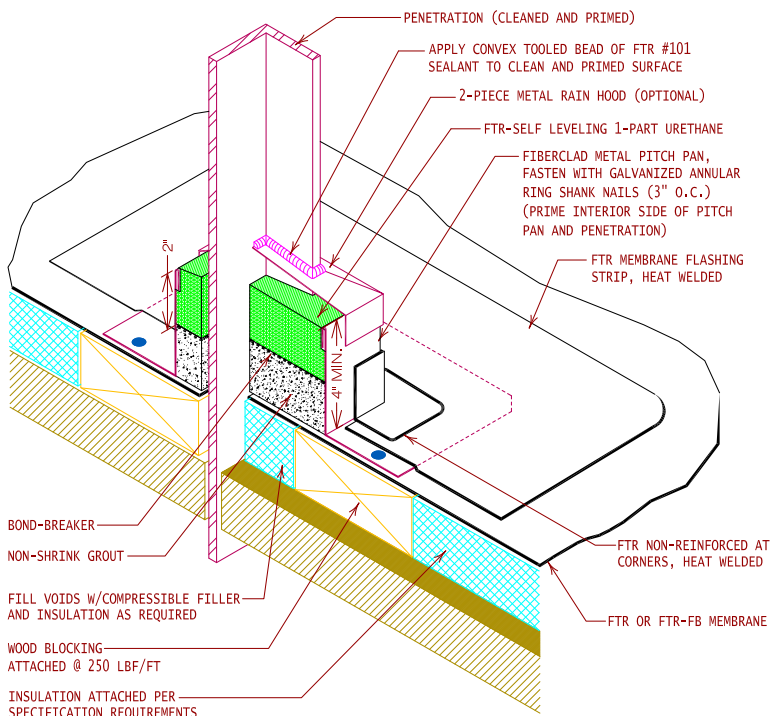
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

PITCH PAN FLASHING  
SEE FTR SPECIFICATION(S) FOR CONDITIONS ON USE

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	11/05/15	FTR-DP5

# 4.7 Construction Details: Penetrations

NOTE:  
STRIP IN CORNER SEAM OF PITCH PAN  
WITH HEAT WELDED FLASHING STRIP.

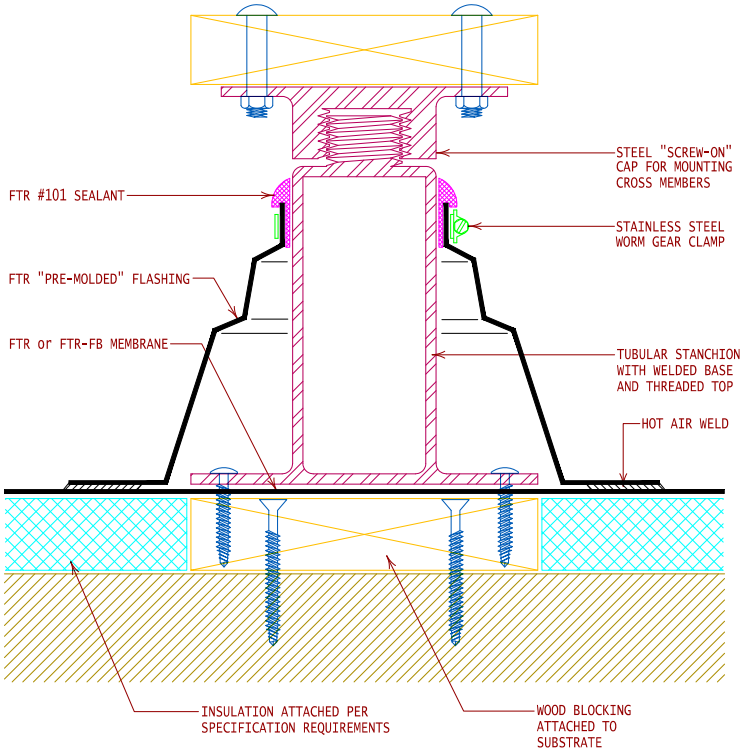


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

PITCH PAN FLASHING  
SEE FTR SPECIFICATION(S) FOR CONDITIONS ON USE

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	11/05/15	FTR-DP51

# 4.7 Construction Details: Penetrations

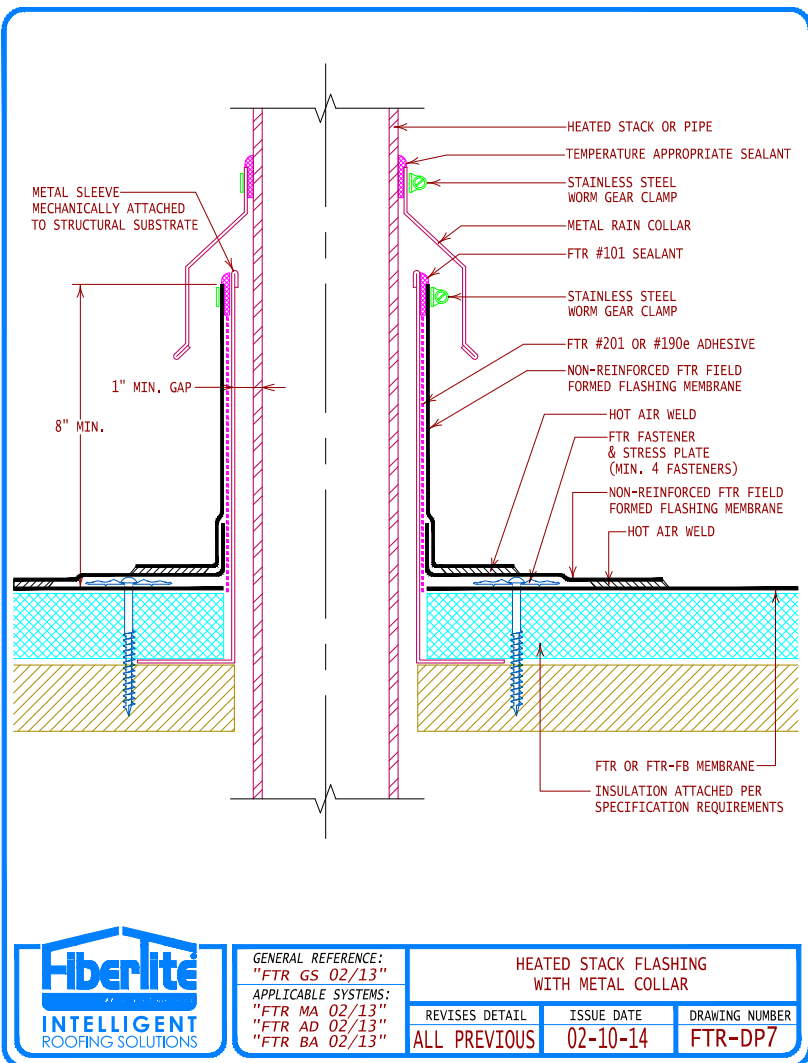


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

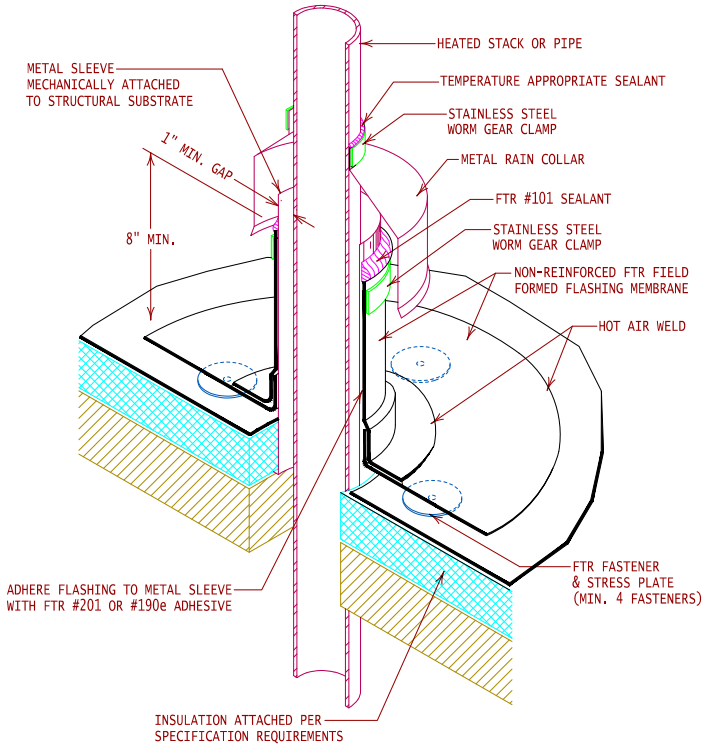
## ROOF TOP STANCHION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP6

# 4.7 Construction Details: Penetrations



# 4.7 Construction Details: Penetrations



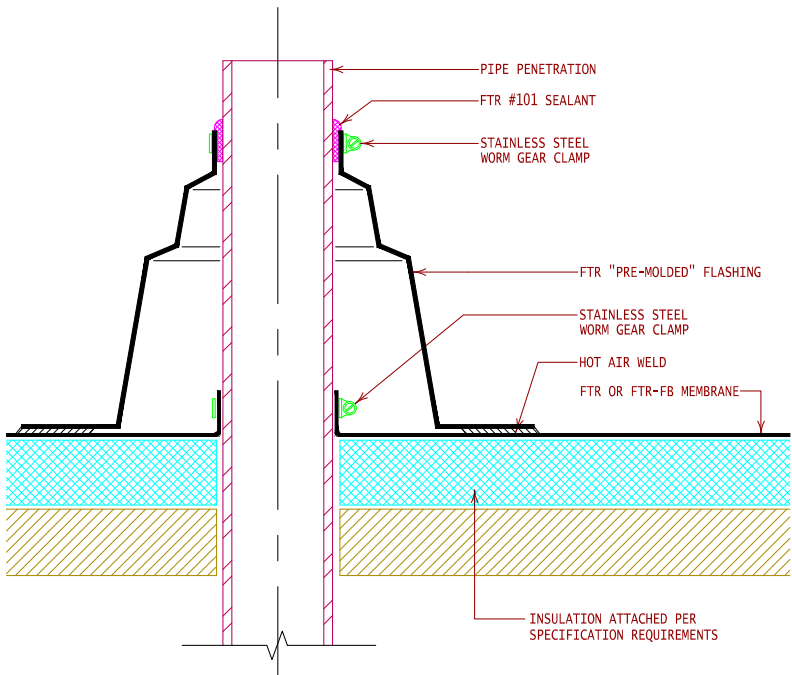
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## HEATED STACK FLASHING WITH METAL COLLAR

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP7i



# 4.7 Construction Details: Penetrations

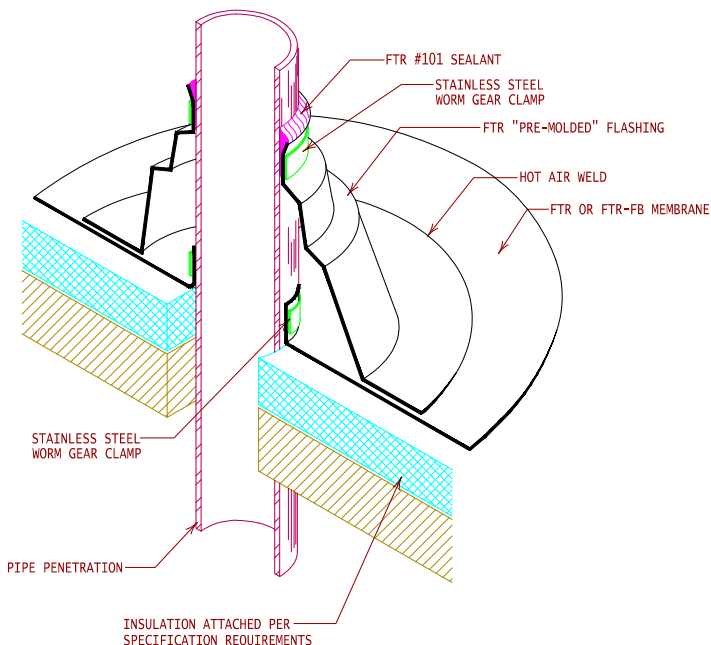


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"  
"FTR BA 02/13"

PRE-FORMED PIPE FLASHING  
ALTERNATE BASE RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP8

# 4.7 Construction Details: Penetrations

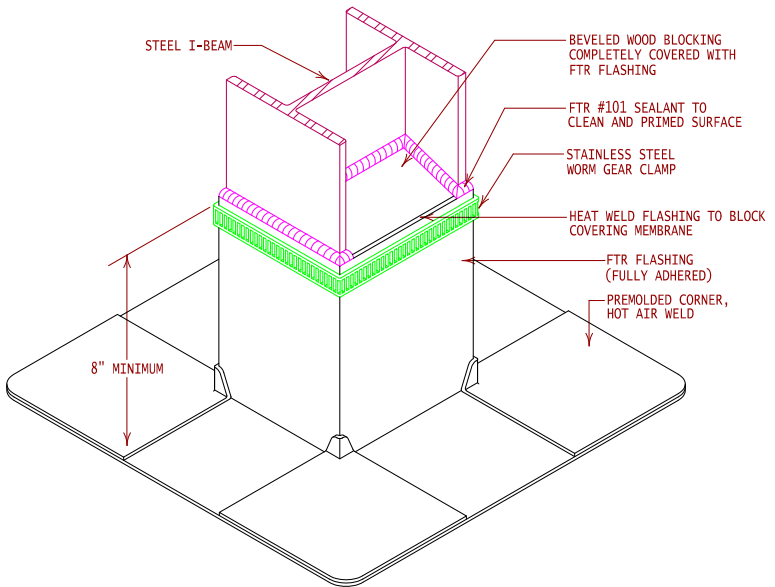


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"  
"FTR BA 02/13"

## PRE-FORMED PIPE FLASHING ALTERNATE BASE RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP8i

# 4.7 Construction Details: Penetrations

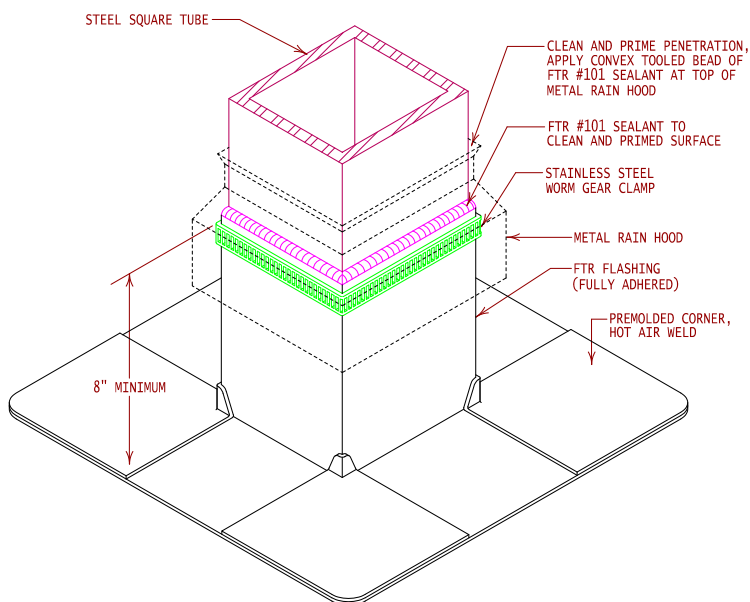


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## FIELD FABRICATED I-BEAM FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP9i

# 4.7 Construction Details: Penetrations



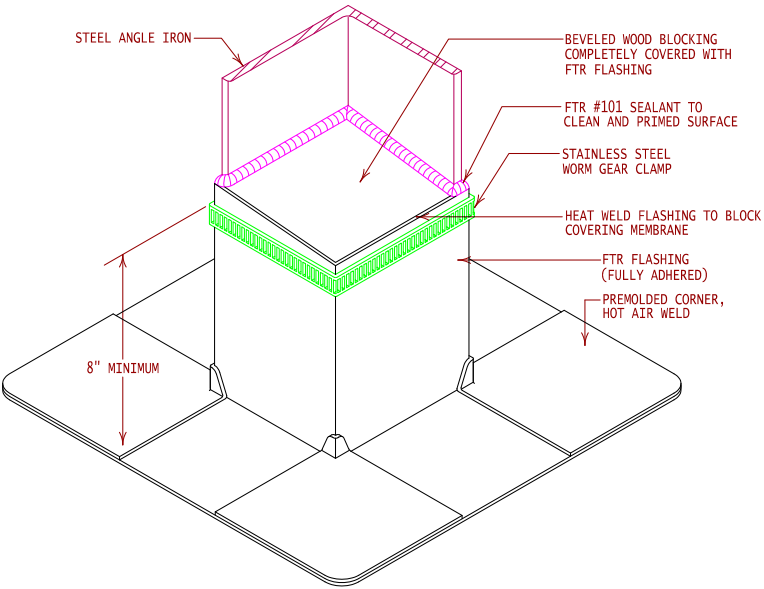
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## FIELD FABRICATED SQUARE TUBE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP101

# 4.7

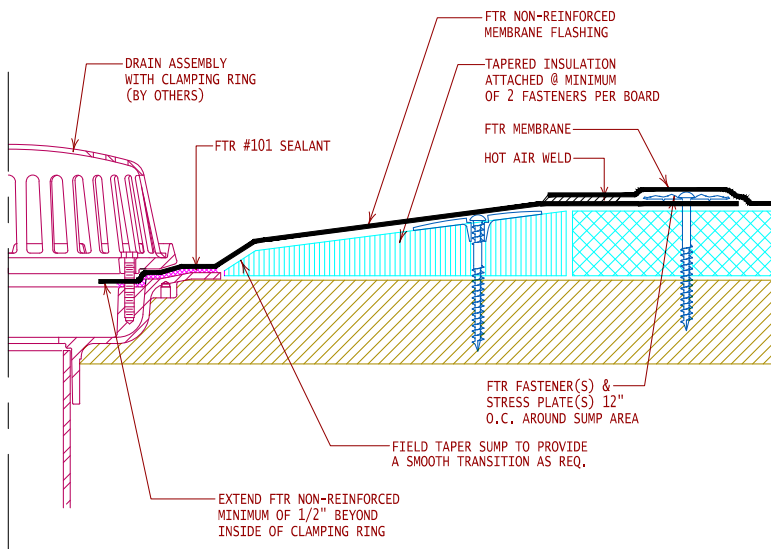
## Construction Details: Penetrations



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

FIELD FABRICATED ANGLE IRON FLASHING		
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP111

# 4.7 Construction Details: Penetrations



NOTE: USE TAPERED ROOF INSULATION (EDGE STRIPS) TO CREATE DRAIN SUMP. IF TOTAL INSULATION THICKNESS IS LESS THAN OR EQUAL TO 1 1/2 IN., TAPER 12 IN. FROM THE DRAIN CENTER. IF TOTAL INSULATION THICKNESS IS GREATER THAN 1 1/2 IN., TAPER 18 IN. FROM DRAIN CENTER.

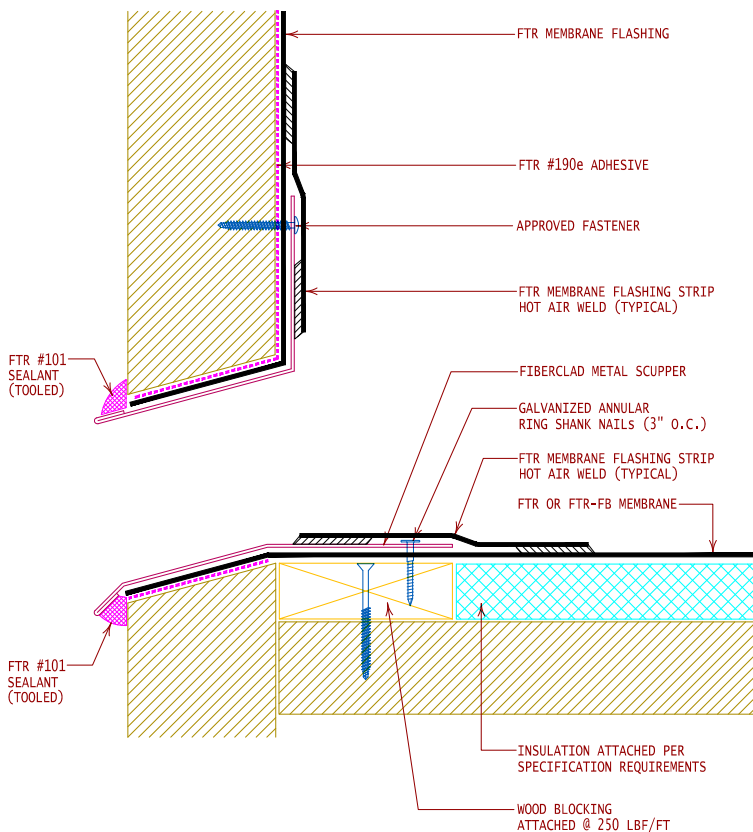


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL DRAIN FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DD1

# 4.7 Construction Details: Penetrations

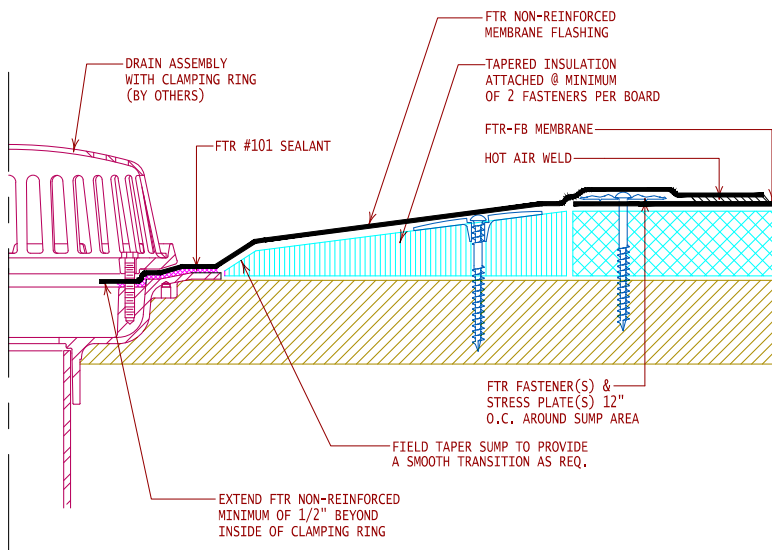


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## TYPICAL SCUPPER FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DD2

# 4.7 Construction Details: Penetrations



NOTE: USE TAPERED ROOF INSULATION (EDGE STRIPS) TO CREATE DRAIN SUMP. IF TOTAL INSULATION THICKNESS IS LESS THAN OR EQUAL TO 1 1/2 IN., TAPER 12 IN. FROM THE DRAIN CENTER. IF TOTAL INSULATION THICKNESS IS GREATER THAN 1 1/2 IN., TAPER 18 IN. FROM DRAIN CENTER.



GENERAL REFERENCE:

"FTR GS 02/13"

APPLICABLE SYSTEMS:

"FTR MA 02/13"

"FTR AD 02/13"

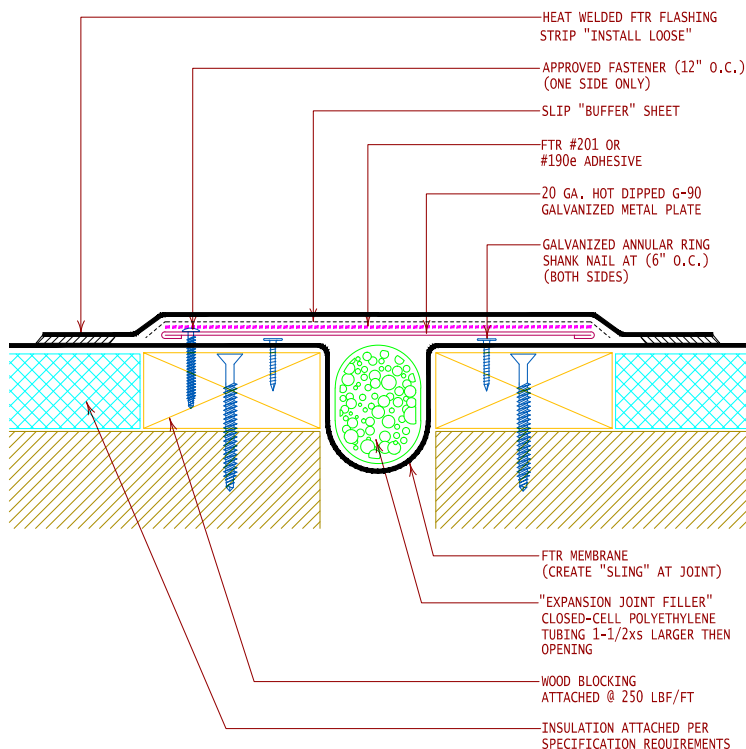
"FTR BA 02/13"

## TYPICAL DRAIN FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DD3



# 4.8 Construction Details: Expansion Joints/Tie Ins **Notebook**

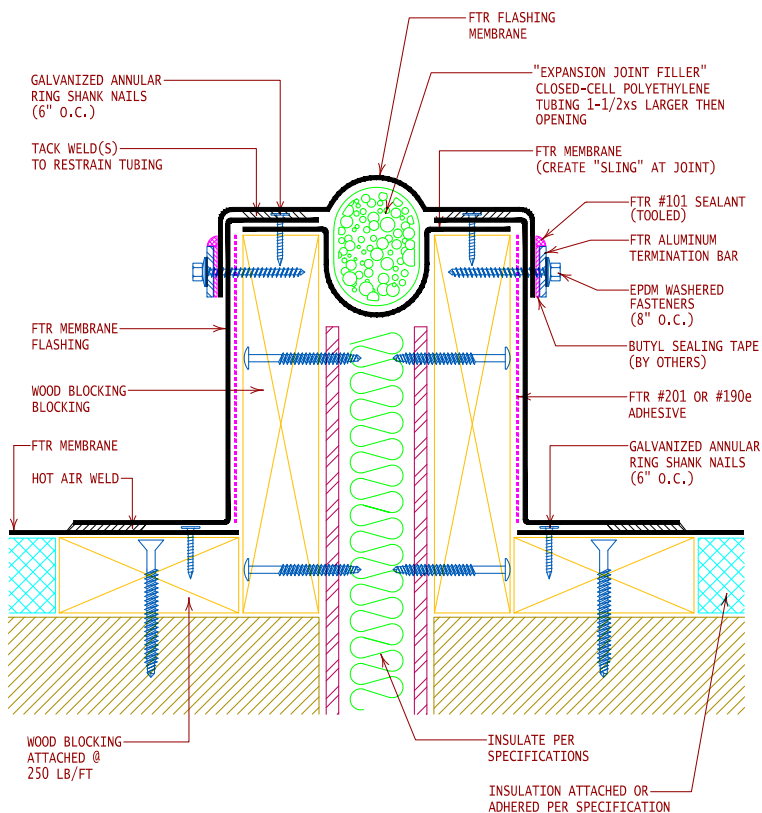


GENERAL REFERENCE:  
**"FTR GS 02/13"**  
 APPLICABLE SYSTEMS:  
**"FTR MA 02/13"**  
**"FTR AD 02/13"**  
**"FTR BA 02/13"**

## "LOW PROFILE" EXPANSION JOINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DX1

# 4.8 Construction Details: Expansion Joints/Tie Ins

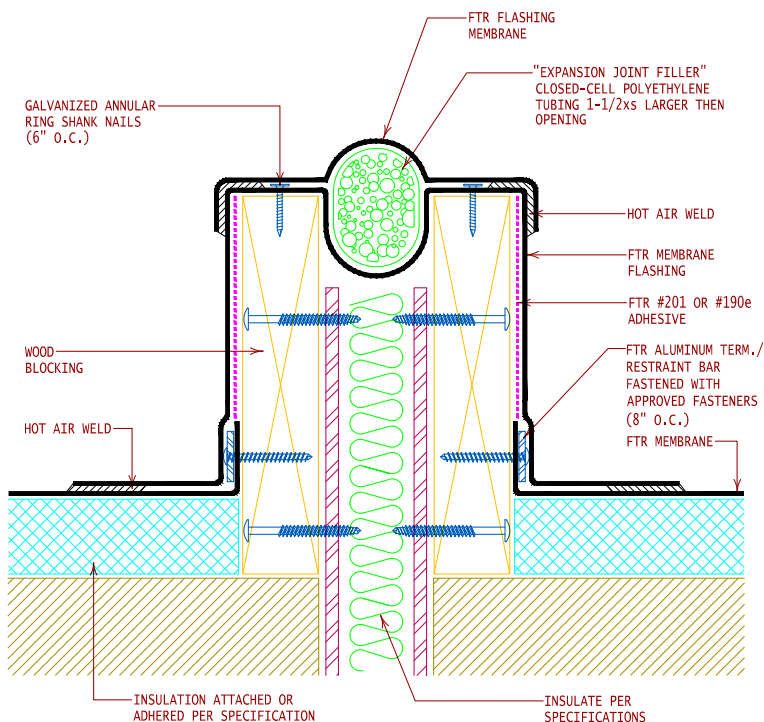


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## RAISED EXPANSION JOINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DX2

# 4.8 Construction Details: Expansion Joints/Tie Ins

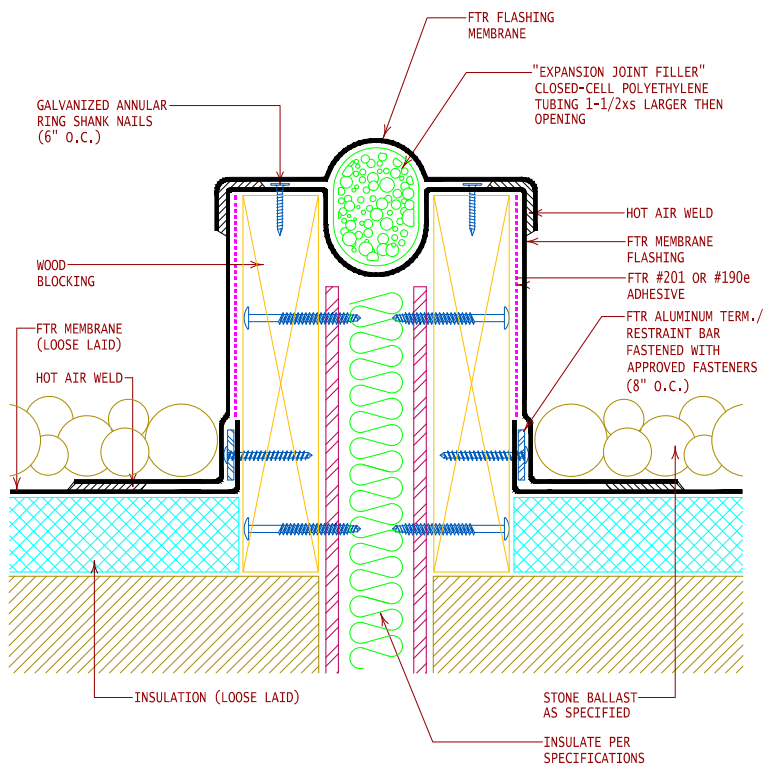


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"

## RAISED EXPANSION JOINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DX2a

# 4.8 Construction Details: Expansion Joints/Tie Ins

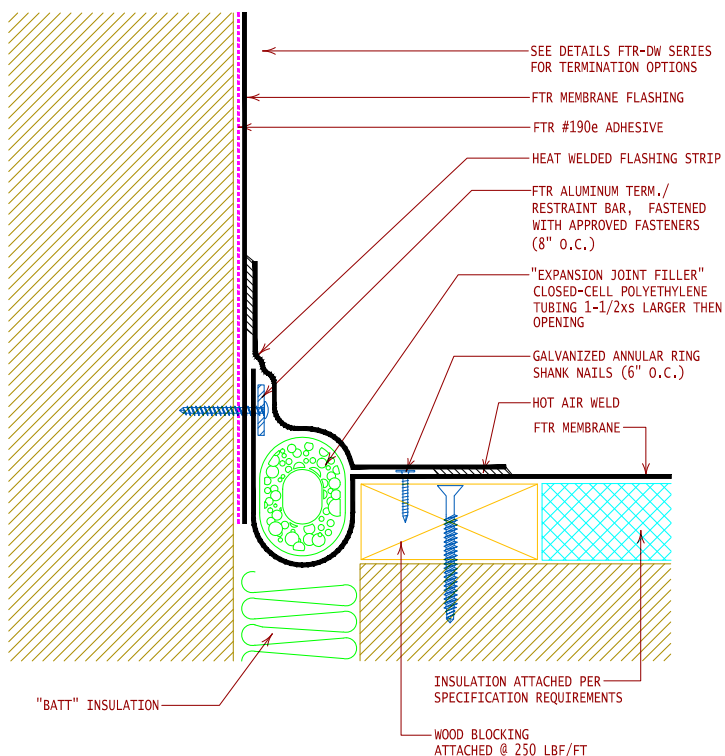


GENERAL REFERENCE:  
"FTR GS06"  
APPLICABLE SYSTEMS:  
"FTR BA06"

## RAISED EXPANSION JOINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	03-01-07	FTR-DX2b

# 4.8 Construction Details: Expansion Joints/Tie Ins

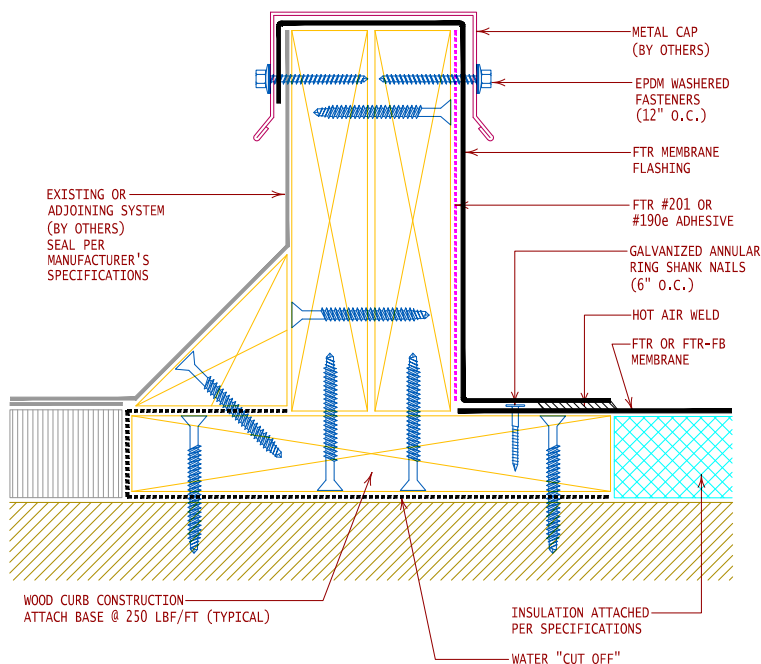


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## HORIZONTAL TO VERTICAL EXPANSION JOINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DX3

# 4.8 Construction Details: Expansion Joints/Tie Ins

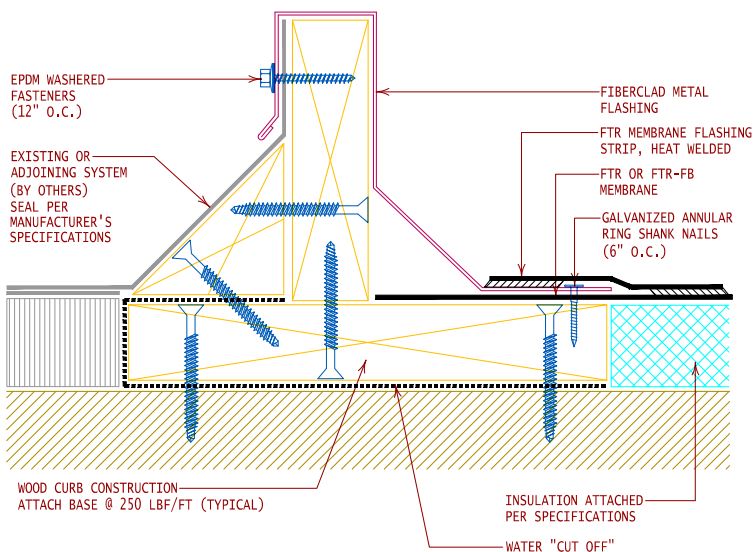


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

FLASHING "TIE IN" TO  
EXISTING ROOF SYSTEM(S)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DT1

# 4.8 Construction Details: Expansion Joints/Tie Ins

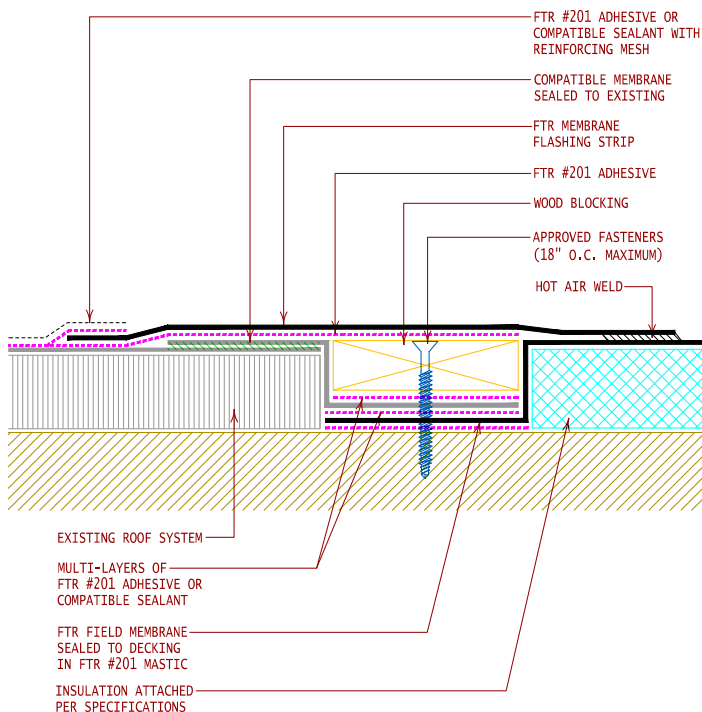


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## FiberClad METAL FLASHING "TIE IN" TO EXISTING ROOF SYSTEM(S)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DT2

# 4.8 Construction Details: Expansion Joints/Tie Ins



**GENERAL REFERENCE:**

**APPLICABLE SYSTEMS:**

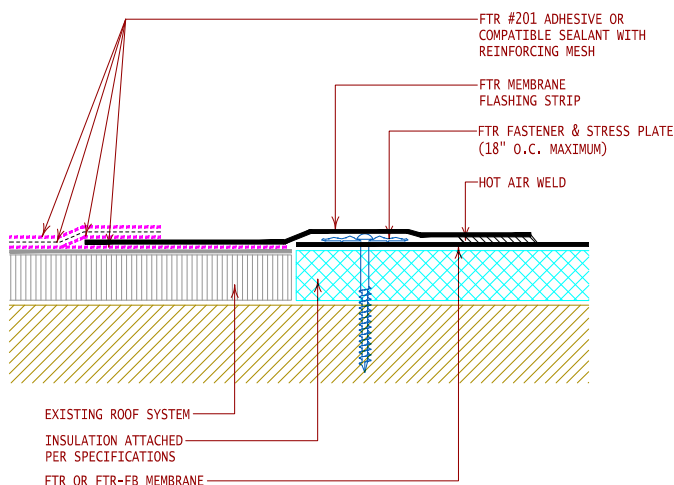
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

TEMPORARY (1 to 2 YEARS)  
"TIE IN" TO EXISTING ROOF SYSTEM

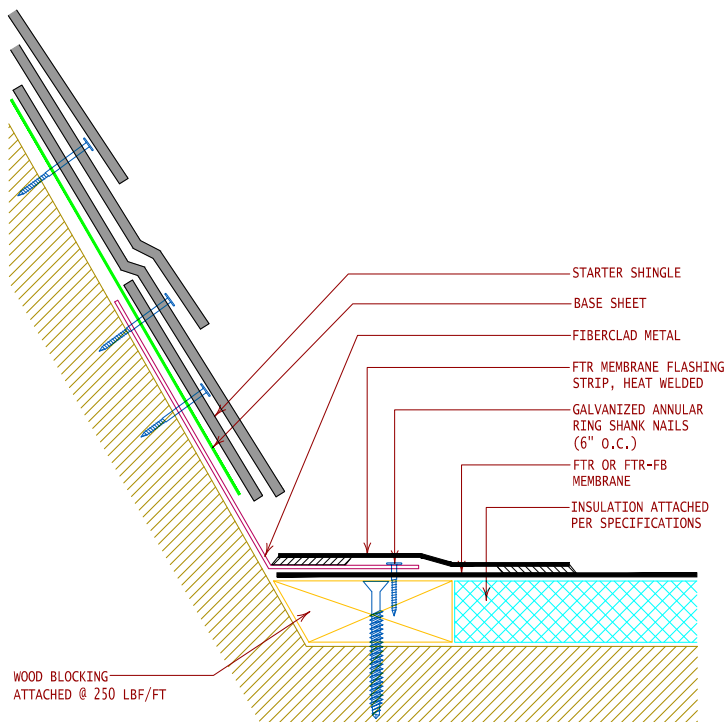
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DT3



# 4.8 Construction Details: Expansion Joints/Tie Ins



# 4.8 Construction Details: Expansion Joints/Tie Ins

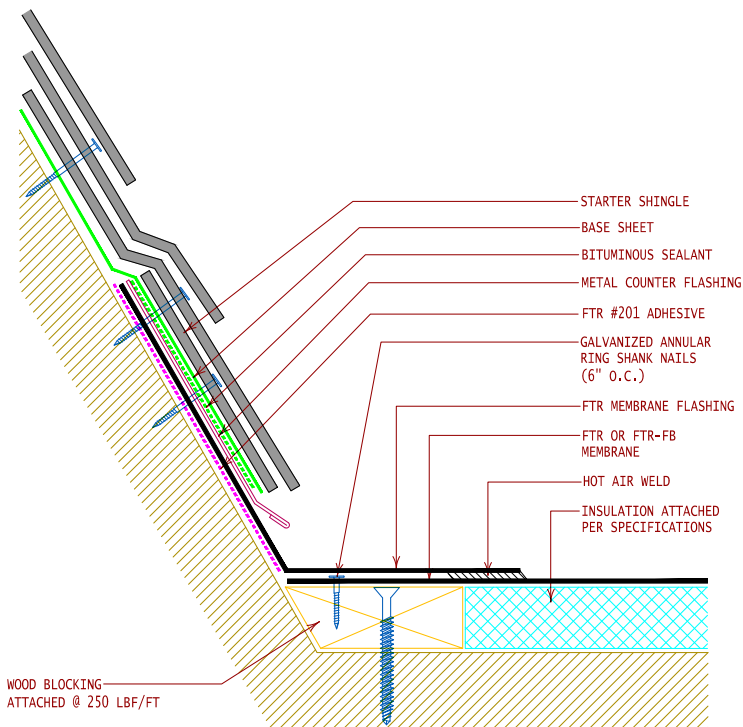


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

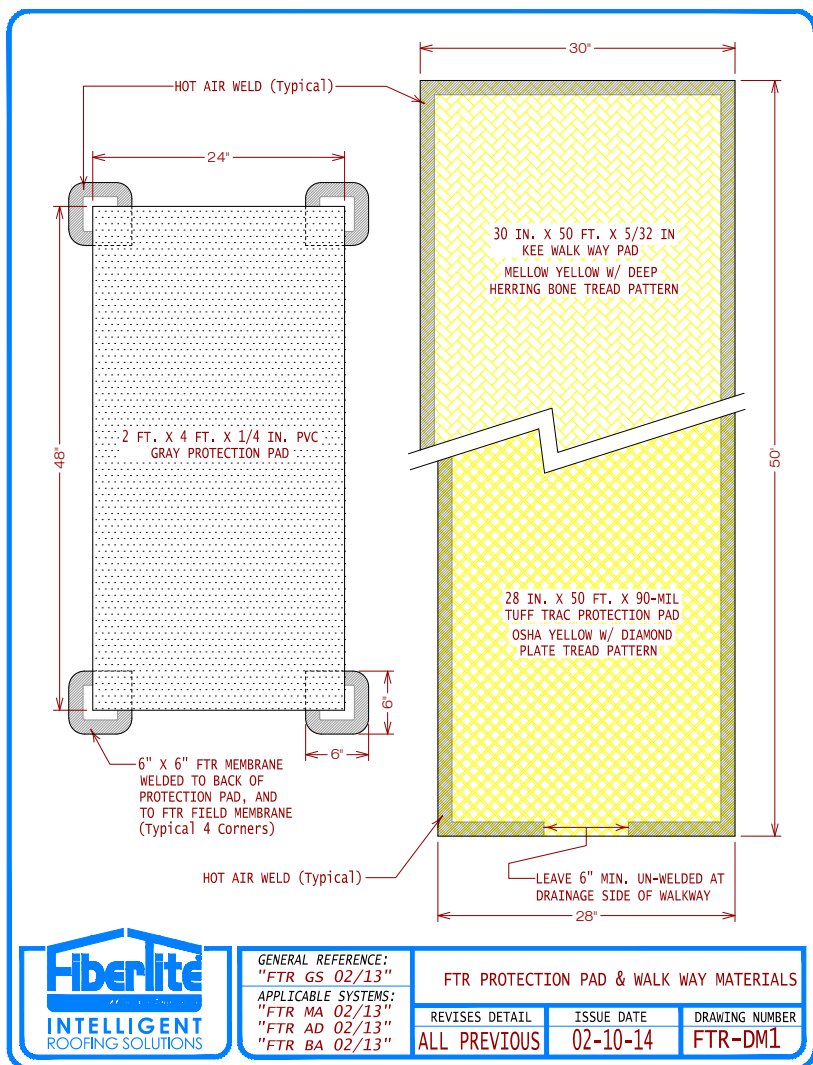
## FIBERCLAD METAL FLASHING "TIE IN" TO SHINGLE ROOF SYSTEM

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DT5

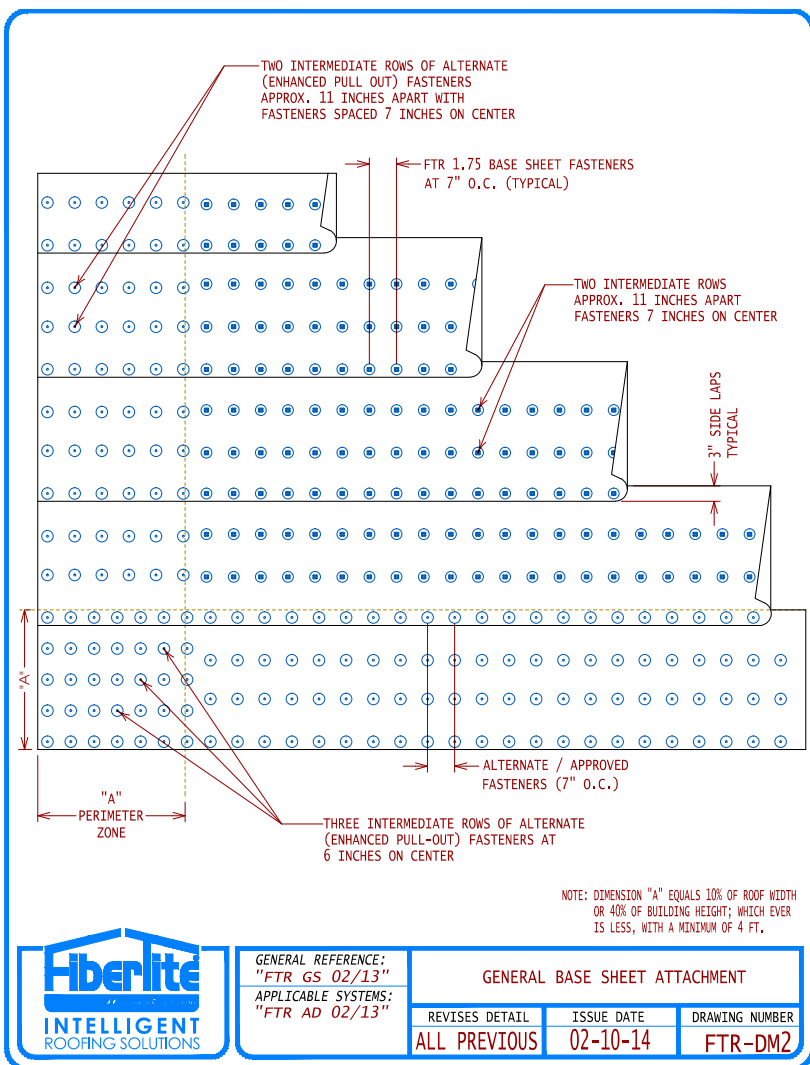
# 4.8 Construction Details: Expansion Joints/Tie Ins



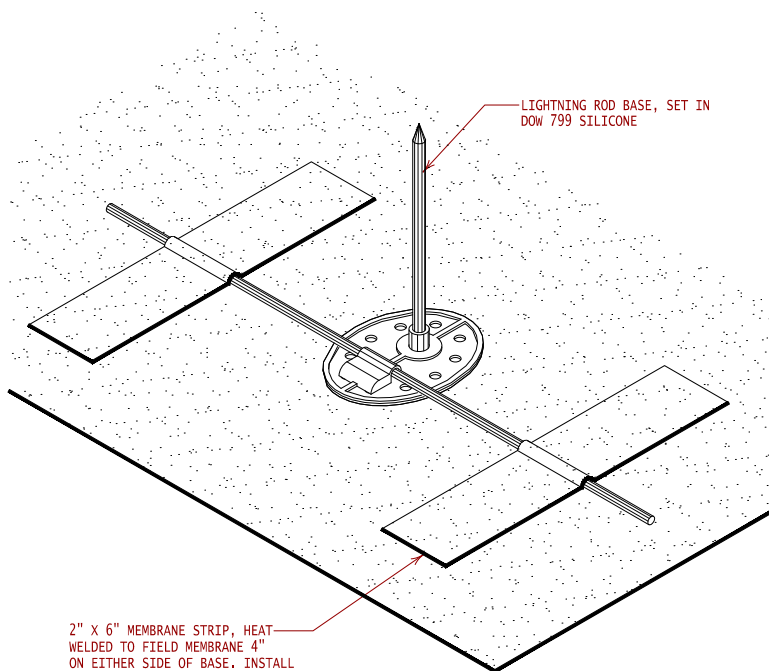
# 4.9 Construction Details: Miscellaneous



# 4.9 Construction Details: Miscellaneous



# 4.9 Construction Details: Miscellaneous



LIGHTNING ROD BASE, SET IN  
DOW 799 SILICONE

2" X 6" MEMBRANE STRIP, HEAT  
WELDED TO FIELD MEMBRANE 4"  
ON EITHER SIDE OF BASE. INSTALL  
ADDITIONAL MEMBRANE STRIPS AT  
48" O.C. TO NEXT TERMINAL.




GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MA 02/13"  
"FTR AD 02/13"  
"FTR BA 02/13"

## LIGHTNING PROTECTION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DM3

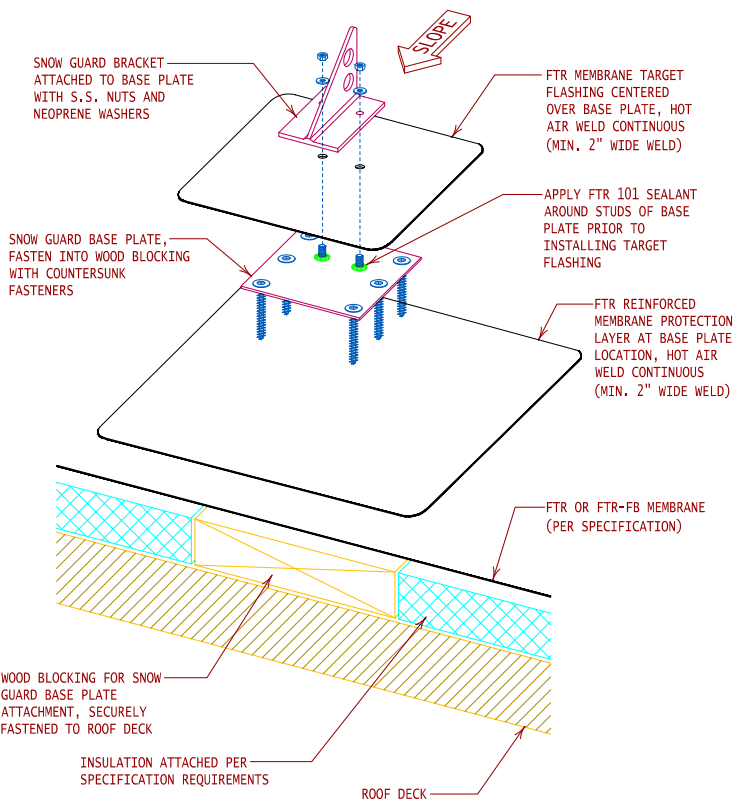
# 4.9 Construction Details: Miscellaneous



**Fiberlite**  
INTELLIGENT  
ROOFING SOLUTIONS

<b>GENERAL REFERENCE:</b> "FTR GS 02/13"	<b>TYPICAL COVERS AT MEMBRANE T-LAPS</b>		
<b>APPLICABLE SYSTEMS:</b> "FTR MA 02/13" "FTR AD 02/13" "FTR BA 02/13"	<b>REVISES DETAIL</b> ALL PREVIOUS	<b>ISSUE DATE</b> 02-10-14	<b>DRAWING NUMBER</b> FTR-TLAP

# 4.9 Construction Details: Miscellaneous



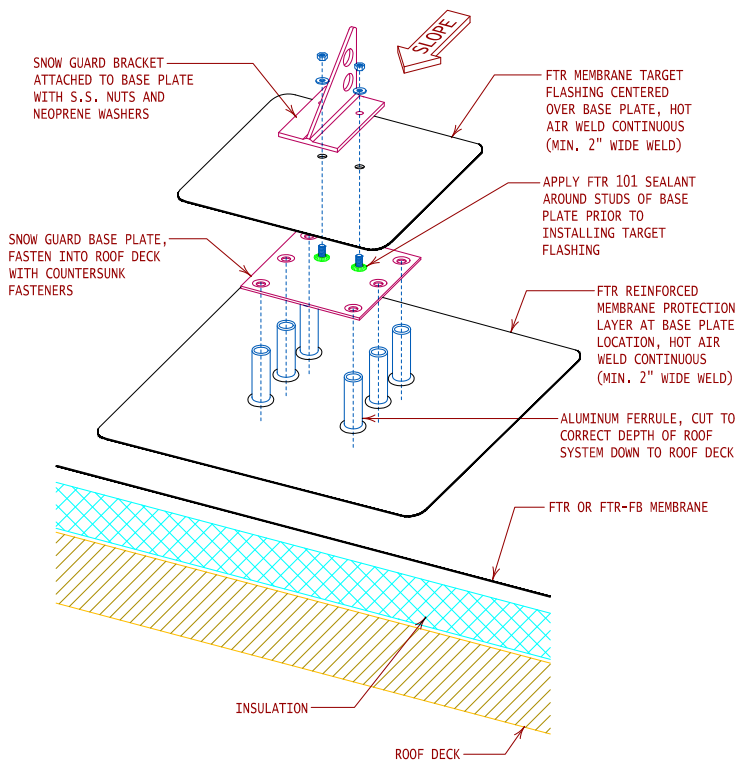
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"  
"FTR SMRP 02/13"

## SNOW GUARD "NEW CONSTRUCTION"

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-SGNC



# 4.9 Construction Details: Miscellaneous

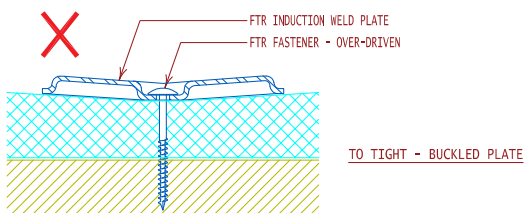
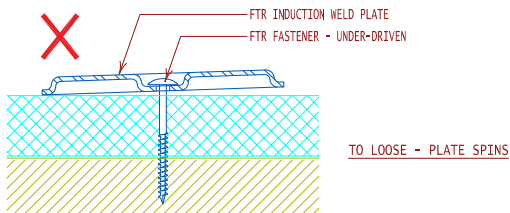
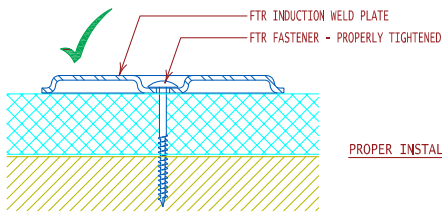


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR AD 02/13"  
"FTR SMRP 02/13"

## SNOW GUARD "RETROFIT"

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-SGRF

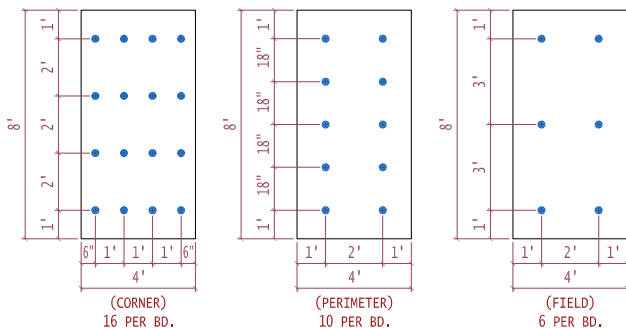
# 4.10 Construction Details: FiberTite® Induction Weld



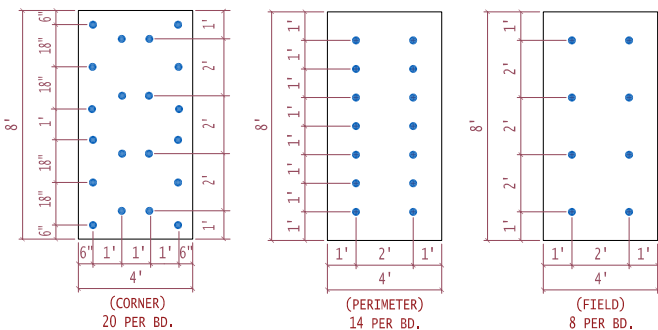
**NOTE:**

SPECIAL CARE SHALL BE TAKEN WHEN FASTENING PLATES INTO THE STRUCTURAL DECK. OVER-DRIVING THE FASTENER WILL RESULT IN BUCKLING OR "CUPPING" OF THE PLATE AND WILL RESULT IN AN UNEVEN OR INADEQUATE BOND TO THE MEMBRANE. UNDER-DRIVING THE FASTENER WILL RESULT IN A LOOSE PLATE WITH INSUFFICIENT CLAMPING FORCE AND PROTRUDING FASTENER HEAD THAT MAY CAUSE DAMAGE TO THE MEMBRANE DURING WELDING OR NORMAL ROOF TRAFFIC.

# 4.10 Construction Details: FiberTite® Induction Weld Notebook



**2' X 3' INDUCTION WELD FASTENING PATTERN : FIELD, PERIMETER & CORNER ATTACHMENT  
CLASS 1-90 RATING**



**2' X 2' INDUCTION WELD FASTENING PATTERN : FIELD, PERIMETER & CORNER ATTACHMENT  
CLASS 1-135 RATING**

**NOTE:**

REFER TO DETAIL FTR-RBS1 FOR PROPER PLATE SECUREMENT TO ENSURE MAXIMUM MEMBRANE TO PLATE BONDING. WHEN INSTALLING MULTIPLE LAYERS OF INSULATION, ALL END JOINTS SHALL BE STAGGERED.

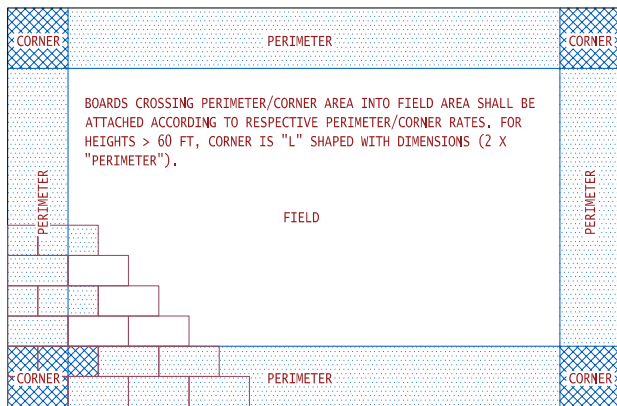


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR IW 07/15"

INDUCTION WELD ATTACHMENT METHODS  
(CLASS RATING 1-90 & 1-135)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	07-17-15	FTR-IWIA1

# 4.10 Construction Details: FiberTite® Induction Weld Notebook



PERIMETER AND CORNER WIDTH DIMENSIONS ARE DETERMINED BASED ON THE LESSER PRODUCT DERIVED BY MULTIPLYING THE BUILDING HEIGHT BY .4 (40%) OR THE LESSER BUILDING DIMENSION BY .1 (10%).

FTR APPROVED INSULATION INSTALLED IN THE FIELD OF THE ROOF IS SECURED IN ACCORDANCE WITH THE APPLICABLE CODE RATING REQUIREMENTS AND ENHANCED IN THE PERIMETER AND CORNER AREAS OF THE ROOF BY THE FOLLOWING FACTORS:  
PERIMETER - 50% INCREASE OVER THE FIELD SECUREMENT RATE  
CORNER - 100% INCREASE OVER THE FIELD SECUREMENT RATE

## NOTE:

REFER TO DETAIL FTR-IWIA1 FOR TYPICAL INDUCTION WELD ATTACHMENT METHODS. WHEN INSTALLING MULTIPLE LAYERS OF INSULATION, ALL END JOINTS SHALL BE STAGGERED.

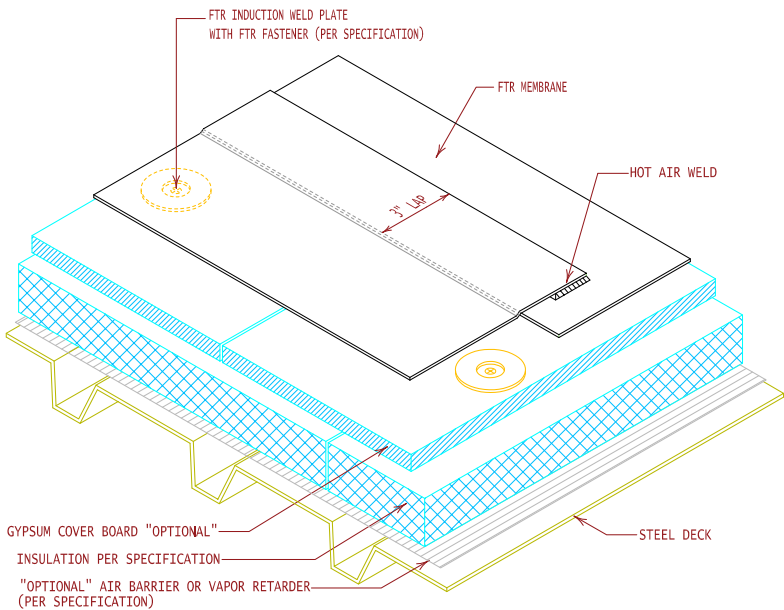
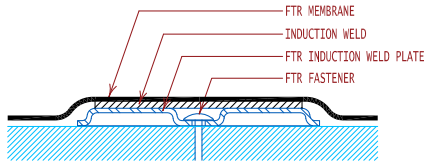


GENERAL REFERENCE:  
 "FTR GS 02/13"  
 APPLICABLE SYSTEMS:  
 "FTR IW 07/15"

## INDUCTION WELD FIELD, PERIMETER & CORNER ATTACHMENT DESIGNATIONS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	07-17-15	FTR-IWIA2

# 4.10 Construction Details: FiberTite® Induction Weld



## NOTE:

REFER TO DETAIL FTR-RBS1 FOR PROPER PLATE SECUREMENT TO ENSURE MAXIMUM MEMBRANE TO PLATE BONDING. WHEN INSTALLING MULTIPLE LAYERS OF INSULATION, ALL END JOINTS SHALL BE STAGGERED.



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR IW 07/15"

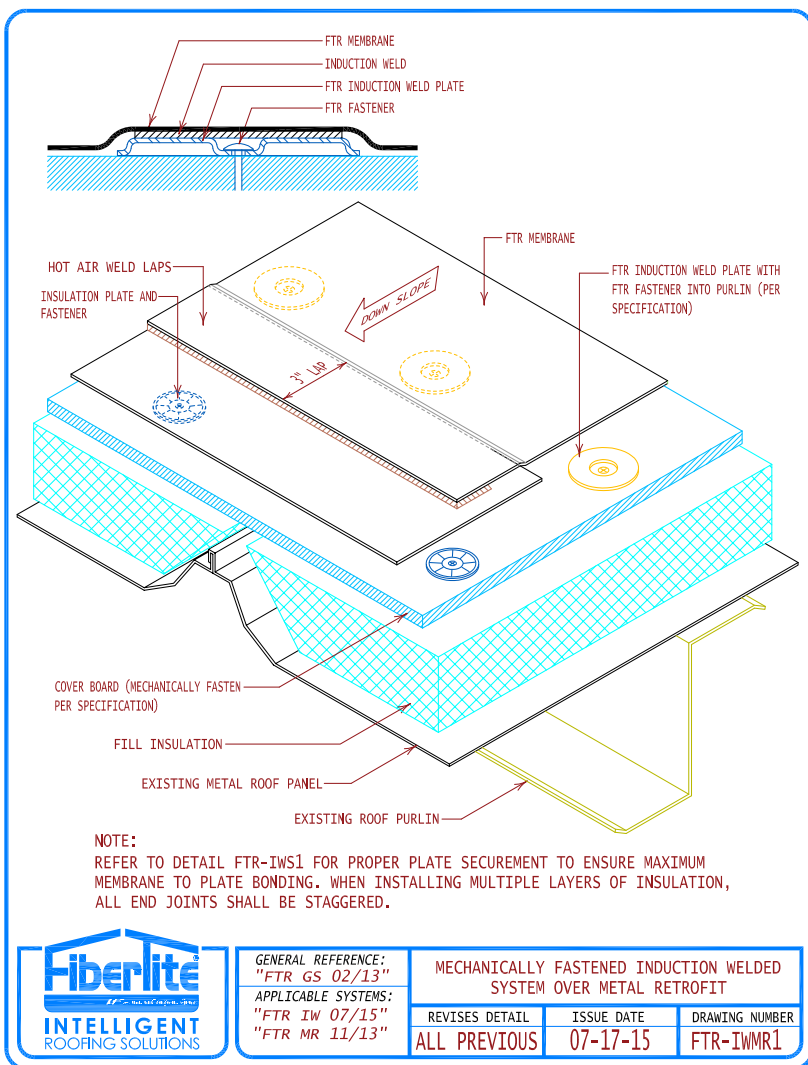
## COMPOSITE ROOF SYSTEM CROSS SECTION (INDUCTION WELDED SYSTEM)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	07-17-15	FTR-IWMF1

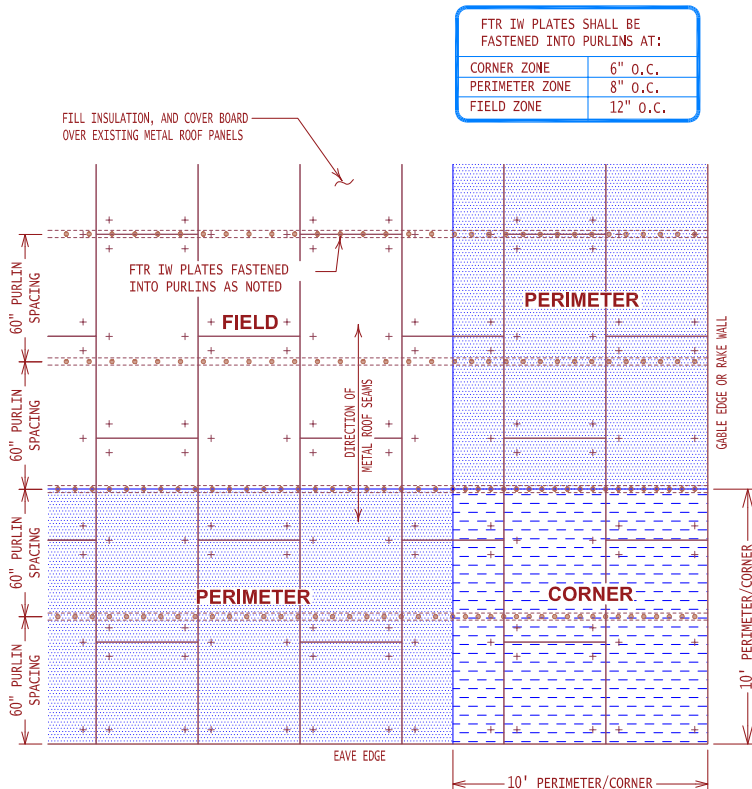
# 4.10 Construction Details: FiberTite® Induction Weld



Notebook



# 4.10 Construction Details: FiberTite® Induction Weld Notebook



## NOTE:

REFER TO DETAILS FTR-IWMR1 & FTR-MR2 FOR INSULATION LAYOUT AND ATTACHMENT OVER EXISTING METAL ROOF PANELS.

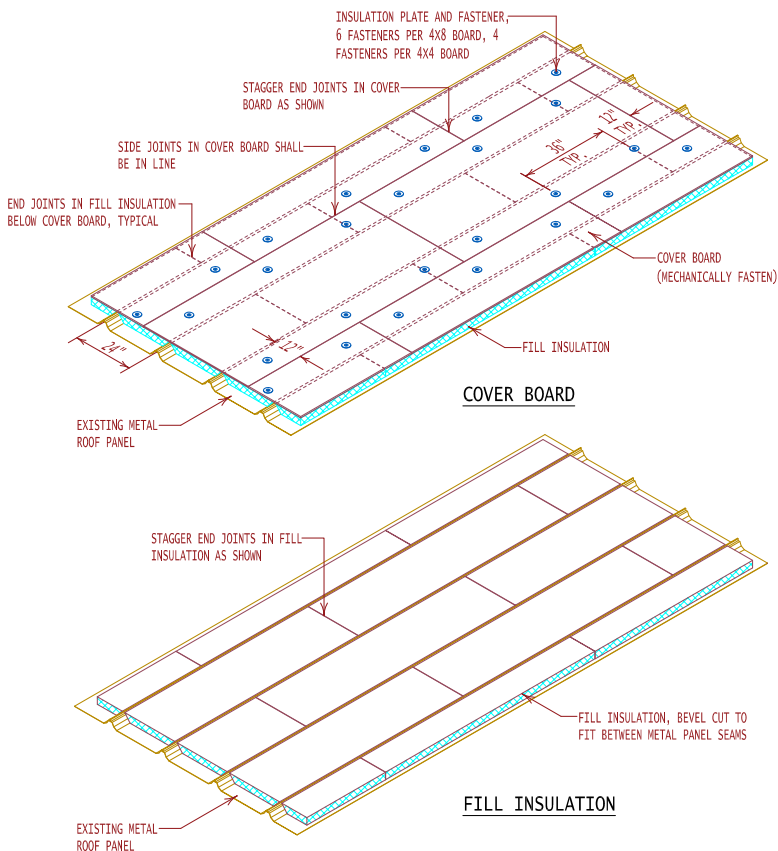


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR IW 07/15"  
"FTR MR 11/13"

## INDUCTION WELD (IW) PLATE ATTACHMENT LAYOUT ON METAL RETROFIT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	07-17-15	FTR-IWMR3

# 4.10 Construction Details: FiberTite® Induction Weld Notebook



GENERAL REFERENCE:  
"FTR GS 02/13"

APPLICABLE SYSTEMS:  
"FTR IW 07/15"  
"FTR MR 11/13"

INSULATION ATTACHMENT FOR  
METAL RETROFIT

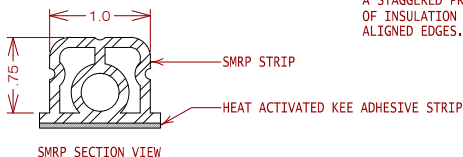
REVISES DETAIL  
ALL PREVIOUS

ISSUE DATE  
02-10-14

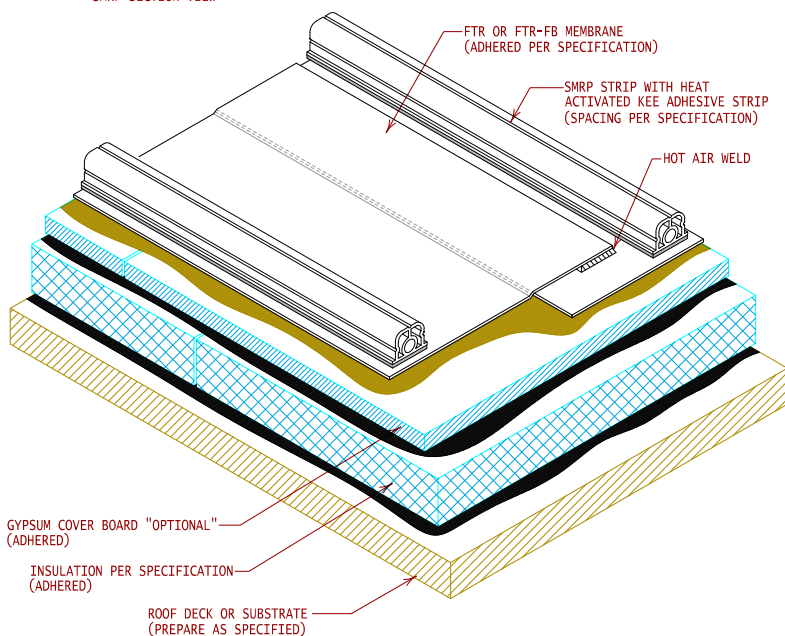
DRAWING NUMBER  
FTR-MR2



# 4.11 Construction Details: Simulated Metal Roofing



NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER OF INSULATION FROM BOTTOM LAYER TO PREVENT ALIGNED EDGES.

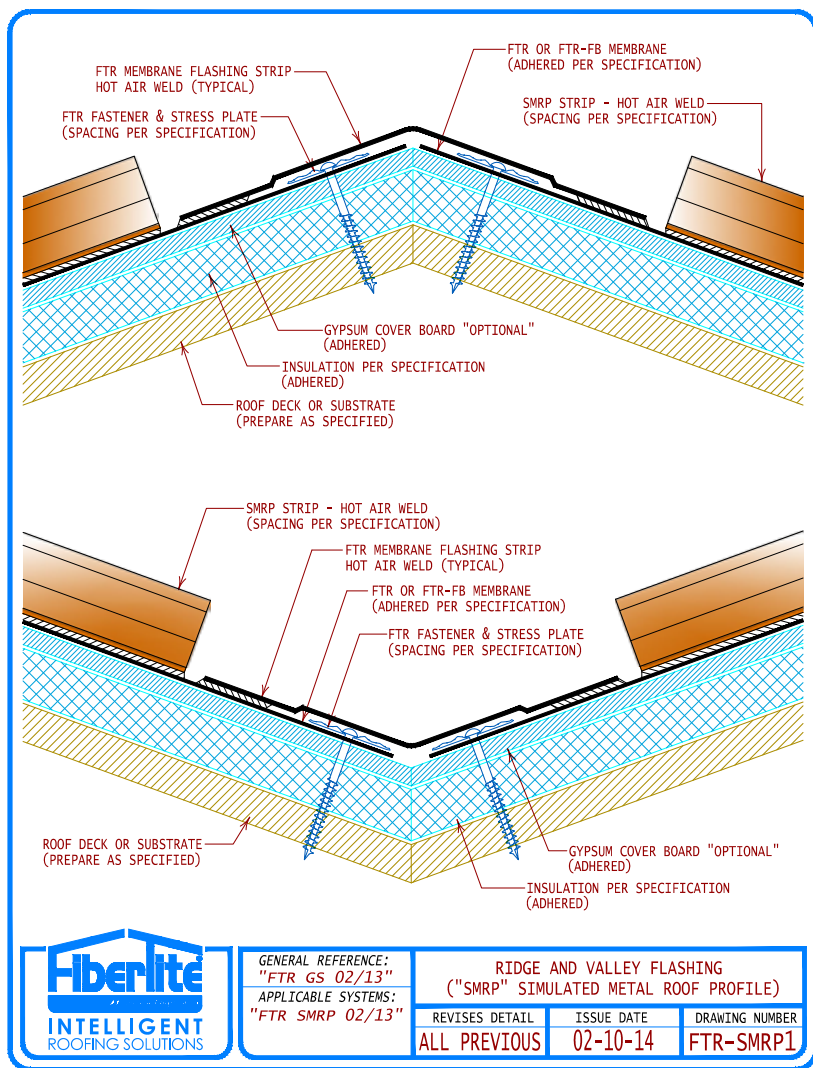


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR SMRP 02/13"

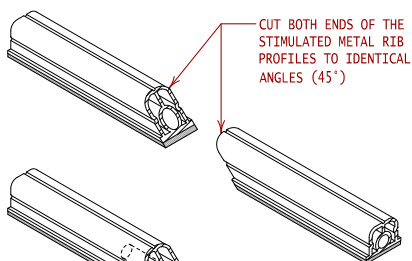
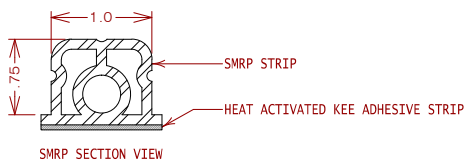
COMPOSITE ROOF SYSTEM CROSS SECTION ("SMRP" SIMULATED METAL ROOF PROFILE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-SMRP

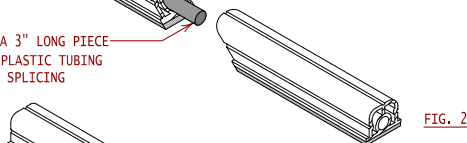
# 4.11 Construction Details: Simulated Metal Roofing



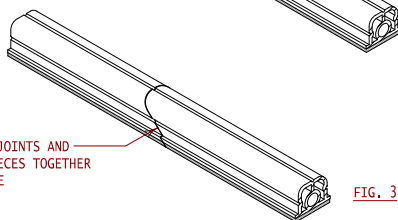
# 4.11 Construction Details: Simulated Metal Roofing



INSTALL A 3" LONG PIECE  
OF 3/8" PLASTIC TUBING  
PRIOR TO SPLICING



HEAT THE SPLICE JOINTS AND  
SLIDE THE TWO PIECES TOGETHER  
ON A FLAT SURFACE



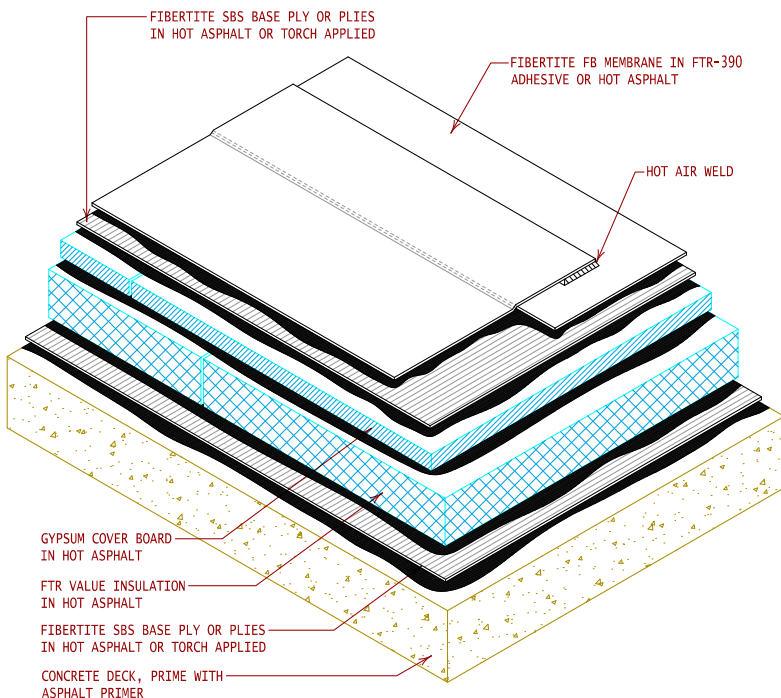
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR SMRP 02/13"

SIMULATED METAL RIB PROFILE SPLICE  
("SMRP" SIMULATED METAL RIB PROFILE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-SMRP2

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN A STAGGERED PROFILE, STAGGER AND OFFSET TOP LAYER OF INSULATION FROM BOTTOM LAYER TO PREVENT ALIGNED EDGES.



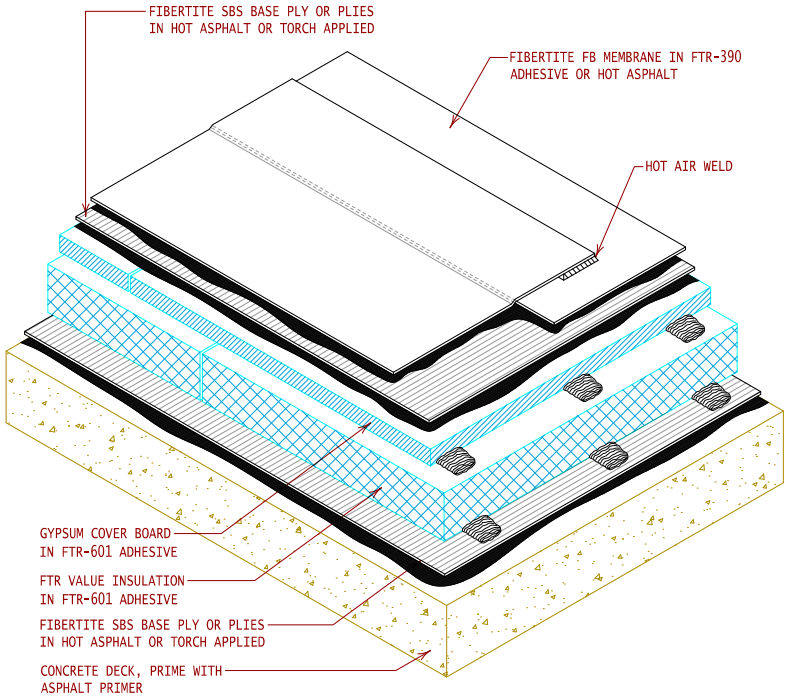
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED MEMBRANE & INSULATION IN ASPHALT)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DASIMP

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER OF INSULATION FROM BOTTOM LAYER TO PREVENT ALIGNED EDGES.



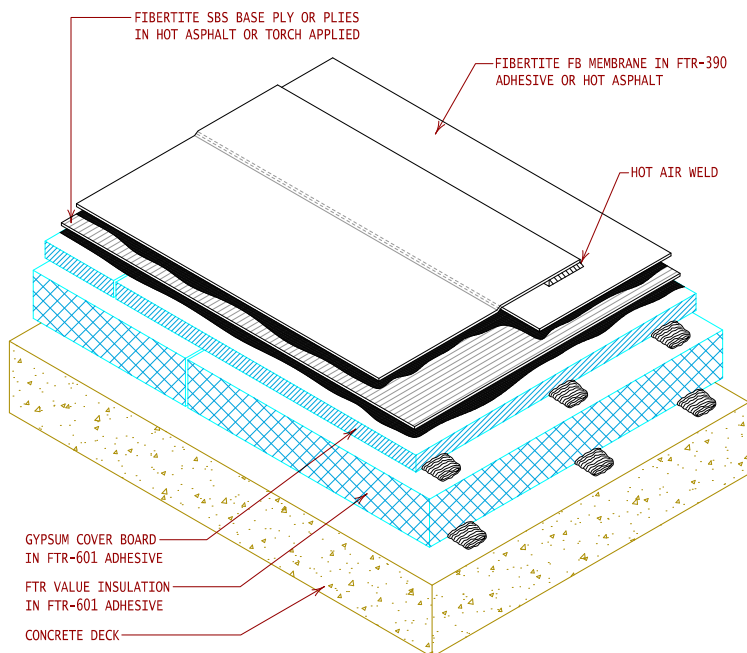
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS2MP

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER  
OF INSULATION FROM BOTTOM LAYER TO PREVENT  
ALIGNED EDGES.



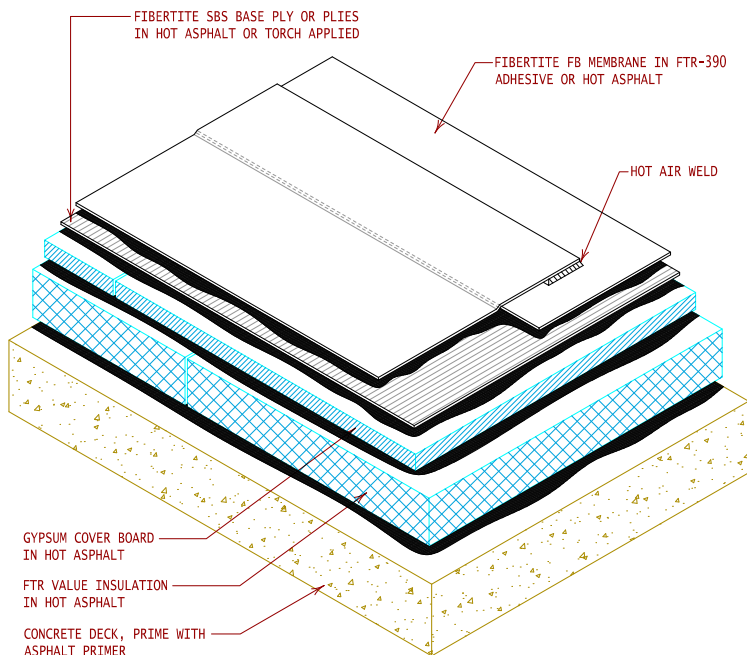
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS3MP

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER OF INSULATION FROM BOTTOM LAYER TO PREVENT ALIGNED EDGES.



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

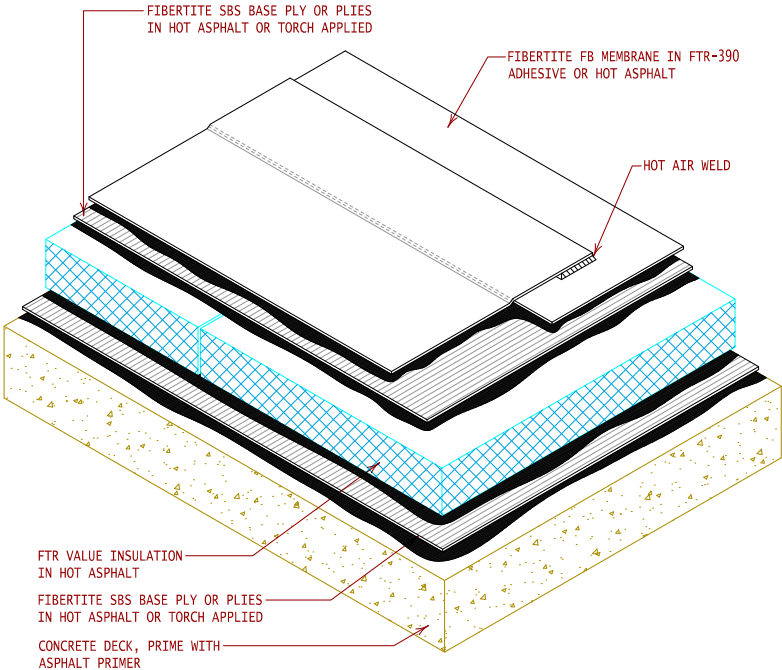
MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED MEMBRANE & INSULATION IN ASPHALT)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS4MP

# 4.12

## Construction Details: FiberTite® Hybrid™

NOTE:  
INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE.



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

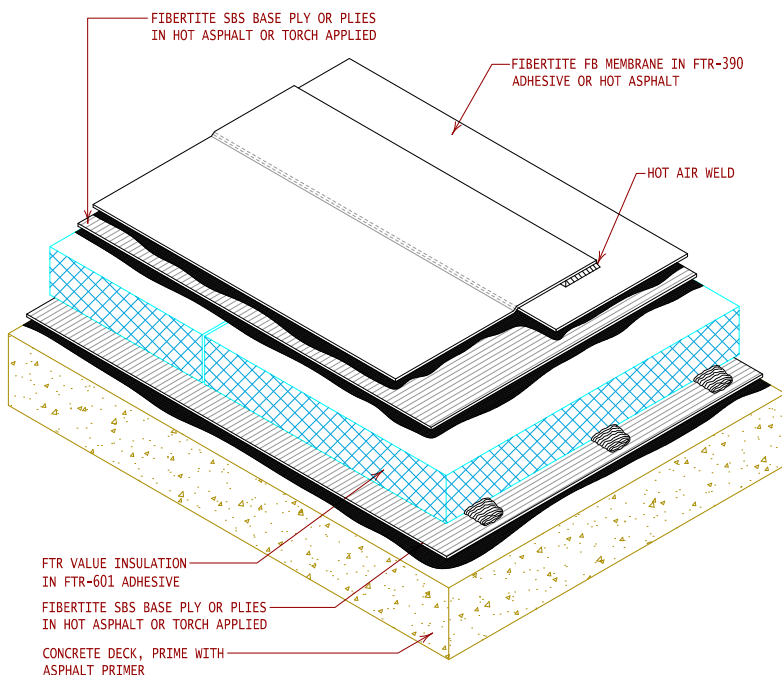
MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED MEMBRANE & INSULATION IN ASPHALT)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS5MP



# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE.



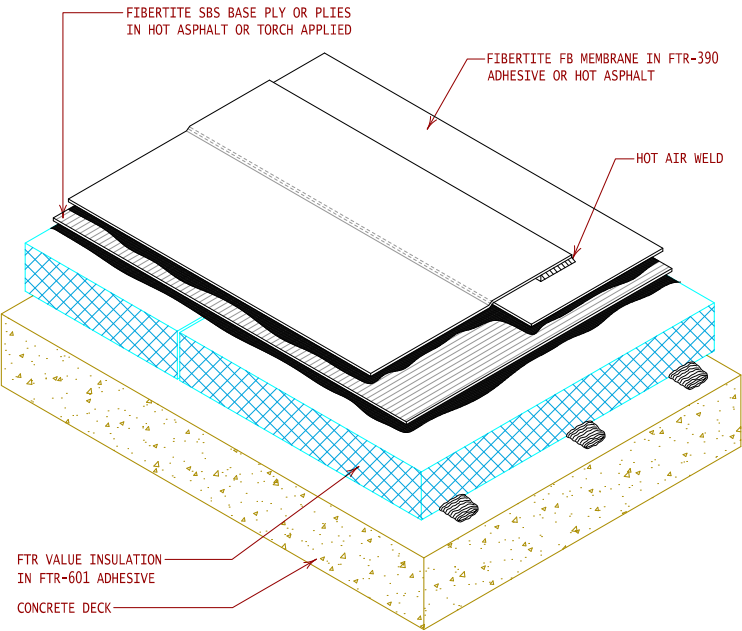
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS6MP

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE.



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

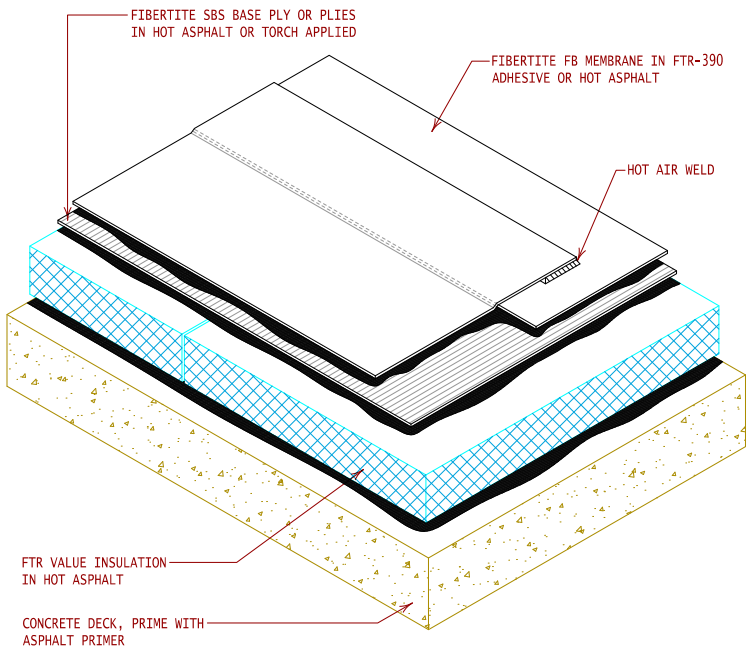
MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS7MP

# 4.12

## Construction Details: FiberTite® Hybrid™

NOTE:  
INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE.



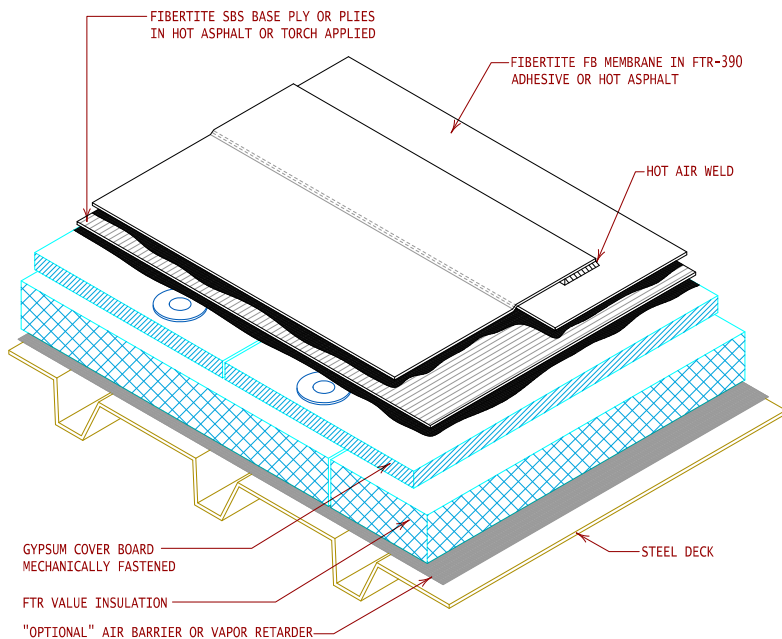
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(ADHERED MEMBRANE & INSULATION IN ASPHALT)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS8MP

# 4.12 Construction Details: FiberTite® Hybrid™

NOTE:  
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN  
A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER  
OF INSULATION FROM BOTTOM LAYER TO PREVENT  
ALIGNED EDGES.

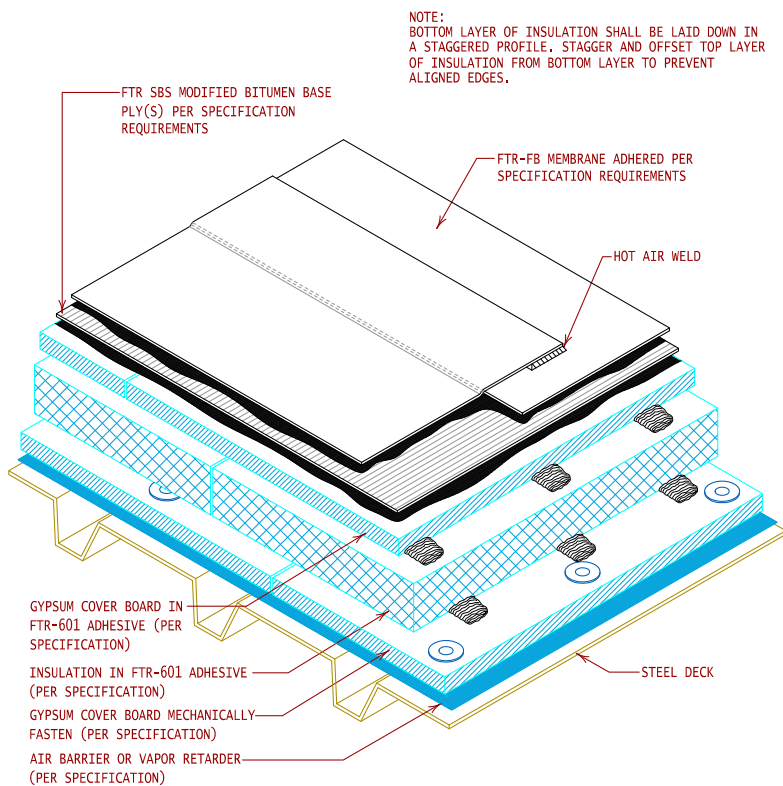


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(MECHANICALLY FASTENED INSULATION)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS9MP

# 4.12 Construction Details: FiberTite® Hybrid™

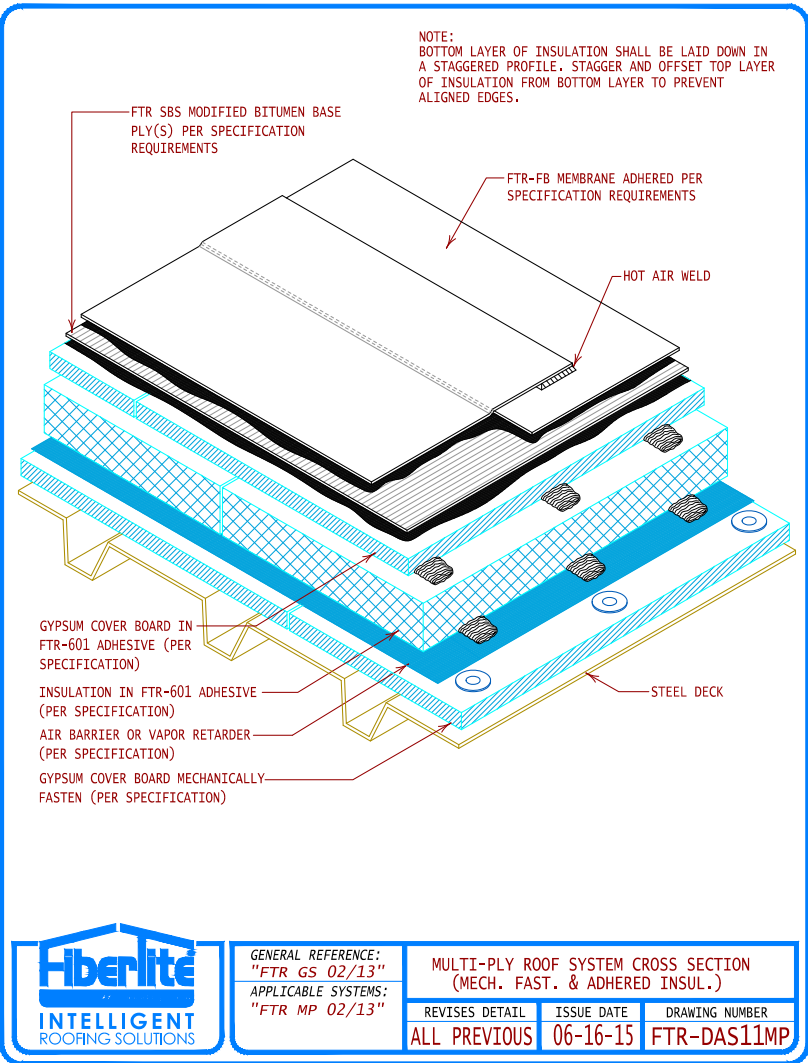


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

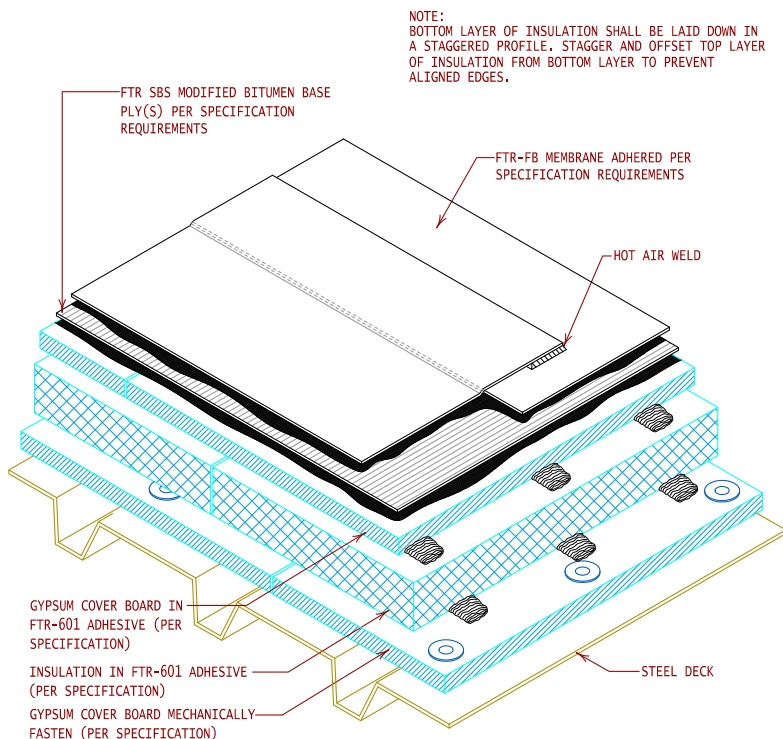
MULTI-PLY ROOF SYSTEM CROSS SECTION  
(MECH. FAST. COVER BOARD & ADHERED INSUL.)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS10MP

# 4.12 Construction Details: FiberTite® Hybrid™



# 4.12 Construction Details: FiberTite® Hybrid™

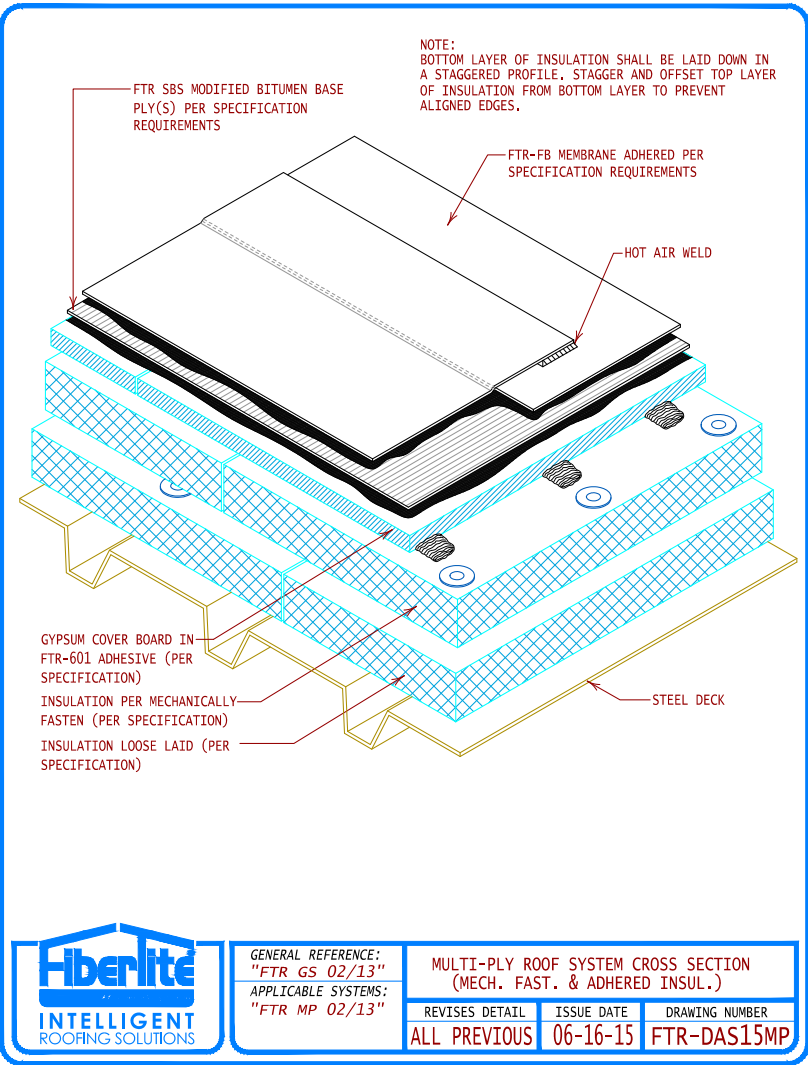


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

MULTI-PLY ROOF SYSTEM CROSS SECTION  
(MECH. FAST. COVER BOARD & ADHERED INSUL.)

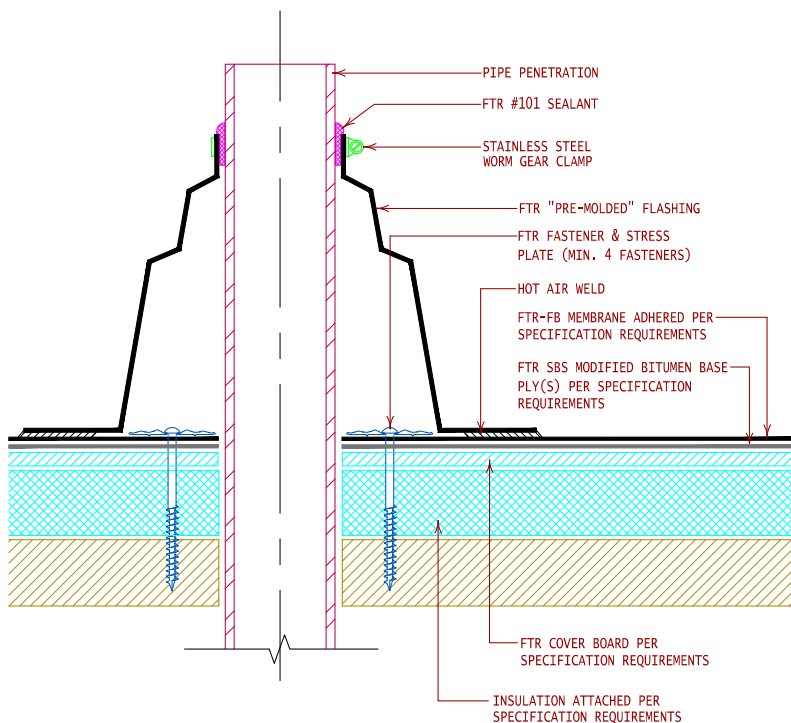
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DAS14MP

# 4.12 Construction Details: FiberTite® Hybrid™





# 4.12 Construction Details: FiberTite® Hybrid™



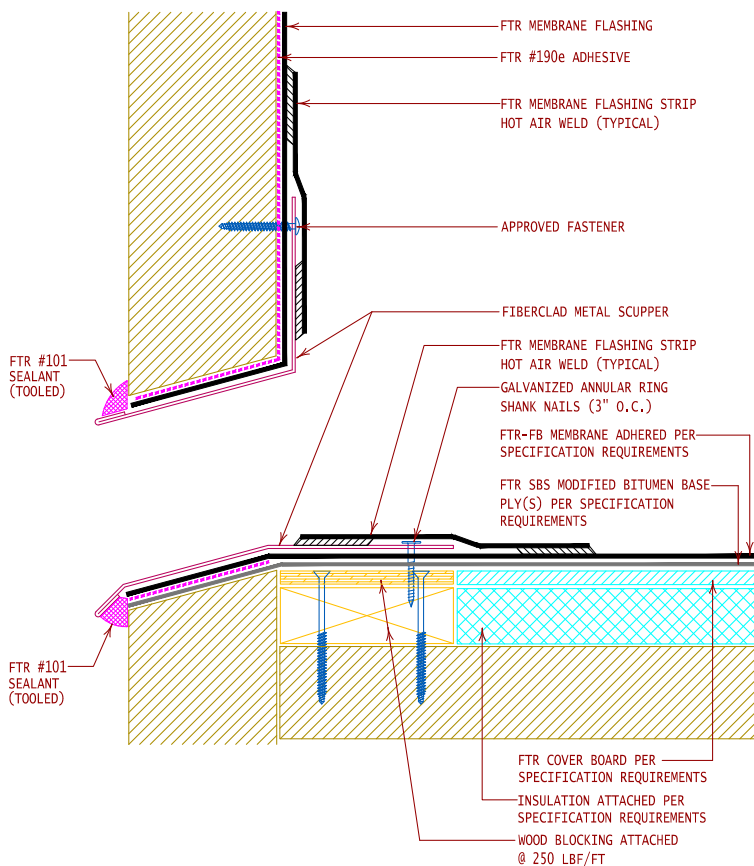
GENERAL REFERENCE:  
"FTR GS 02/13"

APPLICABLE SYSTEMS:  
"FTR MP 02/13"

## TYPICAL PRE-MOLDED MULTI-PLY PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DP3MP

# 4.12 Construction Details: FiberTite® Hybrid™

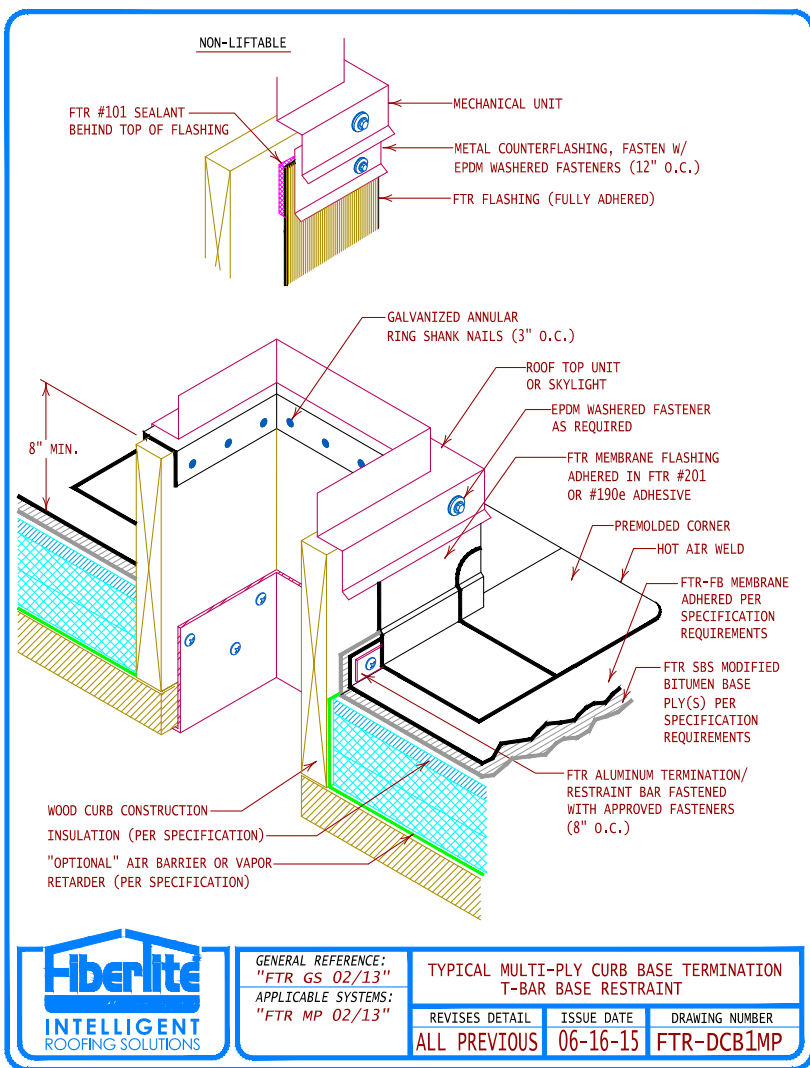


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

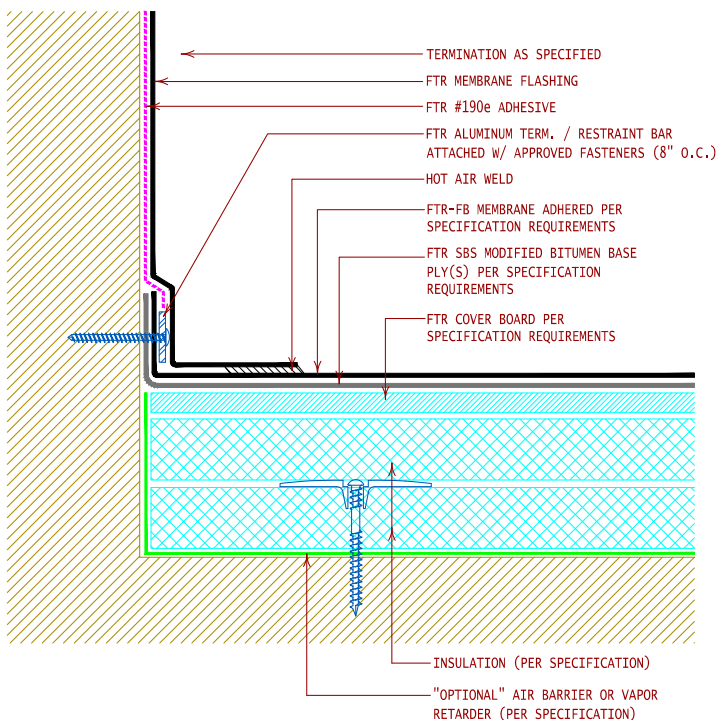
## TYPICAL MULTI-PLY SCUPPER FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DD2MP

# 4.12 Construction Details: FiberTite® Hybrid™



# 4.12 Construction Details: FiberTite® Hybrid™

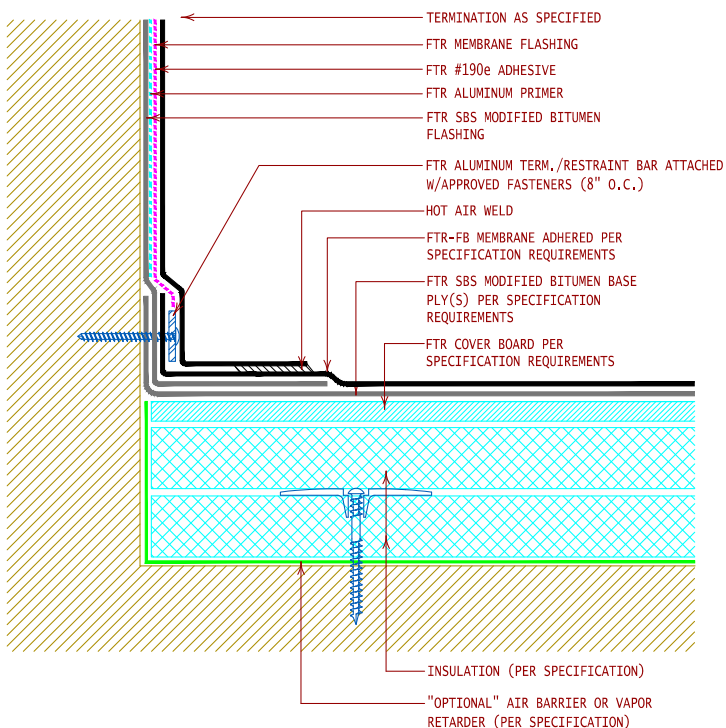


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

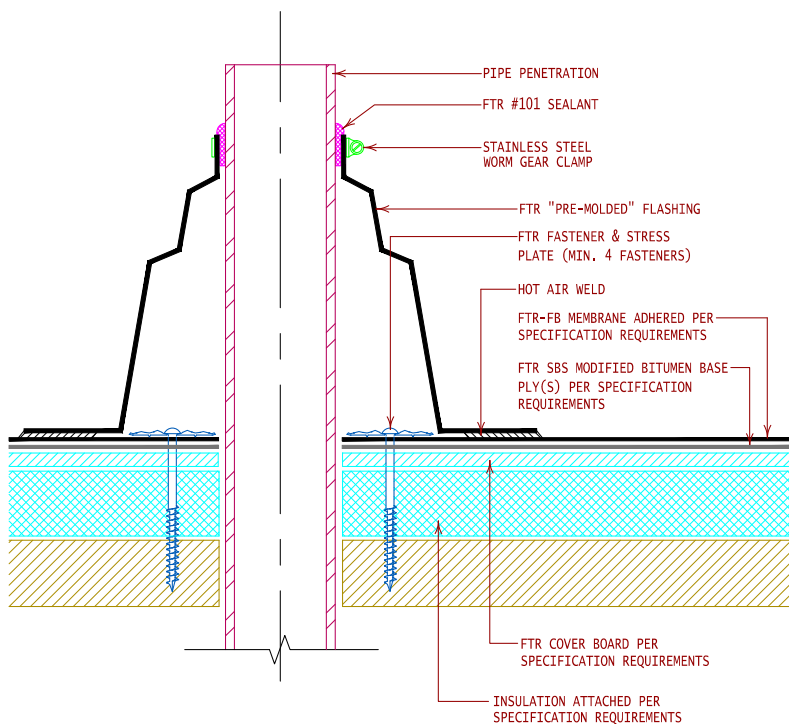
## TYPICAL MULTI-PLY WALL BASE TERMINATION T-BAR BASE RESTRAINT

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DWB1MP

# 4.12 Construction Details: FiberTite® Hybrid™



# 4.12 Construction Details: FiberTite® Hybrid™

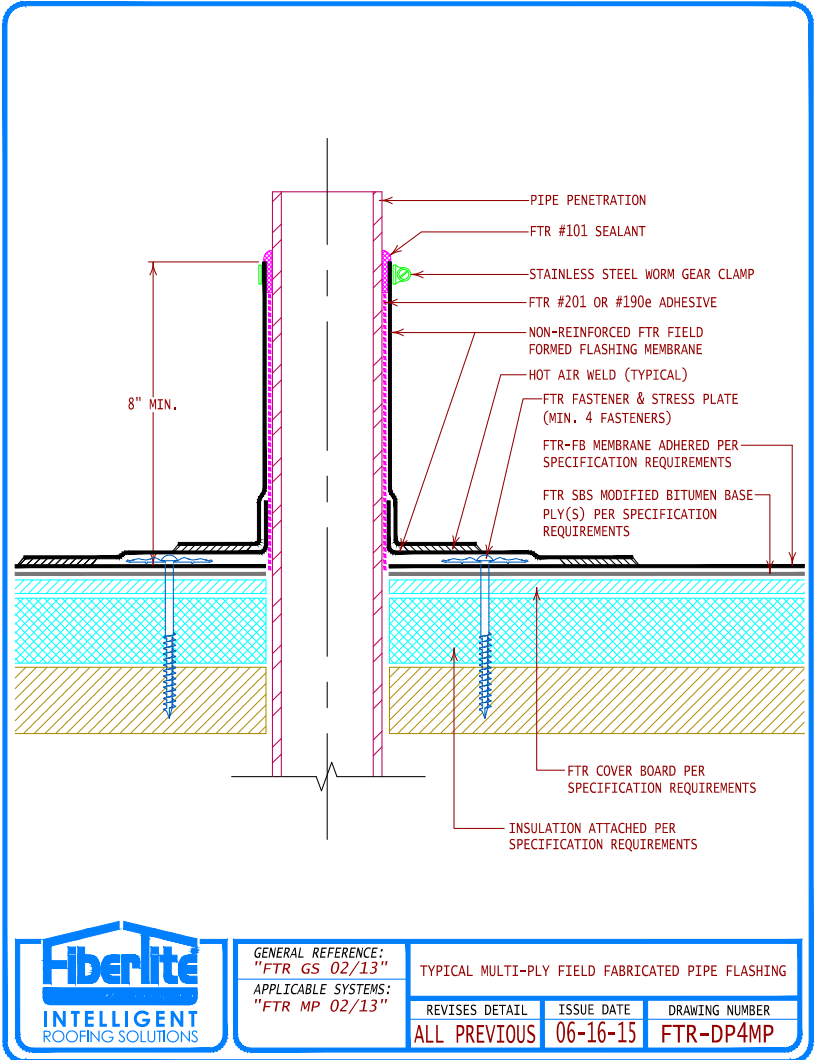


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR MP 02/13"

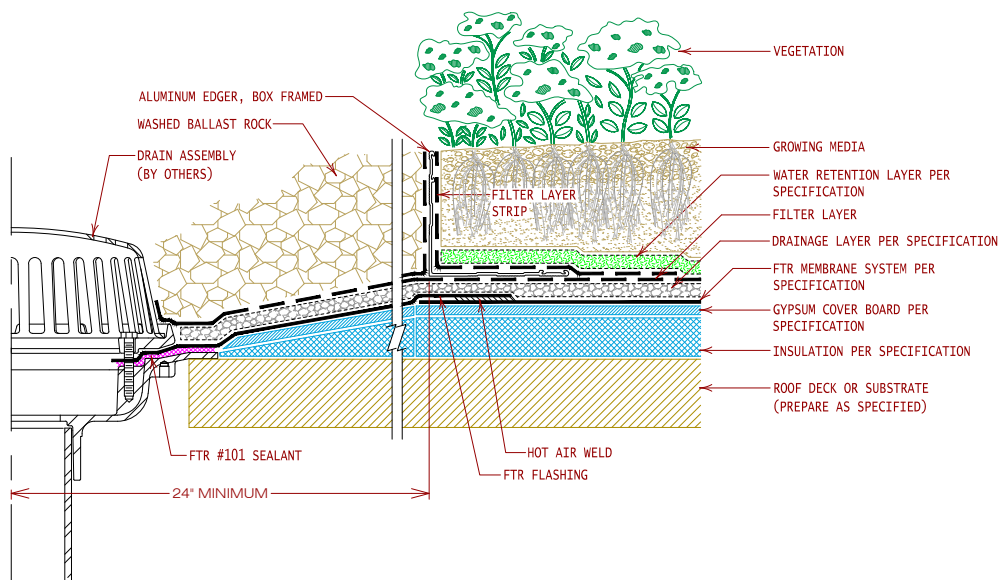
## TYPICAL PRE-MOLDED MULTI-PLY PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	06-16-15	FTR-DP3MP

# 4.12 Construction Details: FiberTite® Hybrid™



# 4.13 Construction Details: FiberTite® Green



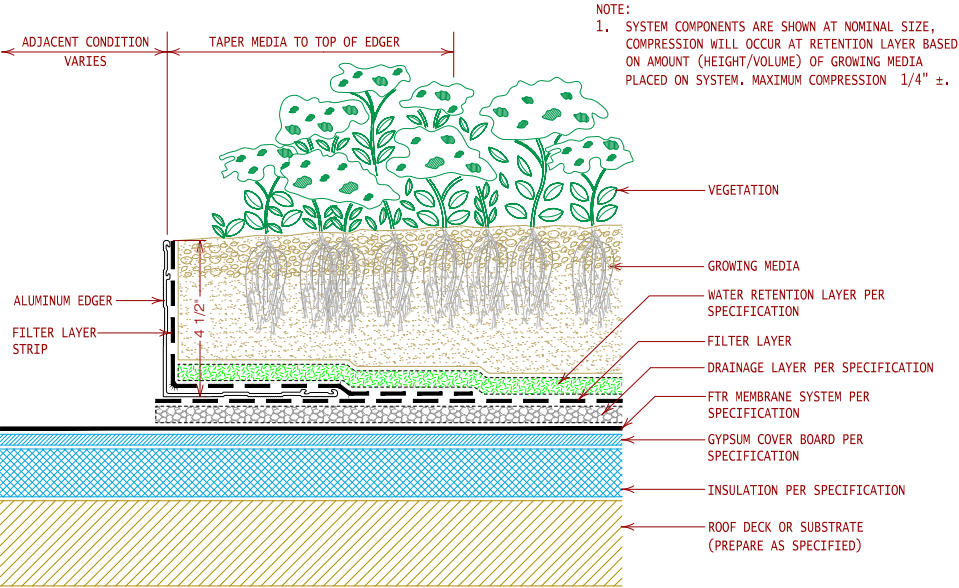
GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
BALLAST ROCK AT DRAIN WITH EDGER

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DAED1



# 4.13 Construction Details: FiberTite® Green



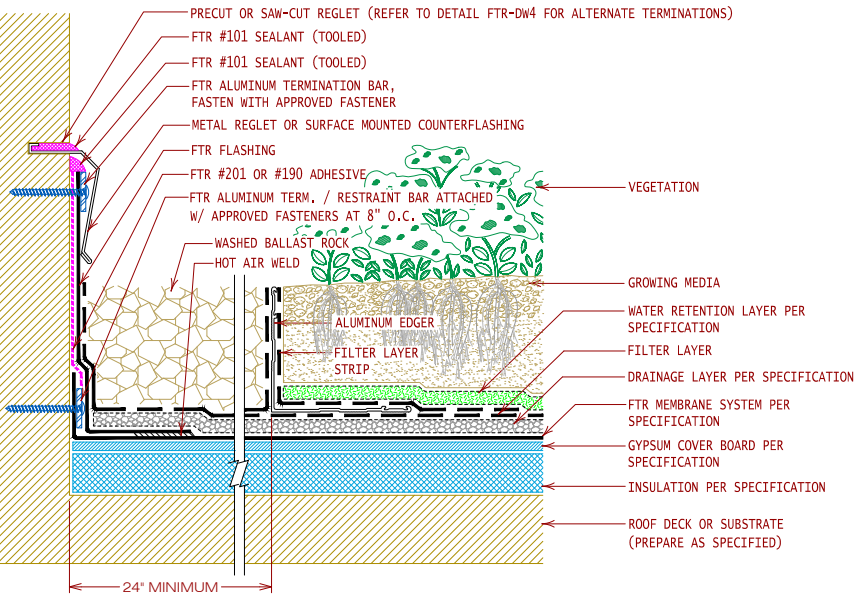
GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" 4.5" ALUMINUM EDGER AT MULTILAYER

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DAEM1

# 4.13

## Construction Details: FiberTite® Green

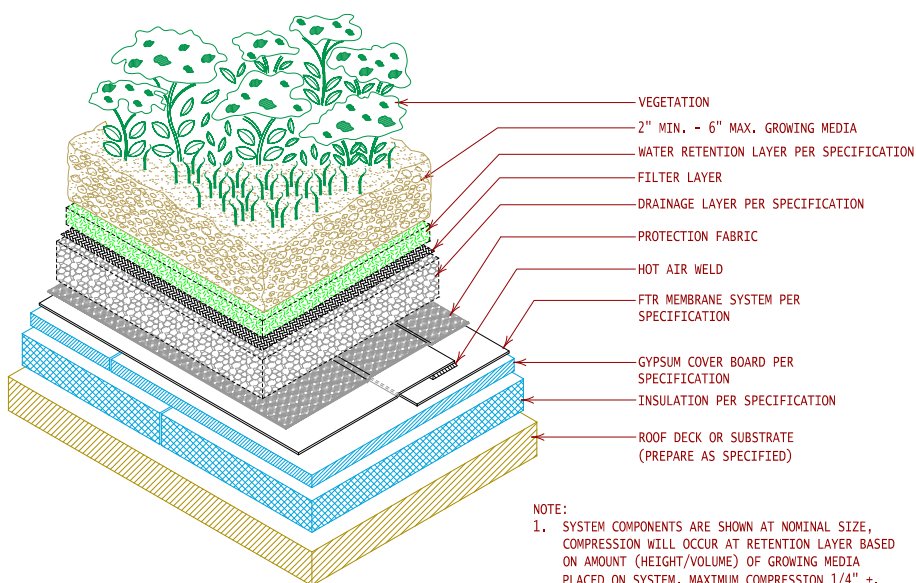


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

### "FIBERTITE GREEN VEGETATED ROOF SYSTEM" BALLAST ROCK AT WALL WITH EDGER

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DAEW1

# 4.13 Construction Details: FiberTite® Green

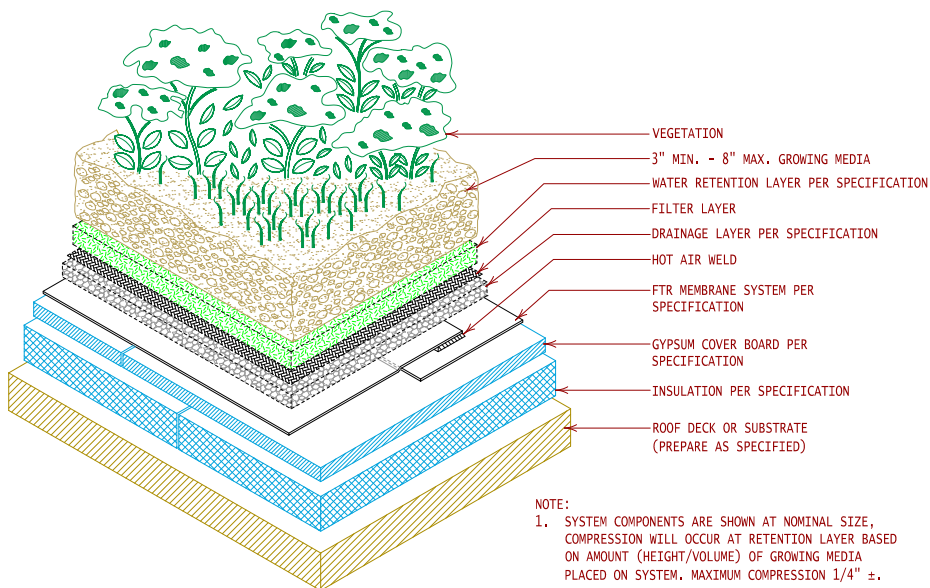


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" EXTENSIVE MULTILAYER SYSTEM

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DEML1

# 4.13 Construction Details: FiberTite® Green

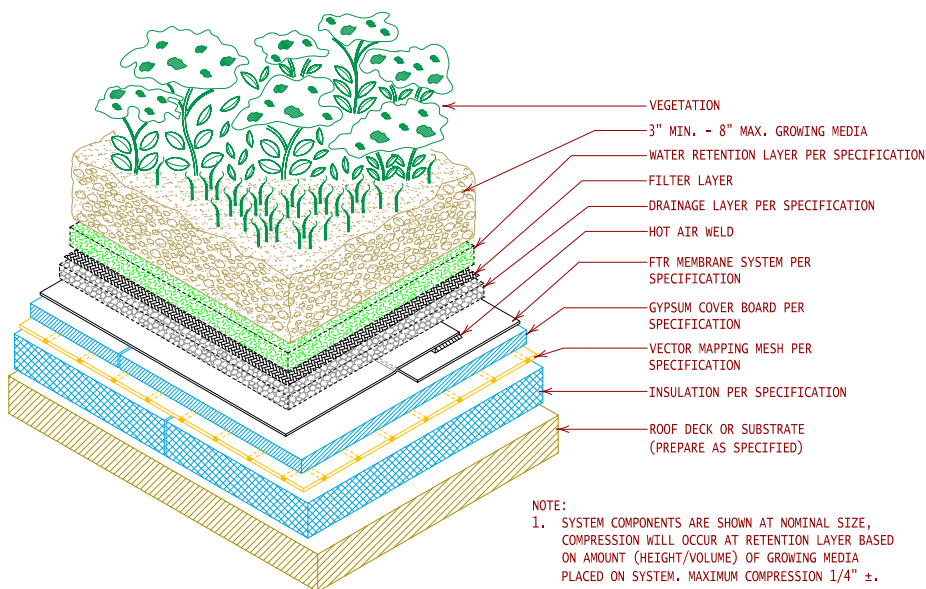


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" STANDARD MULTILAYER SYSTEM

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DSML1

# 4.13 Construction Details: FiberTite® Green

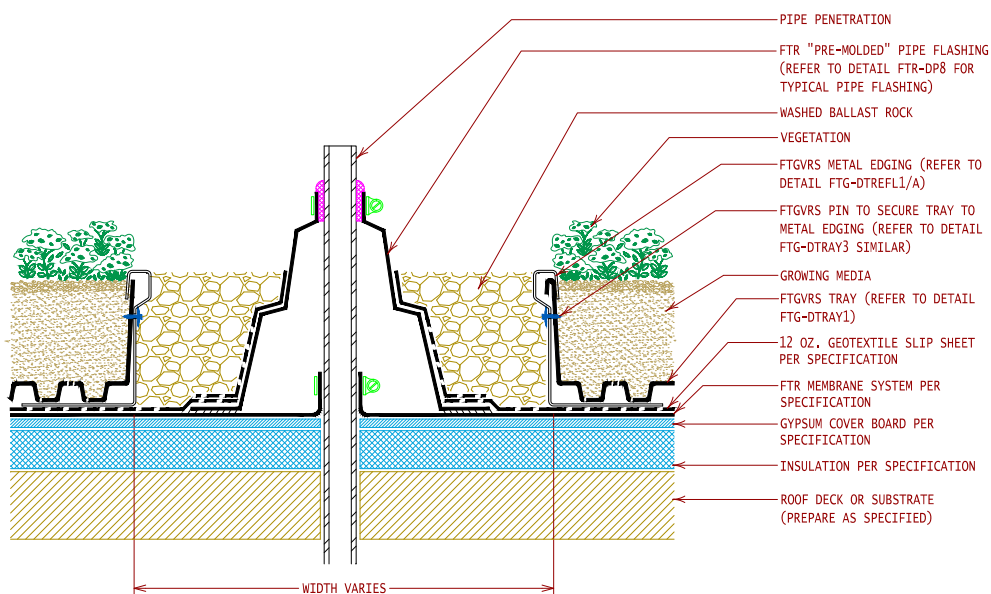


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" STANDARD MULTILAYER SYSTEM W/VECTOR MAPPING MESH

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DSML2

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

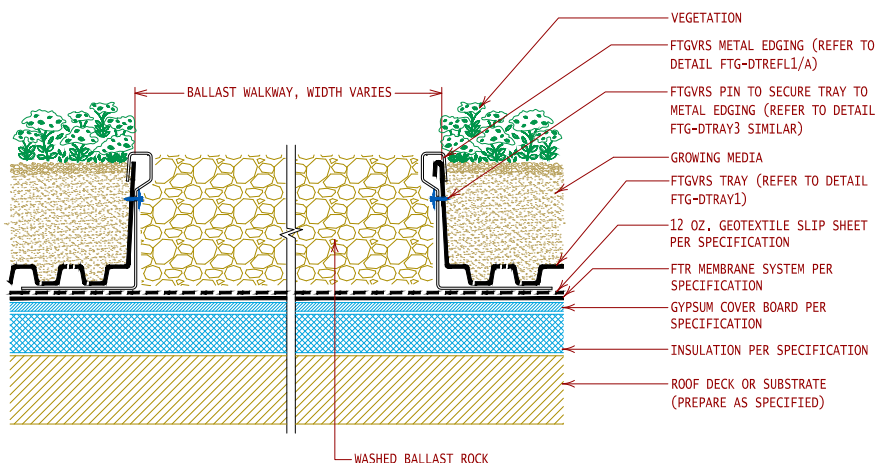
"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
FTGVRs TRAY SYSTEM W/ BALLAST ROCK AT PENETRATION

REVISES DETAIL  
ALL PREVIOUS

ISSUE DATE  
04-03-13

DRAWING NUMBER  
FTG-DTBP1

# 4.13 Construction Details: FiberTite® Green

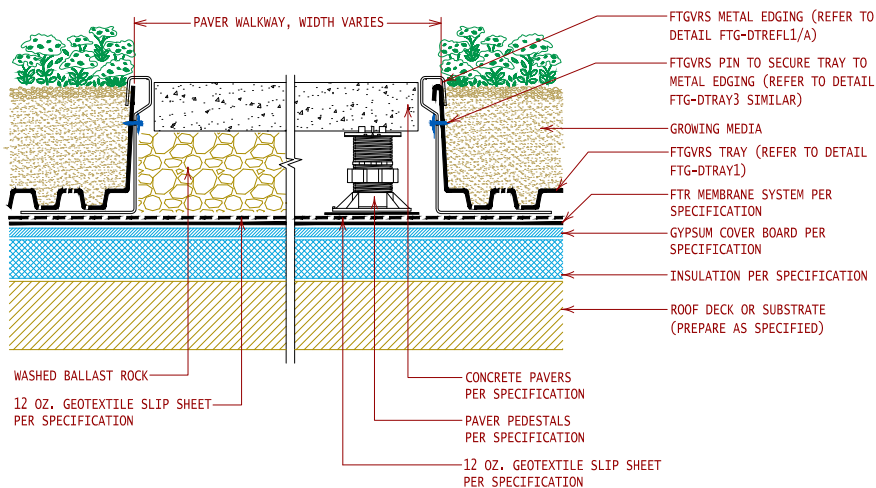


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
FTGVRS TRAY SYSTEM W/ BALLAST ROCK WALKWAY

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTBW1

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:

"FTR GS02-13"

APPLICABLE SYSTEMS:

"FTG VRS05-13"

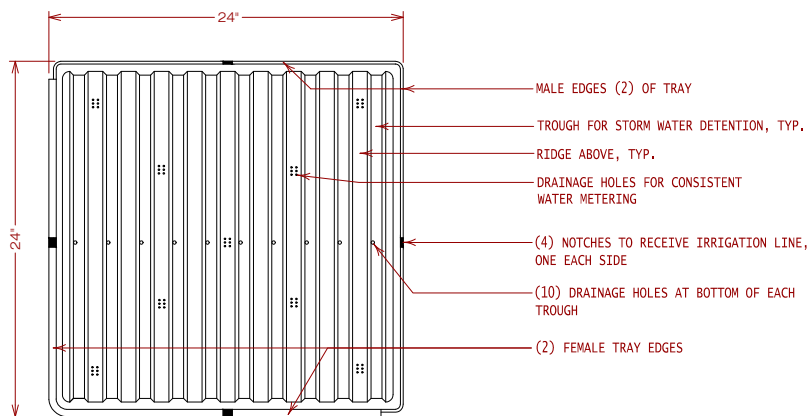
"FIBERTITE GREEN VEGETATED ROOF SYSTEM"

FTGVRS TRAY SYSTEM W/ CONCRETE PAVER WALKWAY

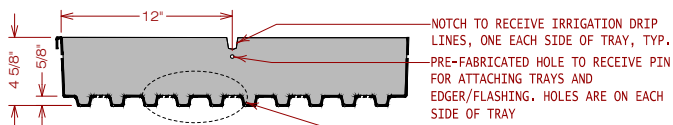
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTPW1



# 4.13 Construction Details: FiberTite® Green

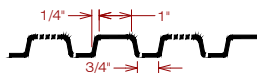


PLAN VIEW



SECTION-ELEVATION

SEE ENLARGED SECTION VIEW "A"



ENLARGED SECTION VIEW "A"



GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" TYPICAL FTGVS TRAY PROFILE

REVISES DETAIL

ISSUE DATE

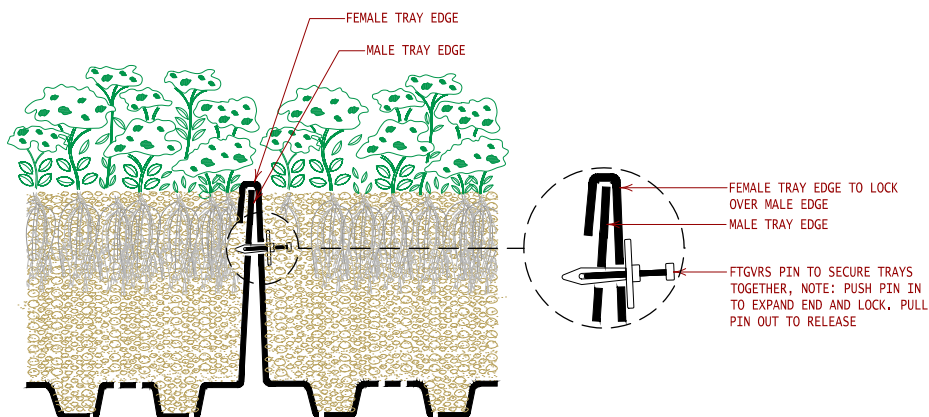
DRAWING NUMBER

ALL PREVIOUS

04-03-13

FTG-DTRAY1

# 4.13 Construction Details: FiberTite® Green



NOTE:  
1. SEE DETAIL FTG-DTRAY1 FOR FTGVRs TRAY SPECIFICATIONS.

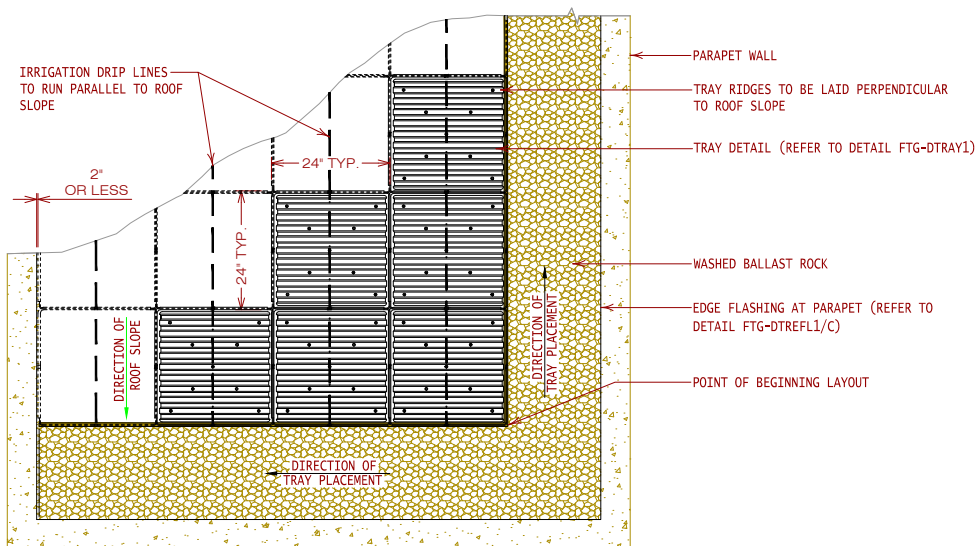


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" TYPICAL FTGVRs TRAY CONNECTION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRAY3

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:

"FTR GS02-13"

APPLICABLE SYSTEMS:

"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" TYPICAL FTGVRs TRAY LAYOUT

REVISES DETAIL

ISSUE DATE

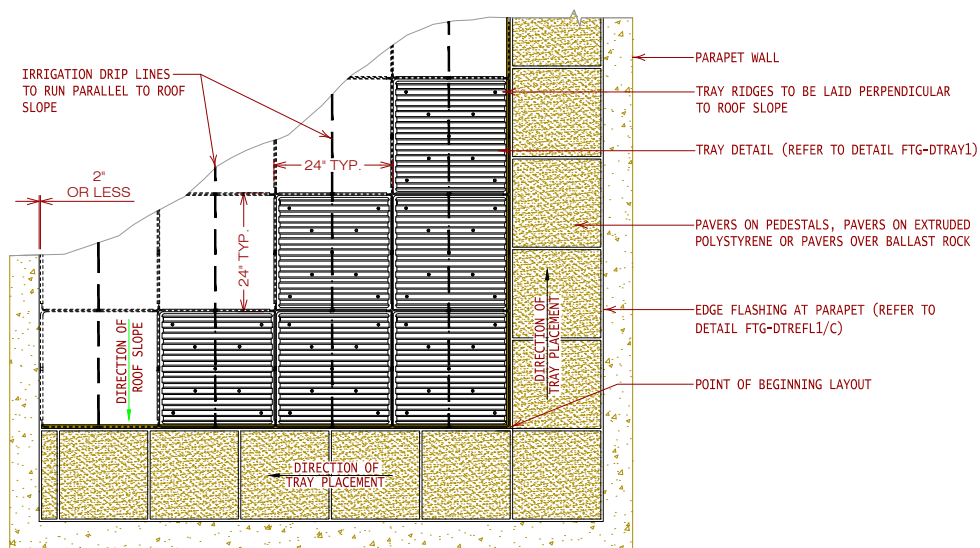
DRAWING NUMBER

ALL PREVIOUS

04-03-13

FTG-DTRAY-A

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:

"FTR GS02-13"

APPLICABLE SYSTEMS:

"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
TYPICAL FTGVRs TRAY LAYOUT

REVISES DETAIL

ALL PREVIOUS

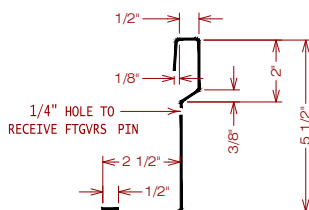
ISSUE DATE

04-03-13

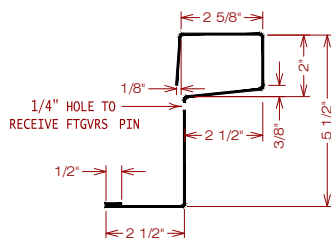
DRAWING NUMBER

FTG-DTRAY-B

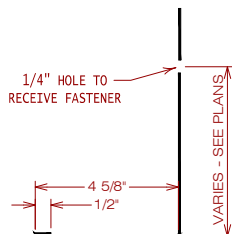
# 4.13 Construction Details: FiberTite® Green



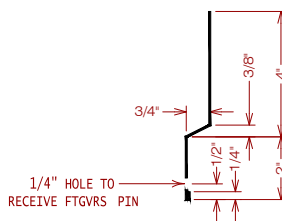
**A** FTGVRS EDGING  
PART NO. - EDG-001



**B** FTGVRS EDGING - IRRIGATION CONCEALMENT  
PART NO. - EDG-002



**C** FTGVRS PARAPET FLASHING - BASE  
PART NO. - PF-001



**D** FTGVRS PARAPET FLASHING - WALL  
PART NO. - PF-002

**NOTE:**

1. EDGER AND FLASHINGS ARE AVAILABLE IN 24 GA. (0.0239) STAINLESS STEEL OR 18 GA. (0.040) ALUMINUM WITH MILL FINISH.

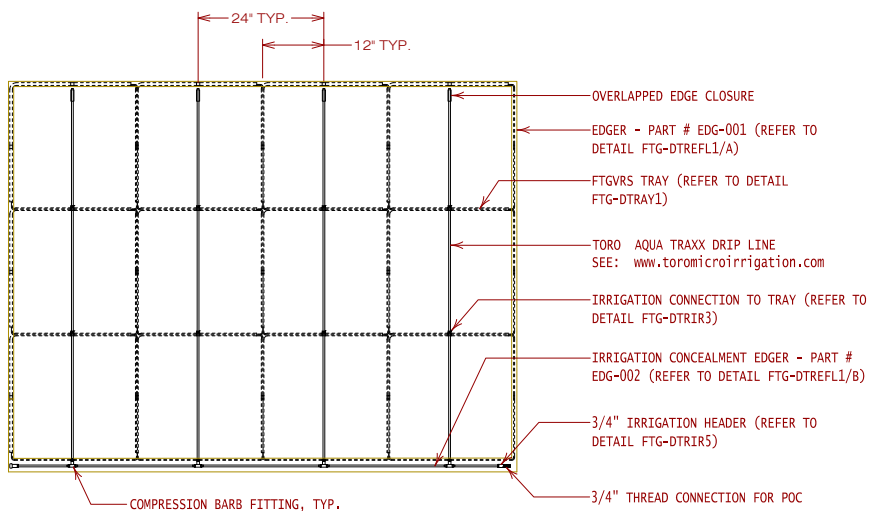


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
METAL EDGER AND WALL FLASHING PROFILES

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTREFL1

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

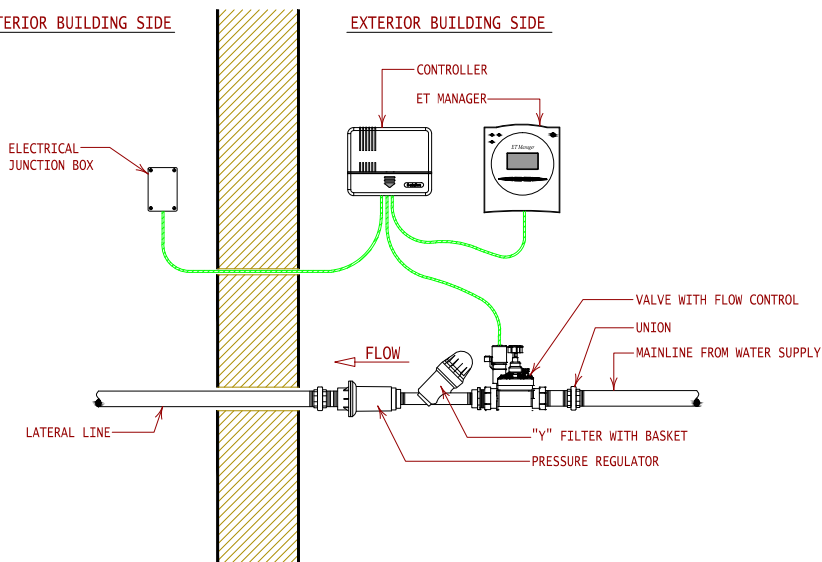
## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" IRRIGATION SYSTEM LAYOUT - TUBING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRIR1

# 4.13 Construction Details: FiberTite® Green

INTERIOR BUILDING SIDE

EXTERIOR BUILDING SIDE

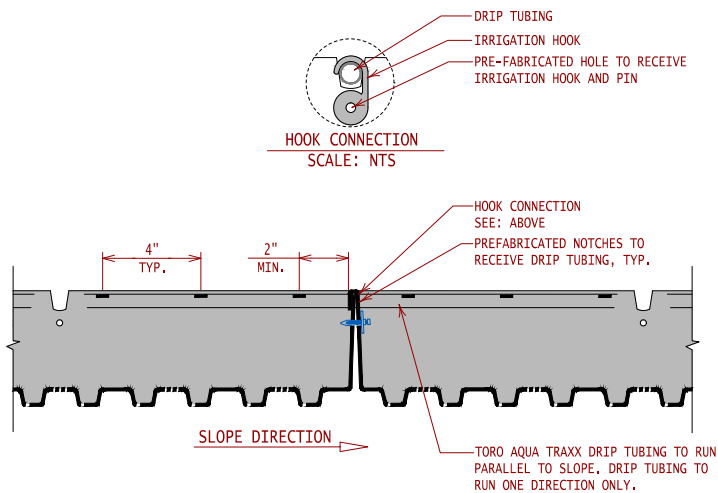


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
IRRIGATION SYSTEM LAYOUT - CONTROLS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRIR2

# 4.13 Construction Details: FiberTite® Green



## NOTES:

1. SEE DETAIL FTG-DTRAY1 FOR TRAY SPECIFICATIONS.
2. SEE: [www.toromicroirrigation.com](http://www.toromicroirrigation.com) FOR IRRIGATION SPECIFICATIONS.



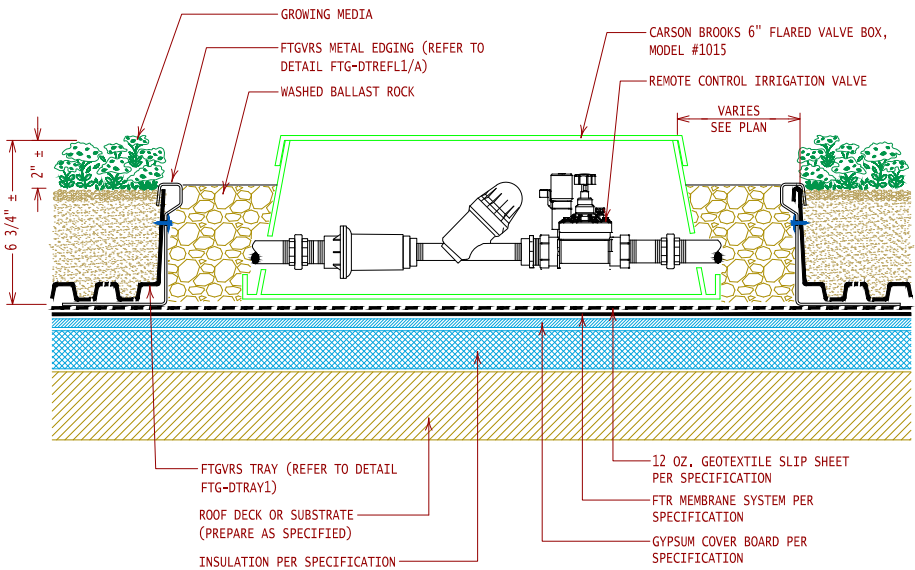
GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" IRRIGATION CONNECTION TO TRAY

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRIR3



# 4.13 Construction Details: FiberTite® Green

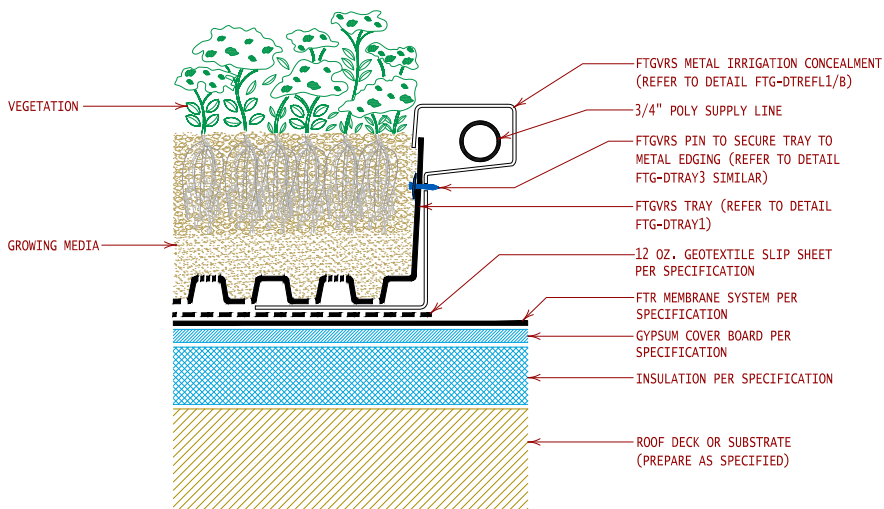


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" IRRIGATION VALVE BOX

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRIR4

# 4.13 Construction Details: FiberTite® Green



GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

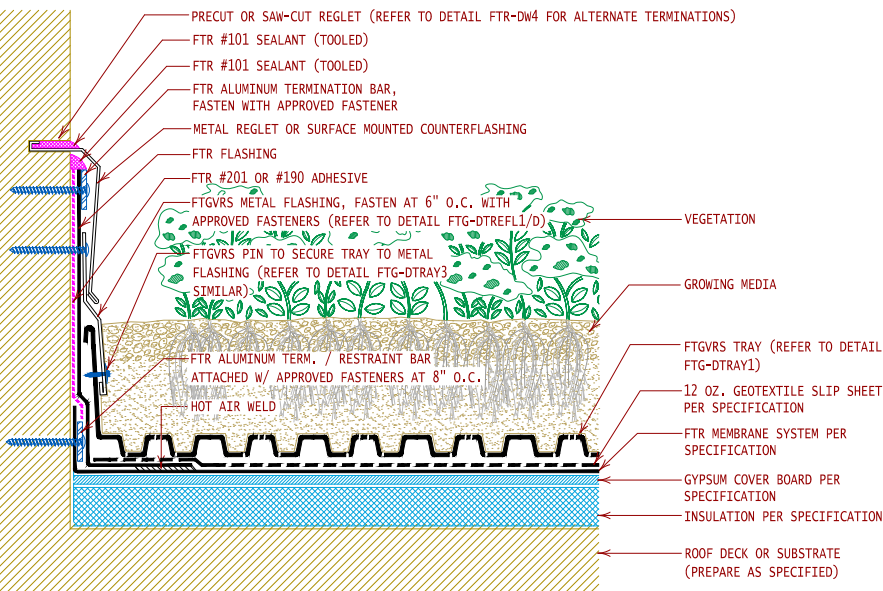
## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" IRRIGATION HEADER

REVISES DETAIL  
ALL PREVIOUS

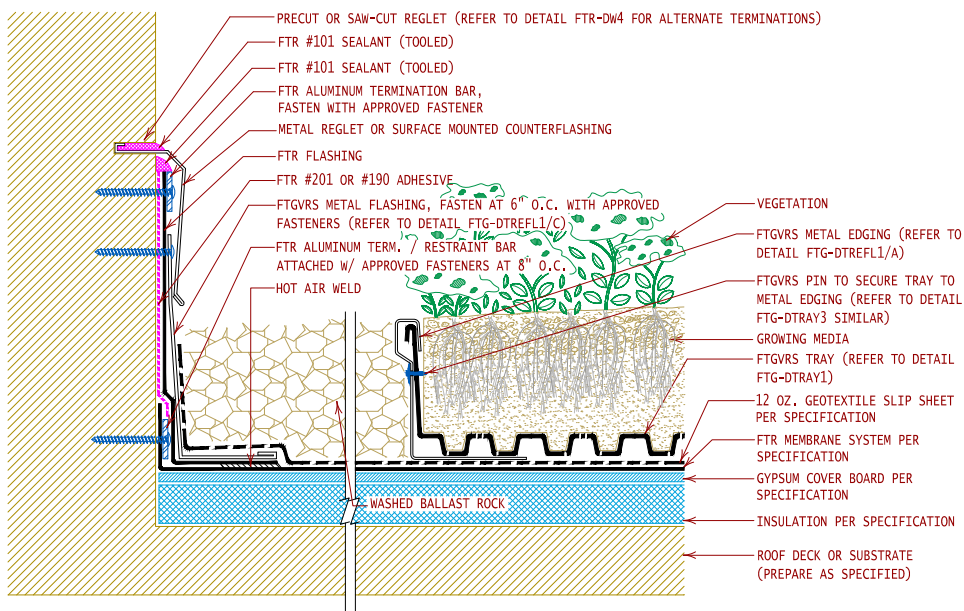
ISSUE DATE  
04-03-13

DRAWING NUMBER  
FTG-DTRIR5

# 4.13 Construction Details: FiberTite® Green



# 4.13 Construction Details: FiberTite® Green

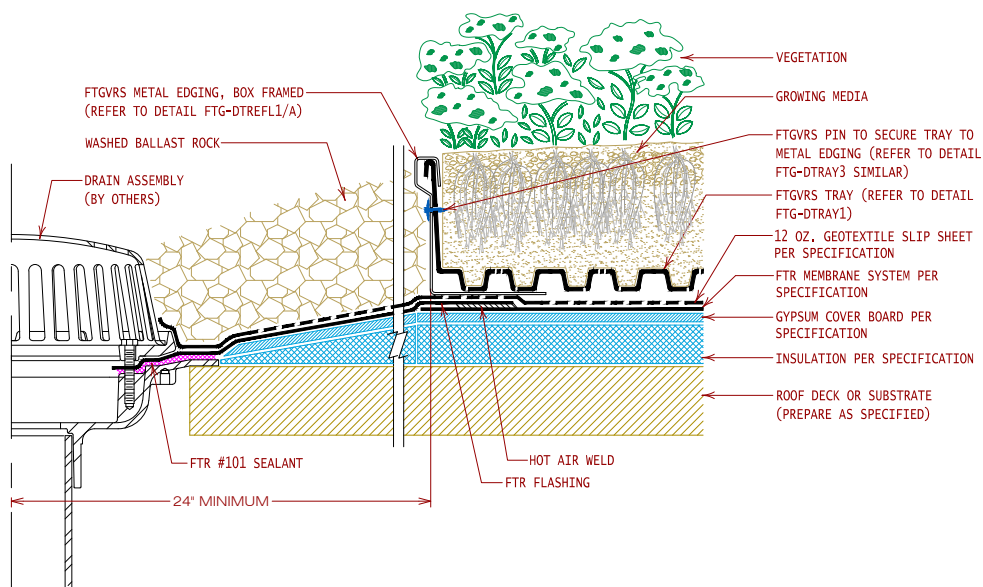


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
FTGVRS TRAY SYSTEM W/ BALLAST ROCK AT WALL

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTRW2

# 4.13 Construction Details: FiberTite® Green

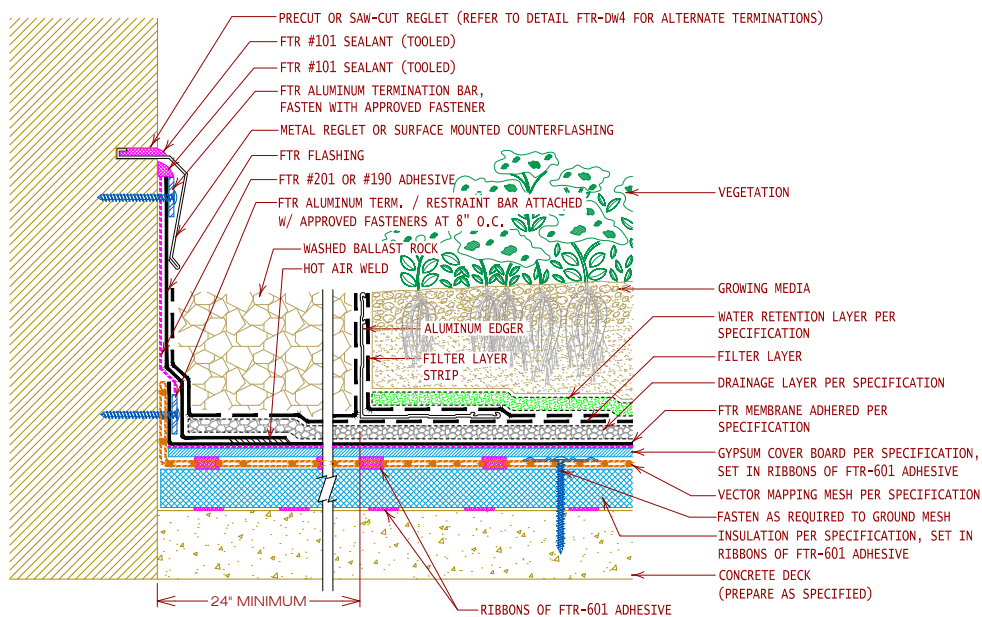


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

"FIBERTITE GREEN VEGETATED ROOF SYSTEM"  
BALLAST ROCK AT DRAIN WITH FTGVRs TRAY

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	04-03-13	FTG-DTSD1

# 4.13 Construction Details: FiberTite® Green

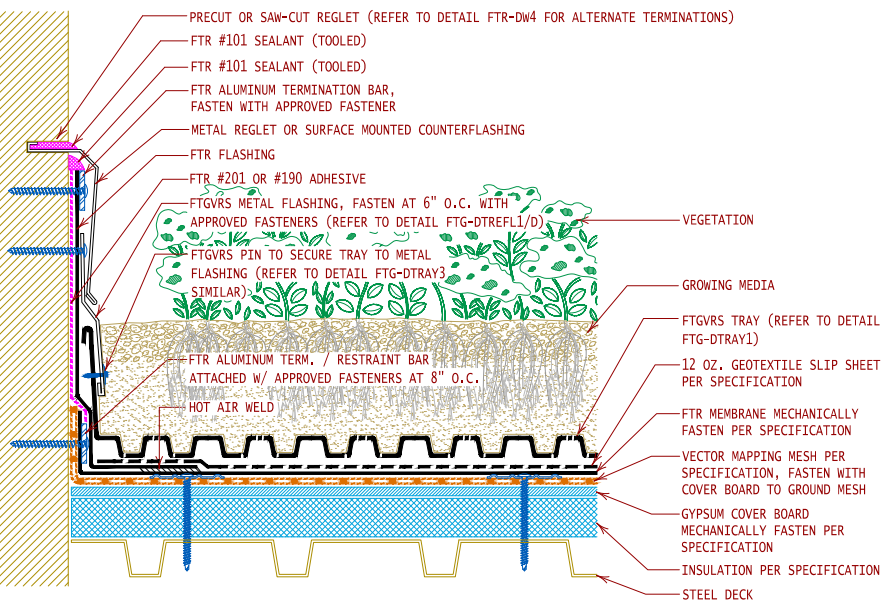


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" WALL TERMINATION W/VECTOR MAPPING MESH

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTG-DVMW1

# 4.13 Construction Details: FiberTite® Green

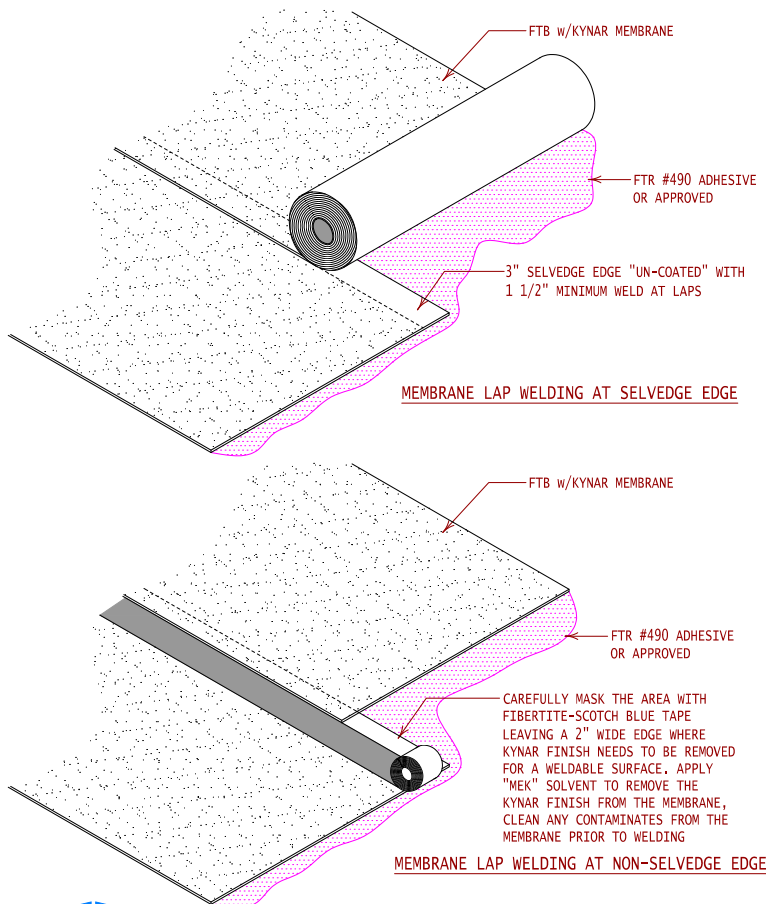


GENERAL REFERENCE:  
"FTR GS02-13"  
APPLICABLE SYSTEMS:  
"FTG VRS05-13"

## "FIBERTITE GREEN VEGETATED ROOF SYSTEM" WALL TERMINATION W/VECTOR MAPPING MESH

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTG-DVMW2

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®



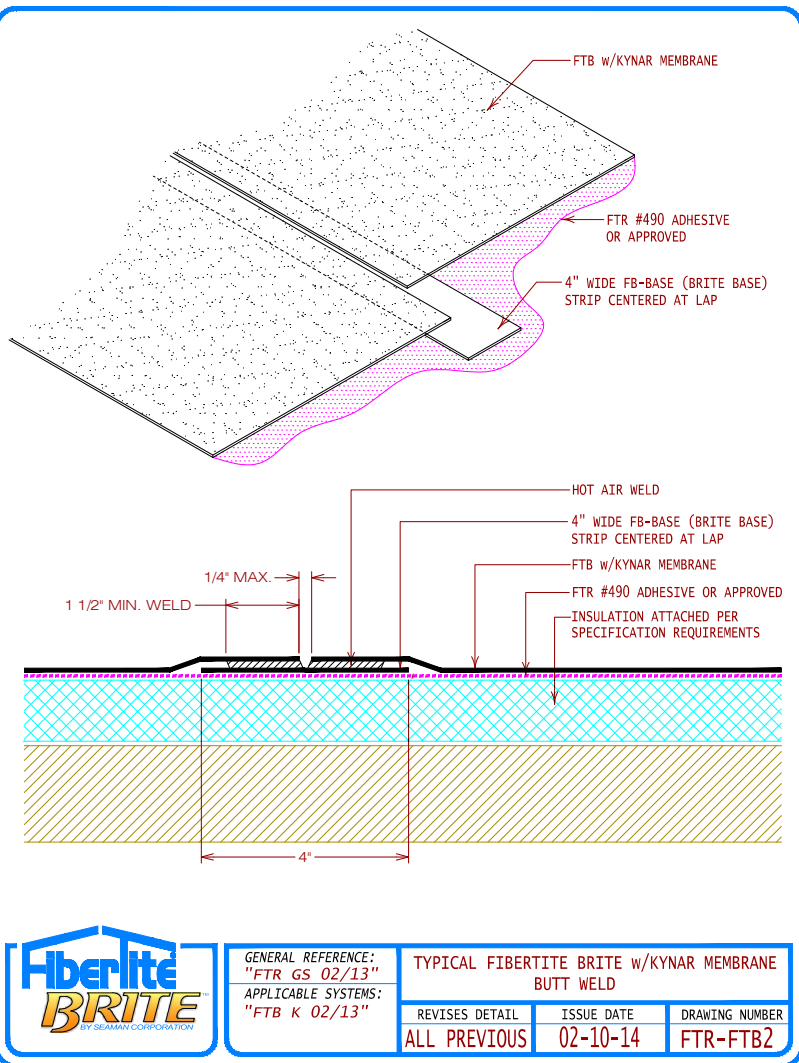
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

## TYPICAL FIBERTITE BRITE w/KYNAR MEMBRANE LAP WELDING

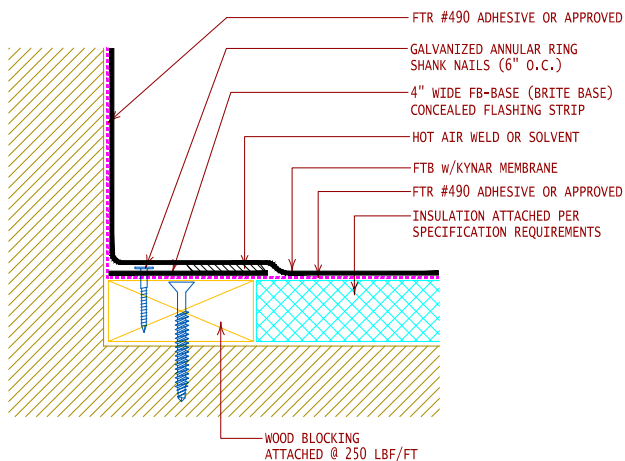
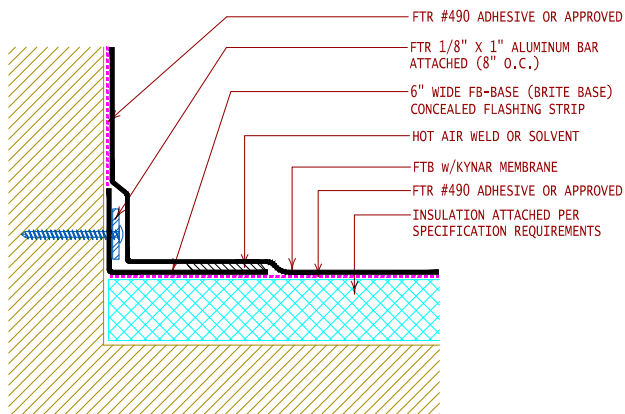
REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTB1



# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®



# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®

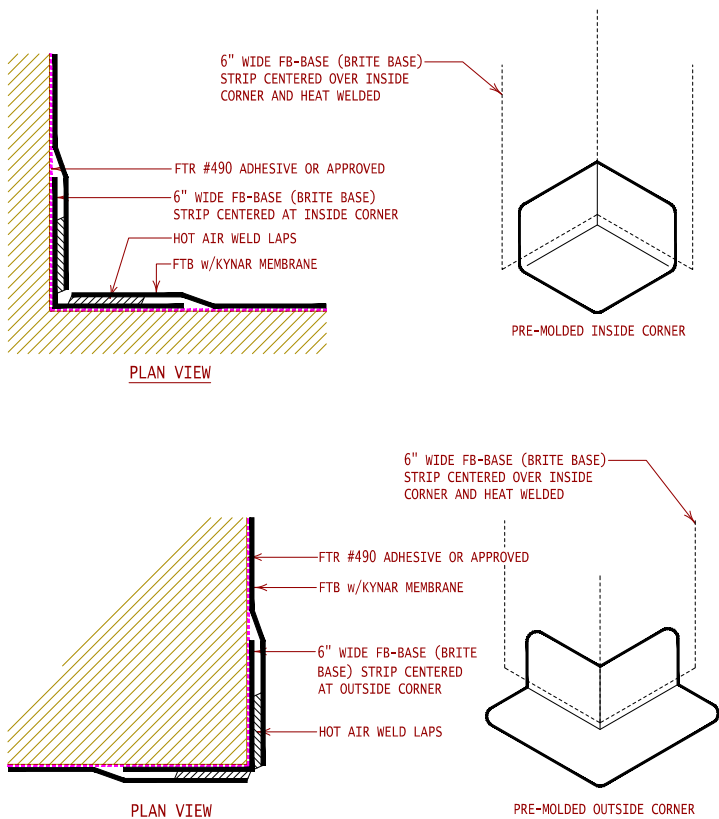


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

## TYPICAL WALL BASE FLASHING (FIBERTITE BRITE w/KYNAR MEMBRANE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBW1

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®



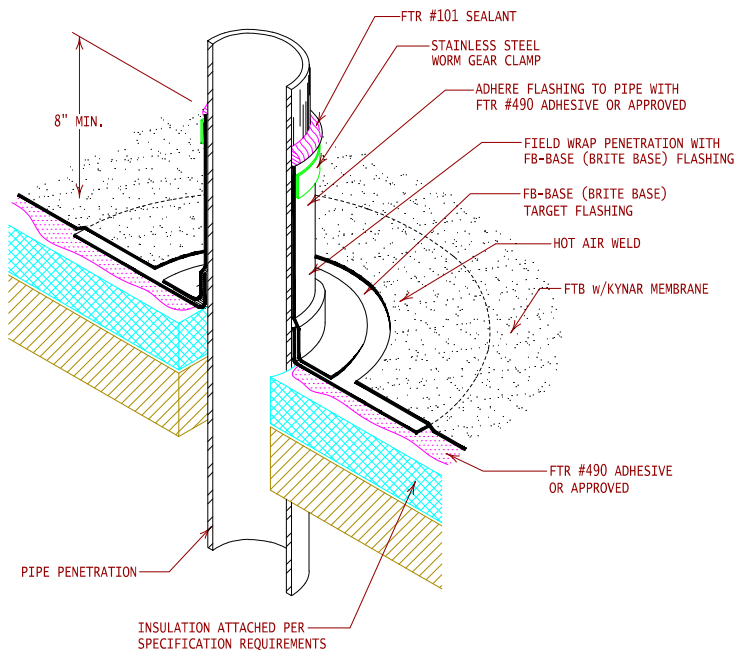
GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTR K 02/13"

TYPICAL INSIDE & OUTSIDE CORNER FLASHING  
(FIBERTITE BRITE w/KYNAR MEMBRANE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBW2

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®

NOTE:  
USE FTB TOUCH-UP PROCESS ON THE  
FB-BASE (BRITE BASE) FLASHING TO  
MATCH KYNAR MEMBRANE COLOR.

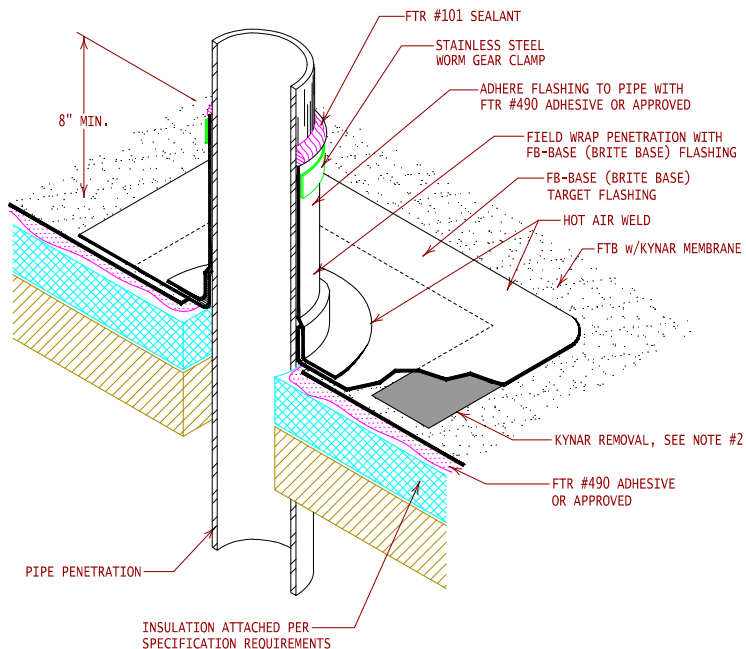


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

TYPICAL FIBERTITE BRITE w/KYNAR MEMBRANE  
FIELD FABRICATED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBP1

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®



## NOTES:

1. USE FTB TOUCH-UP PROCESS ON THE FB-BASE (BRITE BASE) FLASHING TO MATCH KYNAR MEMBRANE COLOR.
2. CAREFULLY MASK THE AREA WITH FIBERTITE-SCOTH BLUE TAPE LEAVING A 2" WIDE AREA WHERE KYNAR FINISH NEEDS TO BE REMOVED FOR A WELDABLE SURFACE. APPLY "MEK" SOLVENT TO REMOVE THE KYNAR FINISH FROM THE MEMBRANE, CLEAN ANY CONTAMINATES FROM THE MEMBRANE PRIOR TO WELDING.

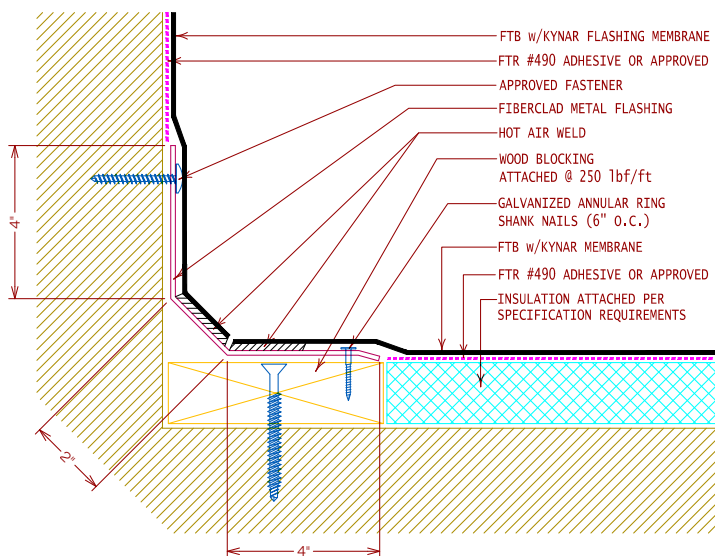
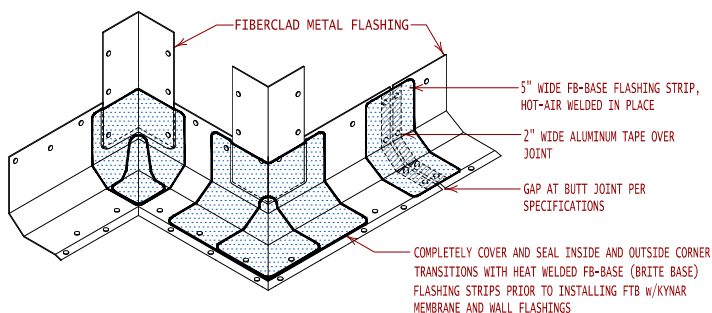


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

## TYPICAL FIBERTITE BRITE w/KYNAR MEMBRANE FIELD FABRICATED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBP2

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®

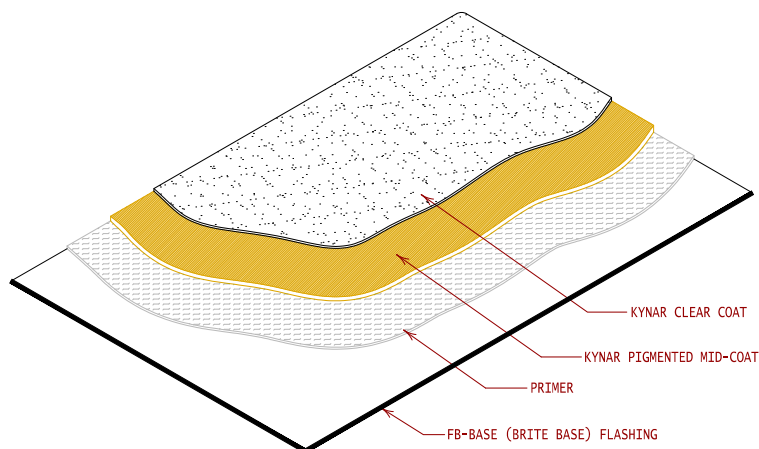


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

## TYPICAL "CLAD" METAL FLASHING (FIBERTITE BRITE w/KYNAR MEMBRANE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-KMF1

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®

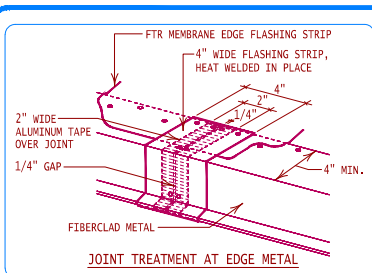


GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

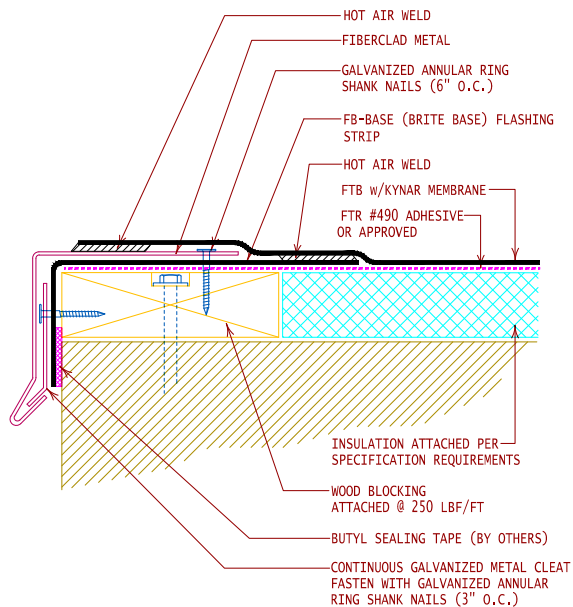
TYPICAL "TOUCH UP" ON THE FB-BASE FLASHING  
TO MATCH FIBERTITE BRITE w/KYNAR SYSTEM

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBTU

# 4.14 Construction Details: FiberTite® Brite™ w/Kynar®



NOTE:  
USE FTB TOUCH-UP PROCESS TO PAINT  
CLAD METAL TO MATCH KYNAR IF  
DESIRED.



GENERAL REFERENCE:  
"FTR GS 02/13"  
APPLICABLE SYSTEMS:  
"FTB K 02/13"

FIBERCLAD METAL EDGE FLASHING  
FOR THE FIBERTITE BRITE w/KYNAR SYSTEM

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-FTBE1





# Specifications

<b>FTR GS 02/13</b> General Guideline Specifications	<b>5.1</b>
<b>FTR MA 02/13</b> Mechanically Attached FiberTite® Roofing Systems	<b>5.2</b>
<b>FTR AD 02/13</b> Adhered FiberTite® Roofing Systems	<b>5.3</b>
<b>FTR BA 02/13</b> Ballasted FiberTite® Roofing Systems	<b>5.4</b>
<b>FTR IW GS 07/15</b> Fibertite® Induction Welded Roofing Systems	<b>5.5</b>
<b>FTR SMRP 02/13</b> FiberTite® Roofing Systems with a Simulated Metal Roofing Profile	<b>5.6</b>
<b>FTR MR 02/13</b> FiberTite® Roofing Systems Installed Over Existing Metal Roofing	<b>5.7</b>
<b>FTR MP 02/13</b> FiberTite® Multi-Ply Roofing Systems	<b>5.8</b>
<b>FTB-K 02/13</b> FiberTite Brite™ with Kynar® Roofing Systems	<b>5.9</b>
<b>FTG VRS05/13</b> FiberTite® <b>Green</b> Vegetated Roofing Systems	<b>5.10</b>

# 5.1 General Guide Specifications

## FTR GS 02/13 - General Guide Specification for Installation of FiberTite® Roofing Systems

FTR GS 02/13 is provided as a general foundation for the design and installation of a quality, high performance [FiberTite Roofing Systems](#). Addendums are inclusive by reference and considered part of any specification intended to guide or govern the installation of any [FiberTite Roofing System](#).

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install a [FiberTite Roofing System](#) as manufactured and supplied by:

**Seaman Corporation**

1000 Venture Blvd.

Wooster, Ohio 44691

Tel.: 1-800-927-8578

Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a [FiberTite Roofing System](#) according to the guidelines set forth herein and specific system addendums included by reference in [5.1 Part 1, Section 2: References](#).
2. All applications and project specifications require review by [FiberTite Technical Customer Services \(FTCS\)](#) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice ([FTR-PIN](#)), must be completed, signed by an authorized roofing contractor, submitted to and approved by [FTCS](#) before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or [Statement of Sound Roof Structure](#), to [FTCS](#), indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Moisture conditions in existing roof(s), new structural concrete or new lightweight insulating concrete which would impair or prohibit the desired performance of the new roof system.
3. Coal tar recover and/or direct contact with bituminous materials.
4. Positive slope to promote adequate drainage to avoid the potential damage to the substrate or components.
5. Roof areas subject to heavy or excessive mechanical traffic.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the [Seaman Corporation/FiberTite](#) chemical resistance publication.

# 5.1 General Guide Specifications

## Part One - General (cont.)

3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with [EPA](#) and [OSHA](#) requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when installing adhered roofing systems.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives ([FTR-490](#) or [FTR 390](#)) if the ambient air temperature is expected to drop below **32°F (0°C)** within **48 hours** of application.

## 2. FiberTite® Roofing Systems (FTR) References

- A. [FTR MA 02/13](#)
- B. [FTR AD 02/13](#)
- C. [FTR BA 02/13](#)
- D. [FiberTite Construction Details](#)
- E. [FiberTite Foreman's Manual](#)

## 3. Quality Assurance

- A. [FiberTite Roofing Systems](#) shall be installed only by a roofing contractor, authorized by [Seaman Corporation](#) to install [FiberTite Roofing Systems](#) prior to bid and/or contract award. Herein, the term [Authorized FiberTite Roofing Contractor](#) is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of [FiberTite Roofing Systems](#) by [Seaman Corporation](#).
- C. [FiberTite Roofing Systems](#) shall be installed in accordance with the most current guide specifications ([FTR GS 02/13](#)) and details as amended and/or authorized by [FTCS](#) for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and [FTCS](#).
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the [Contract Documents](#) or [Manufacturer's Specifications](#) shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by [FTCS](#) for acceptance and approval.
- H. All field seams shall be visible and available to [FTCS](#) at the time of final inspection.

# 5.1 General Guide Specifications

## Part One - General (cont.)

### 4. Submittals

- A. The following information shall be submitted to **FTCS** for review before warranty consideration, material shipment or acceptance can be confirmed:
1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in **FiberTite** literature.
  3. Dimensioned outline of the roof indicating all **FTR**-Detail references.
  4. Dimensioned shop drawings illustrating non-**FiberTite** details.  
Details that do not conform with standard **FiberTite** details shall be returned with appropriate recommendations.
- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
1. Most recent published technical literature and guide specifications issued by **FTCS**.
  2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.

# 5.1 General Guide Specifications

## Part One - General (cont.)

- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's [Material Safety Data Sheets](#).
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

## 6. Job Conditions

### A. Safety

- 1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
- 2. Worker safety is paramount.
- 3. [FiberTite](#) is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
- 4. Comply with all [OSHA](#) requirements for roof construction and fall protection where required.
- 5. Store flammable liquid and materials away from open sparks, flames and extreme heat.
- 6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
- 7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

### B. Protection

- 1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
- 2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
- 3. Traffic should be minimized on a freshly laid roof.
- 4. Protect building walls, rooftop units, windows and other components during installation.

### C. Additional Precautions

- 1. Adverse weather conditions (e.g. [extreme temperature](#), [high winds](#), [high humidity and moisture](#)) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation.
- 2. Daily production schedules of new roofing shall be limited to only that which can be made [100%](#) watertight at the end of the day, including all flashing and night seals.
- 3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
- 4. Comply with local [EPA](#) requirements as published by local, state and federal authorities.
- 5. All construction debris shall be removed from the construction site and legally disposed of offsite.

# 5.1 General Guide Specifications

## Part One - General (cont.)

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of **Seaman Corporation**. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. A **FiberLite Technical Customer Service Representative** shall inspect the completed **FiberLite Roofing** installation, and upon acceptance, **Seaman Corporation** shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. **Seaman Corporation** offers the following **FiberLite Roofing System** warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of **10 years**. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the **FiberLite** membrane.

# 5.1 General Guide Specifications

## Part Two - Products

### 1. General

- A. All products and components for the **FiberTite Roofing System** shall be supplied by **Seaman Corporation**.
- B. Components other than those manufactured and/or supplied by **Seaman Corporation** shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by **Seaman Corporation**, shall be considered unacceptable and their performance excluded from the warranty.
- C. **FiberTite Roofing Systems** may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact **FTCS** for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite Membrane

**FiberTite** is a nominal **36-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite** exceeds all requirements outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### B. FiberTite-XT Membrane

**FiberTite-XT** is a nominal **50-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **6.5-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XT**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XT** greatly exceeds all requirements outlined **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### C. FiberTite-SM Membrane

**FiberTite-SM** is a nominal **45-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-SM**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-SM** exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

**FiberTite-XTreme** is a nominal **90-mil** ketone ethylene ester (**KEE**), reinforced with a **12.5-oz yd<sup>2</sup>** woven polyester mat, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XTreme**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XTreme** greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Membranes.



# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### E. FiberTite-FB Membrane

FiberTite, FiberTite-XT, and FiberTite-SM are all available in fleece back versions for adhered roofing. FiberTite-FB membranes have a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-FB, conforming to the physical properties as outlined in the associated data sheet(s). FiberTite-FB exceeds the physical property requirements and definitions as outlined in ASTM D7654 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing per the individual sub-assembly/base membrane listed above.

#### F. FiberTite Brite with Kynar® Membrane Roofing Membrane

FiberTite Brite is a 45-mil high performance Architectural Grade PVC membrane, reinforced with a 5.0-oz yd<sup>2</sup> woven polyester fabric and a Kynar® fluoropolymer top-finish as manufactured by Seaman Corporation, under the trade name FiberTite Brite, conforming to the physical properties as outlined in the associated data sheet. FiberTite Brite meets or exceeds all requirements outlined in ASTM D 4434 Standard Specification for Poly-Vinyl Chloride (PVC) Sheet Roofing.

#### G. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### H. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated or non-insulated\*
3. Insulated Steel Decking
4. Existing smooth surfaced and/or granulated bituminous roof or existing single ply roof membrane\*
5. Existing aggregate surfaced bituminous roof with authorized insulation or coverboard
6. Exterior grade plywood; insulated or non-insulated\*
7. Cementitious fiber or Gypsum, insulated or non-insulated\*
8. Cellular, lightweight insulating concrete\*
9. Authorized base sheet with an adhered insulation/cover board assembly

(\*) A slip sheet or separation layer is recommended depending upon system type. The requirement for including and/or the selection of an appropriate slip sheet or base sheet will be determined by the system selected, surface texture of the substrate, environmental and/or fire classification requirements of the project roof assembly.

# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by **Seaman Corporation** have been specially formulated for **FiberTite Roofing Systems**.

**NOTE:** Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A **VOC compliant** solvent borne, contact (**two-sided**) bonding adhesive, designed for bonding non-fleece back **FiberTite** membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-290 Adhesive

A **VOC compliant** solvent borne adhesive, one side application (substrate only), designed for bonding **FiberTite-FB (fleece back)** membranes to properly prepared and preauthorized horizontal substrates.

##### 3. FTR-390 Adhesive

A rubberized/asphalt water borne emulsion adhesive, **VOC compliant**, one side application (**substrate only**), designed for bonding **FiberTite-FB (fleece back)** membranes to properly prepared and preauthorized horizontal substrates.

##### 4. FTR-490 Adhesive

A polymeric water borne, **VOC compliant** adhesive, one side application (substrate only), designed for bonding **FiberTite-FB (fleece back)**, **FiberTite-SM** and **FiberTite Brite** to properly prepared and preauthorized horizontal substrates.

##### 5. FiberTite CR-20 Adhesive

A dual component elastomeric polyurethane froth adhesive designed for bonding Fleece Back **FiberTite** membranes (**spatter application**) to properly prepared and preauthorized horizontal substrates.

##### 6. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere **FiberTite** flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure **FiberTite** Membranes to steel, wood and structural concrete decks. A **#15-13**, buttress threaded, **#3 Phillips head** fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A **#14-13**, heavy duty threaded steel **#3 Phillips truss**, self tapping corrosion resistant fastener.

# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### B. FTR Fasteners (cont.)

##### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

##### 4. FiberTite Purlin Fasteners

To secure FiberTite membrane to the existing metal roofing system's structural members.

##### 5. FiberTite BS Fasteners

Coated fastener and stress plate to secure base sheets to gypsum and cellular lightweight insulating concrete decks.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure FiberTite membranes:

###### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from 18-gauge AZ-50 galvalume steel.

###### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

###### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

##### 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ-50 galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

##### 1. FTR-101 Sealant

A single-component gun-grade polyether sealant to seal flashing termination.

##### 2. FTR-SLS Sealant

A single-component self leveling polyether sealant for pitch plans.

##### 3. FiberClad Metal

To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.

##### 4. FTR-Premolded Flashing(s)

Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.

##### 5. FTR Non-Reinforced Membrane

Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.

# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### D. Additional Components (cont.)

6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural Kynar® metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **Simulated Metal Roofing Profile (Rib)**  
The simulated metal roofing profile shall be a Co-Extruded Ornamental Profile with a KEE compatible heat-activated adhesive as provided by Seaman Corporation. Extruded profile shall be provided in 100 feet continuous lengths and match fleece back membrane color.
13. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

## 4. Related Materials

### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be No. 2 or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be 1.5 inches nominal.

### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult N.R.C.A. or other technical resource for appropriate guidelines.
2. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
3. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### C. Insulation

NOTE: For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:
  - a. **Preapproved products**
    - i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 2.0 pcf. Minimum  
Meet requirements of **ASTM C1289**
    - ii. FTR-Value XPS  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 1.5 pcf. Minimum  
Meet requirements of **ASTM D1621**
    - iii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A Assembly**.  
Meet requirements of **ASTM C 473**  
Georgia-Pacific Gypsum LLC **DensDeck®Prime**  
or United States Gypsum Company **Securock®**

#### D. Adhesives for Insulation Attachment

1. **General**
  - a. Adhesive not specifically supplied by **Seaman Corporation** shall be listed and approved by **Factory Mutual Research** in conjunction with the specified insulation and specific substrate.
  - b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under **FM-Global** requirements or acceptable third party laboratory.
  - c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.
2. **Polyurethane**
  - a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.

# 5.1 General Guide Specifications

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Adhesives for Insulation Attachment (cont.)

##### 2. Polyurethane (cont.)

###### b. Preapproved products

- i. FTR-601
- ii. FiberTite CR-20
- iii. Insta-Stik™; Dow Chemical Company
- iv. OlyBond™; Olympic Manufacturing Group

##### 3. Hot Asphalt

- a. Asphalt shall be **Type III** or **Type IV** steep asphalt, according to **ASTM D-312**.
- b. Asphalt shall be applied within **25°F** of the asphalt manufacturer's recommended Equiviscous Temperature (**EVT**). If the manufacturer does not supply the **EVT**, **Seaman Corporation** recommends a temperature range of **425°F** for mopping and **450°F** for mechanical spreaders. Asphalt applied within **25°F** of the **EVT**, under normal environmental conditions; will provide a nominal **23-25 pounds** of asphalt per **100 square feet**.
- c. The roofing contractor is responsible for maintaining the temperature tolerances at the kettle as well as the rooftop at all times.
- d. Cold weather application can cause significant drops in the temperature of the asphalt during transport to the roof and points of application. Insulated equipment is recommended during cold weather applications.
- e. All projects utilizing hot asphalt for insulation securement require written authorization, prior to the bidding process, by **Seaman Corporation**.

#### E. Base Sheets

1. Preapproved base sheet shall be installed, where specified and/or required, to provide a suitable surface for installation over or adhering the insulation and/or **FiberTite-FB Roofing System**.
2. Acceptable products must be pre-approved or approved in writing by **Seaman Corporation** and comply with the following minimal characteristics and classification(s).
  - a. **FM approved, Class 1-90**, wind uplift.
  - b. **ASTM D 4601 Type II** Asphalt Coated Glass-Fiber Base Sheet
  - c. **ASTM D 4897 Type II** Asphalt Coated Glass-Fiber Venting Base Sheet
  - d. Foil/Kraft Laminate w/min tensile of **54 lb/1"** according to **ASTM D 828**
3. **Preapproved products**
  - a. **GAF; GAFGLAS #80 Premium**
  - b. **GAF; GAFGLAS Stratavent**

# 5.1 General Guide Specifications

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with FTR GS02/13; General Guide Specifications for Installation of FiberTite Roofing Systems.
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the FiberTite Roofing System, roof insulation and specified components.
- C. Application of Seaman Corporation/FiberTite materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the FiberTite Roofing System.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the FiberTite Roofing System.
- B. Seaman Corporation requires fastener withdrawal values (pull out tests) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation and/or membrane roof system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the FiberTite Roofing System as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the FiberTite Roofing System.
- E. The application of adhesives or hot asphalt directly to structural concrete, gypsum, Tectum, lightweight insulating concrete, existing smooth and/or granulated BUR materials may require sealing or priming with an appropriate elastomeric or asphalt primer prior to application.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

- 1. Steel decking shall conform to Factory Mutual (FM) guidelines for Class-1 insulated steel deck construction.
- 2. Steel decking shall be constructed of a minimum 22-gauge cold rolled steel sheets with factory G-90 galvanized coating.
- 3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
- 4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### A. Steel Deck (cont.)

5. Steel decking that is less than 22-gauge may be considered for application by Seaman Corporation. Fastener withdrawal tests shall be performed on all "Non-FM Approved" steel decking, (decking less than 22-gauge) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the FiberTite Roofing System.

#### B. Structural Concrete (Poured and/or Precast)

1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than 0.1875 of an inch must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new FiberTite Roofing System.

#### C. Wood

1. Wood decking shall conform to Factory Mutual (FM) guidelines for Class-1 impregnated wood decking. FM Class-1 decking consists of a minimum 2 inches thick wood plank or minimum 3/4 inch plywood.
2. Wood decking that is less than 0.75 inch will be considered for application by Seaman Corporation. Fastener withdrawal tests shall be performed on all "Non-FM Approved" wood decking (wood plank less than 2 inches thick or plywood less than 0.75 inch thick) to determine suitability and appropriate fastener patterns for the components of the new FiberTite Roofing System.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (including wind up-lift) according to specified design criteria and/or local building code requirements.
5. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.

#### D. Cementitious Fiber

1. Molded panels shall be installed in strict accordance with the manufacturer's installation requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
3. Vertical alignment between adjacent panels shall provide a uniform substrate. Alignment differences shall be no greater than 0.125 of an inch and shall be leveled with cementitious grout.
4. Fastener withdrawal tests shall be performed on all cement fiber decking to determine suitability for and appropriate fastener patterns for the components of the new FiberTite Roofing System.



# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### E. Gypsum Concrete

1. Gypsum decks shall be installed in strict accordance with standard industry practice, the manufacturer's installation requirements and local building code requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new [FiberTite Roofing System](#).
3. The gypsum fill shall be reinforced with wire mesh at a proper depth within the fill.
4. Finished decking shall maintain a minimum thickness (not including the form board) of **2 inches**.
5. Fastener withdrawal tests shall be performed on all gypsum decking to determine suitability and appropriate fastener patterns for the components of the new [FiberTite Roofing System](#).

#### F. Lightweight Cellular Insulating Concrete

1. Lightweight cellular insulating concrete, herein after referred to as lightweight concrete, shall be installed by trained applicators, approved in writing by the Lightweight Manufacturer.
2. Lightweight concrete shall be installed in strict accordance with the manufacturer's installation requirements and standard industry practices.
3. The finished lightweight concrete installation shall exhibit an oven dry density of a nominal **50 pounds per cubic foot** and a minimum compressive strength equal to or greater than **300 psi**.
4. Newly installed lightweight concrete shall be protected from the intrusion of free water/rain infiltration.
5. Intruded water must be removed prior to the installation of the new [FiberTite Roofing System](#). Consult the appropriate lightweight concrete manufacturer for methodology.
6. The lightweight concrete shall be installed to provide positive slope and subsequent positive drainage of the new [FiberTite Roofing System](#).
7. Finished lightweight concrete shall be a minimum thickness of **2 inches**, properly cured and dry with a moisture content less than **20%** by weight and falling toward a target equilibrium of **7%**, prior to the installation of the new [FiberTite Roofing System](#).
8. Finished surface(s) shall be treated per manufacturer's recommendations to ensure uniform curing and surface hardness.
9. All lightweight insulating concrete decks shall be vented using one way breather vents; large opening vents (**>6 inch diameter**) shall be installed at a rate of one vent per **1,500 sf (15 square)** and small opening vents (**<6 inch diameter**) shall be installed at a rate of one vent per **1,000 sf (10 square)** of installed membrane.
10. Roof vents shall be approved by [FiberTite Technical Customer Service](#), installed and flashed in strict accordance with [FiberTite](#) recommendations.
11. Mechanically Attached [FiberTite Roofing Systems](#), installed over lightweight concrete, shall be attached into the supporting structural decking. Lightweight concrete is not considered to be a structural component.
12. If a [FiberTite Roofing System](#) is to be installed using mechanical attachment of a base sheet, insulation or cover board, fastener withdrawal tests shall be performed to determine the suitability and appropriate fastener patterns.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment pattern
5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or prior to inclement weather.

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.
4. If the existing roof is coal tar pitch, has been repaired with coal tar pitch or has been re-saturated with coal tar pitch, a minimum **10-mil** polyethylene pitch vapor retarder shall be installed before recovering.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than **0.1875 of an inch** shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### E. Concrete (cont.)

3. When new insulation system is to be installed using an approved adhesive (cont.):
  - b. Joints between prestressed panel units and over bulb-tees shall be taped, stripped or grouted with an appropriate cementitious fill.
  - c. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to **0.5 inch** shall be acceptable.

#### F. Lightweight Insulating Concrete

1. All wet lightweight shall be removed and replaced with appropriate and/or compatible material.
2. Surface to receive new **FiberTite Roofing System** shall be smooth and free of ridges, depressions and other irregularities.
3. Repair any depressions, irregularities and/or excessive deflection with compatible material.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction **± 0.25 inch**. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and **1.5 inches** high and installed and anchored in such a manner to resist a force of **250 lbs. per linear foot** of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult **FiberTite Construction Details** or **FiberTite Technical Customer Services** for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made **100%** water tight during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of **3 inches**, and properly shingled to shed water.

#### B. Mechanically Attached Base Sheet

1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by **Seaman Corporation**.
2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with **FiberTite Fasteners**, spaced a maximum of **7 inches** on center through the minimum **3 inch** side laps and staggered at a maximum **7 inch on center** in two rows within the field of the sheet.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 6. Base Sheet (cont.)

#### B. Mechanically Attached Base Sheet (cont.)

3. The number of fasteners securing the base sheet shall be increased over the field spacing by **70%** in the perimeter and **160%** in the corners of the roof area.
4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be **0.375 of an inch**. Damaged corners shall be cut out and replaced with an insulation piece a minimum of **12" x 12"**. Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.
4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches** on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the **FiberTite Roofing System**.
2. The project foreman and or supervisor will be responsible for the daily execution of the **SAB** program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the **FiberTite Roofing System**.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a **100%** watertight installation at the end of each day.
2. All **FiberTite Roofing Systems** shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of **ASCE Standard 7**. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.
3. A **FiberTite Roofing System** may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### B. General (cont.)

5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of FiberTite membranes.
8. FiberTite Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be use to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Welding (cont.)

##### 3. Automatic Hot Air Machine Welding (cont.)

- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### D. Inspection

1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current [FiberTite Roofing Systems Specifications and Details](#).
3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of [FINAL INSPECTION FOR WARRANTY ACCEPTANCE](#).
4. Any deviation from pre-approved specifications and/or details requires written authorization from the [FTCS](#) prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the [FTCS](#).

#### E. T-Joint Cover Installation

1. Installation of [T-Joint Covers](#) is mandatory on all [FiberTite Membrane Systems](#) greater than nominal 50 mil, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum 1.5" defined crease along the T-Joint.
2. Install [T-Joint Covers](#), centered and aligned so edges are parallel to roof system seams.
3. The [T-Joint Cover](#) shall be 100% welded.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved [FiberTite](#) details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with [FTR-190e](#) Adhesive or [FTR-201](#) mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of 8 inches.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 9. Flashing (cont.)

- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- G. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

# 5.1 General Guide Specifications

## Part Three - Execution (cont.)

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, **100%** watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. **FiberTite** walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the **FiberTite** walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned **FiberTite** roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the **FiberTite** protection pads (**0.25" x 2' x 4'**), weld a **6" x 6"** strip of **FiberTite** membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of **2 inches** around the **90°** corner.
  - 3. Position the **FiberTite** protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the **FiberTite** roofing membrane.



# 5.1 General Guide Specifications



## Part Three - Execution (cont.)

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized **FiberTite** roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of **FiberTite** membrane over the base plates and cables to the **FiberTite** roofing. Contact **FTCS** for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the **FiberTite** membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the **FiberTite** membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a **100%** watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the **FiberTite Notice of Completion FTCS**.
- B. Upon receipt of the notice of completion, a **FTCS** representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with **Seaman Corporation** specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the **Final Inspection for Warranty Form**.
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved **Seaman Corporation/FiberTite Preinstallation Notice** will be issued.

## END of SECTION FTR GS 02/13

FiberTite® is a registered trademark of Seaman Corporation

FiberTite® Brite™ is a trademark of Seaman Corporation

WrapidFlash® is a registered trademark of Seaman Corporation

Kynar® is a registered trademark of Arkema, Inc.

DensDeck® and DensDeck® Prime are registered trademarks of Georgia-Pacific Gypsum LLC

RhinoBond® is a registered trademark of OMG, Inc. and is patent protected.

isoweld® is a registered trademark of SFS, Intec.

SECUROCK® is a registered trademark of United States Gypsum Company

Insta-Stik™ is a registered trademark of Dow Chemical Company

Olybond™ is a registered trademark of Olympic Manufacturing Group

# 5.2 Mechanically Attached FiberTite® Roofs



## FTR MA 02/13 - General Guide Specification for Installation of Mechanically Attached FiberTite® Roofing Systems

FTR MA 02/13 is provided as a general foundation for the design and installation of a quality, high performance mechanically attached FiberTite Roofing System.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install a Mechanically Attached FiberTite Roofing System as manufactured and supplied by:

Seaman Corporation  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a FiberTite Roofing System according to the guidelines set forth herein.
2. All applications and project specifications require review by FiberTite Technical Customer Services (FTCS) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice (FTR-PIN), must be completed, signed by an authorized roofing contractor, submitted to and approved by FTCS before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or Statement of Sound Roof Structure, to FTCS, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Moisture conditions in existing roof(s), new structural concrete or new lightweight insulating concrete which would impair or prohibit the desired performance of the new roof system.
3. Coal tar recover and/or direct contact with bituminous materials.
4. Positive slope to promote adequate drainage to avoid the potential damage to the substrate or components.
5. Roof areas subject to heavy or excessive mechanical traffic.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the Seaman Corporation/FiberTite chemical resistance publication.

# 5.2 Mechanically Attached FiberTite® Roofs



## Part One - General (cont.)

### D. Environmental Considerations (cont.)

3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with [EPA](#) and [OSHA](#) requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.

## 2. FiberTite® Roofing Systems (FTR) References

### A. FTR GS 02/13

### B. FiberTite Construction Details

### C. FiberTite Foreman's Manual

## 3. Quality Assurance

- A. [FiberTite Roofing Systems](#) shall be installed only by a roofing contractor, authorized by [Seaman Corporation](#) to install [FiberTite Roofing Systems](#) prior to bid and/or contract award. Herein, the term [Authorized FiberTite Roofing Contractor](#) is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of [FiberTite Roofing Systems](#) by [Seaman Corporation](#).
- C. [FiberTite Roofing Systems](#) shall be installed in accordance with the most current guide specifications ([FTR MA 02/13](#)) and details as amended and/or authorized by [FTCS](#) for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and [FTCS](#).
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the [Contract Documents](#) or [Manufacturer's Specifications](#) shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by [FTCS](#) for acceptance and approval.
- H. All field seams shall be visible and available to [FTCS](#) at the time of final inspection.

# 5.2 Mechanically Attached FiberTite® Roofs



## Part One - General (cont.)

### 4. Submittals

- A. The following information shall be submitted to **FTCS** for review before warranty consideration, material shipment or acceptance can be confirmed:
  - 1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  - 2. Complete list of accessories or materials not manufactured or expressly authorized for use in **FiberTite** literature.
  - 3. Dimensioned outline of the roof indicating all FTR-Detail references.
  - 4. Dimensioned shop drawings illustrating non-**FiberTite** details. Details that do not conform with standard **FiberTite** details shall be returned with appropriate recommendations.
- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by **FTCS**.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  - 4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  - 5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part One - General (cont.)

### 5. Delivery & Storage (cont.)

- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
2. Worker safety is paramount.
3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
4. Comply with all OSHA requirements for roof construction and fall protection where required.
5. Store flammable liquid and materials away from open sparks, flames and extreme heat.
6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

# 5.2 Mechanically Attached FiberTite® Roofs



## Part One - General (cont.)

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of [Seaman Corporation](#). A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. A [FiberTite Technical Customer Service Representative](#) shall inspect the completed [FiberTite Roofing](#) installation, and upon acceptance, [Seaman Corporation](#) shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. [Seaman Corporation](#) offers the following [FiberTite Induction Welded Roofing System](#) warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of [10 years](#). There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the [FiberTite](#) membrane.

# 5.2 Mechanically Attached FiberTite® Roofs



## Part Two - Products

### 1. General

- A. All products and components for the **FiberTite Roofing System** shall be supplied by **Seaman Corporation**.
- B. Components other than those manufactured and/or supplied by **Seaman Corporation** shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by **Seaman Corporation**, shall be considered unacceptable and their performance excluded from the warranty.
- C. **FiberTite Roofing Systems** may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact **FTCS** for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite Membrane

**FiberTite** is a nominal **36-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite** exceeds all requirements outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### B. FiberTite-XT Membrane

**FiberTite-XT** is a nominal **50-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **6.5-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XT**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XT** greatly exceeds all requirements outlined **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### C. FiberTite-SM Membrane

**FiberTite-SM** is a nominal **45-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-SM**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-SM** exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

**FiberTite-XTreme** is a nominal **90-mil** ketone ethylene ester (**KEE**), reinforced with a **12.5-oz yd<sup>2</sup>** woven polyester mat, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XTreme**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XTreme** greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Membranes.

# 5.2 Mechanically Attached FiberTite® Roofs



## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### E. FiberTite-FB Membrane

FiberTite, FiberTite-XT, and FiberTite-SM are all available in fleece back versions for adhered roofing. FiberTite-FB membranes have a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-FB, conforming to the physical properties as outlined in the associated data sheet(s). FiberTite-FB exceeds the physical property requirements and definitions as outlined in ASTM D7654 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing per the individual sub-assembly/base membrane listed above.

#### F. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### G. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated or non-insulated\*
3. Insulated Steel Decking
4. Existing smooth surfaced and/or granulated bituminous roof or existing single ply roof membrane\*
5. Existing aggregate surfaced bituminous roof with authorized insulation or coverboard
6. Exterior grade plywood; insulated or non-insulated\*
7. Cementitious fiber or Gypsum, insulated or non-insulated\*
8. Cellular, lightweight insulating concrete\*
9. Authorized base sheet with an adhered insulation/cover board assembly

(\*) A slip sheet or separation layer is recommended depending upon system type. The requirement for including and/or the selection of an appropriate slip sheet or base sheet will be determined by the system selected, surface texture of the substrate, environmental and/or fire classification requirements of the project roof assembly.

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.



# 5.2 Mechanically Attached FiberTite® Roofs

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### A. FTR Adhesives (cont.)

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

#### 2. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

#### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

#### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

#### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

#### 4. FiberTite Purlin Fasteners

To secure FiberTite membrane to the existing metal roofing system's structural members.

#### C. FTR Stress Plates

#### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure FiberTite membranes:

##### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from 18-gauge AZ-50 galvalume steel.

##### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

##### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

#### 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ-50 galvalume and have a flat/flush profile for use on rigid board surfaces.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### D. Additional Components

1. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
2. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTR-Premolded Flashing(s)**  
Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.
5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural Kynar® metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Two - Products (cont.)

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
3. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

#### C. Insulation

**NOTE:** For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:

##### a. Preapproved products

- i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: **2.0 pcf**. Minimum  
Meet requirements of **ASTM C1289**
- ii. FTR-Value XPS  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: **1.5 pcf**. Minimum  
Meet requirements of **ASTM D1621**
- iii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A Assembly**.  
Meet requirements of **ASTM C 473**  
**Georgia-Pacific Gypsum LLC DensDeck®Prime**  
or **United States Gypsum Company Secureck®**

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Adhesives for Insulation Attachment

##### 1. General

- a. Adhesive not specifically supplied by [Seaman Corporation](#) shall be listed and approved by [Factory Mutual Research](#) in conjunction with the specified insulation and specific substrate.
- b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under [FM-Global](#) requirements or acceptable third party laboratory.
- c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.

##### 2. Polyurethane

- a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.
- b. **Preapproved products**
  - i. FTR-601
  - ii. [FiberTite CR-20](#)

#### E. Base Sheets

1. Preapproved base sheet shall be installed, where specified and/or required, to provide a suitable surface for installation over or adhering the insulation and/or [FiberTite-FB Roofing System](#).
2. Acceptable products must be pre-approved or approved in writing by [Seaman Corporation](#) and comply with the following minimal characteristics and classification(s).
  - a. [FM](#) approved, [Class 1-90](#), wind uplift.
  - b. [ASTM D 4601 Type II](#) Asphalt Coated Glass-Fiber Base Sheet
  - c. [ASTM D 4897 Type II](#) Asphalt Coated Glass-Fiber Venting Base Sheet
  - d. Foil/Kraft Laminate w/min tensile of [54 lb/1"](#) according to [ASTM D 828](#)
3. **Preapproved products**
  - a. [GAF](#); [GAFLAS #80](#) Premium
  - b. [GAF](#); [GAFLAS Stratavent](#)

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with [FTR MA02/13](#); [General Guide Specifications for Installation of Mechanically Attached FiberTite Roofing Systems](#).

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 1. General (cont.)

- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the **FiberTite Roofing System**, roof insulation and specified components.
- C. Application of **Seaman Corporation/FiberTite** materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the **FiberTite Roofing System**.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the **FiberTite Roofing System**.
- B. **Seaman Corporation** requires fastener withdrawal values (**pull out tests**) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation and/or membrane roof system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the **FiberTite Roofing System** as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the **FiberTite Roofing System**.
- E. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

- 1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
- 2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
- 3. Panel profiles, (**ribs**) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
- 4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
- 5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" steel decking, (**decking less than 22-gauge**) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Roofing System**.

#### B. Structural Concrete (Poured and/or Precast)

- 1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### B. Structural Concrete (Poured and/or Precast) (cont.)

2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than **0.1875 of an inch** must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a **minimum 2 inches** thick wood plank or minimum **3/4 inch** plywood.
2. Wood decking that is less than **0.75 inch** will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "Non-FM Approved" wood decking (**wood plank less than 2 inches thick or plywood less than 0.75 inch thick**) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (**including wind up-lift**) according to specified design criteria and/or local building code requirements.
5. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment pattern
5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or prior to inclement weather.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.
4. If the existing roof is coal tar pitch, has been repaired with coal tar pitch or has been re-saturated with coal tar pitch, a minimum 10-mil polyethylene pitch vapor retarder shall be installed before recovering.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than 0.1875 of an inch shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
  - b. Joints between prestressed panel units and over bulb-tees shall be taped, stripped or grouted with an appropriate cementitious fill.
  - c. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to 0.5 inch shall be acceptable.

#### F. Lightweight Insulating Concrete

1. All wet lightweight shall be removed and replaced with appropriate and/or compatible material.
2. Surface to receive new **FiberTite Roofing System** shall be smooth and free of ridges, depressions and other irregularities.
3. Repair any depressions, irregularities and/or excessive deflection with compatible material.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 5. Wood Nailers (cont.)

- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

- 1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
- 2. Install no more than can be covered or made 100% water tight during the same working day.
- 3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
- 4. Base sheets shall be installed starting at the low point of the roof deck.
- 5. Base sheet shall be side lapped, a minimum of 3 inches, and properly shingled to shed water.

### 7. Roof Insulation

#### A. General

- 1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
- 2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
- 3. Install no more than can be covered during the same working day.
- 4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is 1.5 inches or less, taper 12 inches from the drain bowl. If insulation thickness exceeds 1.5 inches, taper 18 inches from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
- 5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of 12 inches on center.
- 6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Preliminary Attachment of Insulation

- 1. Insulation shall be applied to or installed over properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
- 2. All fasteners and stress plates for the mechanical attachment of insulation and/or cover board materials shall be [FTR Fasteners](#) as provided by [Seaman Corporation](#).
- 3. All fasteners and stress plates shall be [Factory Mutual Research](#) approved for mechanical attachment of insulation and comply with [FM Standard 4470](#) for corrosion resistance.



# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### B. Preliminary Attachment of Insulation (cont.)

4. General 1-90 attachment criteria require preliminary attachment for insulation and cover boards for mechanically attached membrane roofing systems. Insulation/cover board within the field of the roof requires 6 fasteners and stress plates per 4' x 8' insulation board.
  - a. Perimeter areas do not require an increase in the fastener density when the membrane is mechanically attached.
  - b. Corner areas do not require an increase in the fastener density when the membrane is mechanically attached.
5. Fasteners shall be installed straight, tight and perpendicular to the decking complying with minimum penetration requirements of specific deck types. Do not over torque fasteners.
6. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.
7. It may be possible to utilize adhesives for the preliminary attachment of the insulation layer(s) on non-steel deck projects. The insulation/coverboard manufacturer must recommend and approve the specific board and adhesive combination in writing prior to Seaman Corporation granting approval for this method of preliminary securement.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the FiberTite Roofing System.
2. The project foreman and or supervisor will be responsible for the daily execution of the SAB program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the FiberTite Roofing System.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All FiberTite Roofing Systems shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of ASCE Standard 7. Alternative designs may be determined using the criteria within Factory Mutual Research Loss Prevention Data.
3. A FiberTite Roofing System may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### B. General (cont.)

6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of FiberTite membranes.
8. FiberTite Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. FiberTite Membrane Mechanically Attached (Class 1 Decks)

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT and nom 90-mil FiberTite-XTreme.

1. Rolls of FiberTite Roofing (FTR) are to be positioned and installed straight and snug but not taut. Stretching of the membrane places undue stress on the mechanical fasteners.
2. If using custom fabricated rolls, align the paneled rolls to stagger the factory seams to prevent adjacent welds from falling on top of one another. Adjoining rolls shall overlap 5 inches and be properly shingled with the flow of water where possible. It is not uncommon and is acceptable for the factory laps to buck water.
3. The properly positioned membrane shall be attached using FTR Magnum Fasteners and Magnum Stress Plates installed through the membrane and insulation assembly and engage the structural decking.
4. The Magnum stress plates shall be installed straight and parallel to existing structural purlin members. All stress plates must set completely on the membrane allowing a minimum of 0.5 inch from the edge and allow sufficient room to facilitate welding.
5. Fastener row spacing and intervals shall be established to resist design pressures, determined in compliance with procedures outlined within the current publication of ASCE Standard 7. Alternative designs may be determined using the criteria within Factory Mutual Research Loss Prevention Data.
6. Table MA 02/13 lists general default attachment requirements for the field of the roof, as applied to structural roof decks referred to as Class 1; minimum ¾ inch plywood, minimum 22-gauge steel or minimum 3,000 psi concrete.
7. Perimeter zone and corner zone enhancement is required on all mechanically fastened roofing systems. Perimeters and corners are defined as follows:
  - a. Perimeter: 10% of the width of the roof areas or 40% of the height of the roof area, whichever is less to a minimum of 4 feet. Perimeter zones run parallel to all external roof edges including those with parapet walls.
  - b. Corner zones are the square intersection of perimeters.
  - c. Projects having variable roof levels shall treat the outer boundary of each level as a perimeter. Internal expansion joints, firewalls or adjoining building walls greater than 3 feet are not considered perimeter areas.
8. Perimeters and corners may be enhanced by:
  - a. Installing half rolls of membrane fastened as prescribed by project requirements.
  - b. Adding additional rows of fasteners through the top of the membrane system within the perimeter at prescribed intervals area and sealing with a 6 inch strip.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. FiberTite Membrane Mechanically Attached (Class 1 Decks) (cont.)

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT and nom 90-mil FiberTite-XTreme.

9. Individual project, insurance and building code requirements can vary substantially. FiberTite Technical Customer service offers design assistance and evaluation for determining acceptable fastener patterns.
10. For additional design/attachment options please contact FiberTite Technical Customer Services.

**Table MA 02/13 - 1**

Design Pressure 22 gauge steel or greater	Row Intervals / Lap Structure	Lap Fastening
<b>≤ -30 psf/FM1-60</b>		
80 ksi steel	95" on center - open	18" on center
33 ksi steel	95" on center - open	12" on center
<b>≤ -45 psf/FM1-90</b>		
80 ksi steel	95" on center - open	12" on center
33 ksi steel	69" on center - open	12" on center

#### D. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be use to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Welding (cont.)

#### 2. Hot Air Hand Welding (cont.)

- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

#### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### E. Inspection

- 1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
- 2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current FiberTite Roofing Systems Specifications and Details.
- 3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of FINAL INSPECTION FOR WARRANTY ACCEPTANCE.
- 4. Any deviation from pre-approved specifications and/or details requires written authorization from the FTCS prior to application to avoid any warranty disqualification.
- 5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the FTCS.

#### F. T-Joint Cover Installation

- 1. Installation of T-Joint Covers is mandatory on all FiberTite Membrane Systems greater than nominal 50 mil, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum 1.5" defined crease along the T-Joint.
- 2. Install T-Joint Covers, centered and aligned so edges are parallel to roof system seams.
- 3. The T-Joint Cover shall be 100% welded.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 10. Metal Flashing (cont.)

#### G. Pitch Pans

1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, **100%** watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  1. Roofing membrane to receive walkway material shall be clean and dry.

# 5.2 Mechanically Attached FiberTite® Roofs

## Part Three - Execution (cont.)

### 14. Walkways (cont.)

2. Cut and position the **FiberTite** walkway material as directed by the specifications or agreement.
3. Hot air weld the entire perimeter of the walk way to the previously cleaned **FiberTite** roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.

### C. Protection Pad Installation

1. Roofing membrane to receive protection pad material shall be clean and dry.
2. Prior to installing the **FiberTite** protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of **FiberTite** membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
3. Position the **FiberTite** protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the **FiberTite** roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized **FiberTite** roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of **FiberTite** membrane over the base plates and cables to the **FiberTite** roofing. Contact **FTCS** for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the **FiberTite** membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the **FiberTite** membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the **FiberTite Notice of Completion FTCS**.
- B. Upon receipt of the notice of completion, a **FTCS** representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with **Seaman Corporation** specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the **Final Inspection for Warranty Form**.
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved **Seaman Corporation/FiberTite Preinstallation Notice** will be issued.

**END of SECTION FTR MA 02/13**

# 5.3 Adhered FiberTite® Roofs



## FTR AD 02/13 - General Guide Specification for Installation of Adhered FiberTite® Roofing Systems

FTR AD 02/13 is provided as a general foundation for the design and installation of a quality, high performance adhered FiberTite Roofing System.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install an adhered FiberTite Roofing System as manufactured and supplied by:

Seaman Corporation  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a FiberTite Roofing System according to the guidelines set forth herein.
2. All applications and project specifications require review by FiberTite Technical Customer Services (FTCS) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice (FTR-PIN), must be completed, signed by an authorized roofing contractor, submitted to and approved by FTCS before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or Statement of Sound Roof Structure, to FTCS, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Moisture conditions in existing roof(s), new structural concrete or new lightweight insulating concrete which would impair or prohibit the desired performance of the new roof system.
3. Coal tar recover and/or direct contact with bituminous materials.
4. Positive slope to promote adequate drainage to avoid the potential damage to the substrate or components.
5. Roof areas subject to heavy or excessive mechanical traffic.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the Seaman Corporation/FiberTite chemical resistance publication.



# 5.3 Adhered FiberTite® Roofs



## Part One - General (cont.)

### D. Environmental Considerations (cont.)

3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with [EPA](#) and [OSHA](#) requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives ([FTR-490](#) or [FTR 390](#)) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.
8. The use of polystyrene insulation/coverboard assemblies for adhered roofing systems incorporating solvent borne adhesives shall also include a minimum 10-mil polyethylene solvent barrier between the insulation and coverboard.

## 2. FiberTite® Roofing Systems (FTR) References

### A. FTR GS 02/13

### B. FiberTite Construction Details

### C. FiberTite Foreman's Manual

## 3. Quality Assurance

- A. [FiberTite Roofing Systems](#) shall be installed only by a roofing contractor, authorized by [Seaman Corporation](#) to install [FiberTite Roofing Systems](#) prior to bid and/or contract award. Herein, the term [Authorized FiberTite Roofing Contractor](#) is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of [FiberTite Roofing Systems](#) by [Seaman Corporation](#).
- C. [FiberTite Roofing Systems](#) shall be installed in accordance with the most current guide specifications ([FTR MA 02/13](#)) and details as amended and/or authorized by [FTCS](#) for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and [FTCS](#).
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the [Contract Documents](#) or [Manufacturer's Specifications](#) shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by [FTCS](#) for acceptance and approval.
- H. All field seams shall be visible and available to [FTCS](#) at the time of final inspection.

## Part One - General (cont.)

### 4. Submittals

- A. The following information shall be submitted to **FTCS** for review before warranty consideration, material shipment or acceptance can be confirmed:
  - 1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  - 2. Complete list of accessories or materials not manufactured or expressly authorized for use in **FiberTite** literature.
  - 3. Dimensioned outline of the roof indicating all FTR-Detail references.
  - 4. Dimensioned shop drawings illustrating non-**FiberTite** details. Details that do not conform with standard **FiberTite** details shall be returned with appropriate recommendations.
- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by **FTCS**.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  - 4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  - 5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.

# 5.3 Adhered FiberTite® Roofs

## Part One - General (cont.)

### 5. Delivery & Storage (cont.)

- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
2. Worker safety is paramount.
3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
4. Comply with all OSHA requirements for roof construction and fall protection where required.
5. Store flammable liquid and materials away from open sparks, flames and extreme heat.
6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

# 5.3 Adhered FiberTite® Roofs



## Part One - General (cont.)

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of [Seaman Corporation](#). A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. A [FiberTite Technical Customer Service Representative](#) shall inspect the completed [FiberTite Roofing](#) installation, and upon acceptance, [Seaman Corporation](#) shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. [Seaman Corporation](#) offers the following [FiberTite Roofing System](#) warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of [10 years](#). There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the [FiberTite](#) membrane.

## Part Two - Products

### 1. General

- A. All products and components for the **FiberTite Roofing System** shall be supplied by **Seaman Corporation**.
- B. Components other than those manufactured and/or supplied by **Seaman Corporation** shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by **Seaman Corporation**, shall be considered unacceptable and their performance excluded from the warranty.
- C. **FiberTite Roofing Systems** may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact **FTCS** for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite Membrane

**FiberTite** is a nominal **36-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite** exceeds all requirements outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### B. FiberTite-XT Membrane

**FiberTite-XT** is a nominal **50-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **6.5-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XT**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XT** greatly exceeds all requirements outlined **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### C. FiberTite-SM Membrane

**FiberTite-SM** is a nominal **45-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-SM**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-SM** exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

**FiberTite-XTreme** is a nominal **90-mil** ketone ethylene ester (**KEE**), reinforced with a **12.5-oz yd<sup>2</sup>** woven polyester mat, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XTreme**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XTreme** greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Membranes.

#### E. FiberTite-FB Membrane

**FiberTite**, **FiberTite-XT**, and **FiberTite-SM** are all available in fleece back versions for adhered roofing. **FiberTite-FB** membranes have a heat bonded **4 oz.** polyester backing, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-FB**, conforming to the physical properties as outlined in the associated data sheet(s). **FiberTite-FB** exceeds the physical property requirements and definitions as outlined in **ASTM D7654** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing per the individual sub-assembly/base membrane listed above.

# 5.3 Adhered FiberTite® Roofs



## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### F. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### G. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated or non-insulated\*
3. Insulated Steel Decking
4. Existing smooth surfaced and/or granulated bituminous roof or existing single ply roof membrane\*
5. Existing aggregate surfaced bituminous roof with authorized insulation or coverboard
6. Exterior grade plywood; insulated or non-insulated\*
7. Cementitious fiber or Gypsum, insulated or non-insulated\*
8. Cellular, lightweight insulating concrete\*
9. Authorized base sheet with an adhered insulation/cover board assembly

(\*) A slip sheet or separation layer is recommended depending upon system type. The requirement for including and/or the selection of an appropriate slip sheet or base sheet will be determined by the system selected, surface texture of the substrate, environmental and/or fire classification requirements of the project roof assembly.

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-290 Adhesive

A VOC compliant solvent borne adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back) membranes to properly prepared and preauthorized horizontal substrates.

##### 3. FTR-390 Adhesive

A rubberized/asphalt water borne emulsion adhesive, VOC compliant, one side application (substrate only), designed for bonding FiberTite-FB (fleece back) membranes to properly prepared and preauthorized horizontal substrates.

##### 4. FTR-490 Adhesive

A polymeric water borne, VOC compliant adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back), FiberTite-SM and FiberTite Brite to properly prepared and preauthorized horizontal substrates.

# 5.3 Adhered FiberTite® Roofs

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives (cont.)

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 5. FiberTite CR-20 Adhesive

A dual component elastomeric polyurethane froth adhesive designed for bonding Fleece Back FiberTite membranes (satter application) to properly prepared and preauthorized horizontal substrates.

##### 6. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

##### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

##### 4. FiberTite Purlin Fasteners

To secure FiberTite membrane to the existing metal roofing system's structural members.

##### 5. FiberTite BS Fasteners

Coated fastener and stress plate to secure base sheets to gypsum and cellular lightweight insulating concrete decks.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure FiberTite membranes:

###### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from 18-gauge AZ-50 galvalume steel.

###### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

###### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

##### 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ-50 galvalume and have a flat/flush profile for use on rigid board surfaces.

# 5.3 Adhered FiberTite® Roofs



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### D. Additional Components

1. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
2. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTR-Premolded Flashing(s)**  
Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.
5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural Kynar® metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be No. 2 or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be 1.5 inches nominal.



# 5.3 Adhered FiberTite® Roofs

## Part Two - Products (cont.)

### 4. Related Materials

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult [N.R.C.A.](#) or other technical resource for appropriate guidelines.
2. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
3. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

#### C. Insulation

NOTE: For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the [FiberTite Roofing Systems](#) and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by [Seaman Corporation](#) and comply with the minimal characteristics and classification listed for the products below:

##### a. Preapproved products

- i. FTR-Value Polyisocyanurate  
[FM approved](#) rigid insulation meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A](#).  
Density: 2.0 pcf. Minimum  
Meet requirements of [ASTM C1289](#)
- ii. FTR-Value XPS  
[FM approved](#) rigid insulation meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A](#).  
Density: 1.5 pcf. Minimum  
Meet requirements of [ASTM D1621](#)
- iii. Gypsum Core Cover Board  
[FM approved](#) meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A Assembly](#).  
Meet requirements of [ASTM C 473](#)  
[Georgia-Pacific Gypsum LLC DensDeck®Prime](#)  
or [United States Gypsum Company Securock®](#)

#### D. Adhesives for Insulation Attachment

##### 1. General

- a. Adhesive not specifically supplied by [Seaman Corporation](#) shall be listed and approved by [Factory Mutual Research](#) in conjunction with the specified insulation and specific substrate.
- b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under [FM-Global](#) requirements or acceptable third party laboratory.
- c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Adhesives for Insulation Attachment (cont.)

##### 2. Polyurethane

a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.

##### b. Preapproved products

- i. FTR-601
- ii. FiberTite CR-20

##### 3. Hot Asphalt

a. Asphalt shall be [Type III](#) or [Type IV](#) steep asphalt, according to [ASTM D-312](#).

b. Asphalt shall be applied within [25°F](#) of the asphalt manufacturer's recommended Equiviscous Temperature (EVT). If the manufacturer does not supply the EVT, [Seaman Corporation](#) recommends a temperature range of [425°F](#) for mopping and [450°F](#) for mechanical spreaders. Asphalt applied within [25°F](#) of the EVT, under normal environmental conditions; will provide a nominal [23-25 pounds](#) of asphalt per [100 square feet](#).

c. The roofing contractor is responsible for maintaining the temperature tolerances at the kettle as well as the rooftop at all times.

d. Cold weather application can cause significant drops in the temperature of the asphalt during transport to the roof and points of application. Insulated equipment is recommended during cold weather applications.

e. All projects utilizing hot asphalt for insulation securement require written authorization, prior to the bidding process, by [Seaman Corporation](#).

#### E. Base Sheets

1. Preapproved base sheet shall be installed, where specified and/or required, to provide a suitable surface for installation over or adhering the insulation and/or [FiberTite-FB Roofing System](#).

2. Acceptable products must be pre-approved or approved in writing by [Seaman Corporation](#) and comply with the following minimal characteristics and classification(s).

- a. FM approved, Class 1-90, wind uplift.
- b. ASTM D 4601 Type II Asphalt Coated Glass-Fiber Base Sheet
- c. ASTM D 4897 Type II Asphalt Coated Glass-Fiber Venting Base Sheet
- d. Foil/Kraft Laminate w/min tensile of [54 lb/1"](#) according to [ASTM D 828](#)

##### 3. Preapproved products

- a. GAF; GAFGLAS #80 Premium
- b. GAF; GAFGLAS Stratavent

## Part Three - Execution

### 1. General

A. The "Authorized" roofing contractor shall ensure strict compliance with [FTR AD02/13; General Guide Specifications for Installation of Adhered FiberTite Roofing Systems](#).

# 5.3 Adhered FiberTite® Roofs



## Part Three - Execution (cont.)

### 1. General (cont.)

- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the **FiberTite Roofing System**, roof insulation and specified components.
- C. Application of **Seaman Corporation/FiberTite** materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the **FiberTite Roofing System**.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the **FiberTite Roofing System**.
- B. **Seaman Corporation** requires fastener withdrawal values (**pull out tests**) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation and/or membrane roof system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the **FiberTite Roofing System** as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the **FiberTite Roofing System**.
- E. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

- 1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
- 2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
- 3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
- 4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
- 5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" steel decking, (**decking less than 22-gauge**) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Roofing System**.

#### B. Structural Concrete (Poured and/or Precast)

- 1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### B. Structural Concrete (Poured and/or Precast) (cont.)

2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than **0.1875 of an inch** must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a **minimum 2 inches** thick wood plank or minimum **3/4 inch** plywood.
2. Wood decking that is less than **0.75 inch** will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" wood decking (**wood plank less than 2 inches thick or plywood less than 0.75 inch thick**) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (**including wind up-lift**) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.

#### D. Cementitious Fiber

1. Molded panels shall be installed in strict accordance with the manufacturer's installation requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
3. Vertical alignment between adjacent panels shall provide a uniform substrate. Alignment differences shall be no greater than **0.125 of an inch** and shall be leveled with cementitious grout.
4. Fastener withdrawal tests shall be performed on all cement fiber decking to determine suitability for and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.

#### E. Gypsum Concrete

1. Gypsum decks shall be installed in strict accordance with standard industry practice, the manufacturer's installation requirements and local building code requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
3. The gypsum fill shall be reinforced with wire mesh at a proper depth within the fill.
4. Finished decking shall maintain a minimum thickness (not including the form board) of **2 inches**.
5. Fastener withdrawal tests shall be performed on all gypsum decking to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### F. Lightweight Cellular Insulating Concrete

1. Lightweight cellular insulating concrete, herein after referred to as **LWIC**, shall be installed by trained applicators, approved in writing by the **LWIC** Manufacturer.
2. **LWIC** shall be installed in strict accordance with the **LWIC** manufacturer's installation requirements and standard industry practices.
3. The finished **LWIC** installation shall exhibit an oven dry density of a nominal **50 pounds per cubic foot** and a minimum compressive strength equal to or greater than **300 psi**.
4. Newly installed **LWIC** shall be protected from intrusion of free water/rain infiltration.
5. Intruded water must be removed prior to the installation of the new **FiberTite Roofing System**. Consult the appropriate **LWIC** manufacturer for methodology.
6. The **LWIC** shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
7. Finished **LWIC** shall be a minimum thickness of **2 inches**, properly cured and dry with a moisture content less than **20%** by weight and falling toward a target equilibrium of **7%**, prior to the installation of the new **FiberTite Roofing System**.
8. Finished surface(s) shall be treated using a Poly-Vinyl Alcohol (PVA) or other sealer per **LWIC** manufacturer's recommendations to ensure uniform curing and surface hardness.
9. It shall be the **Authorized Contractor's** responsibility to ensure that the **LWIC** is properly installed and complies with this specification. The application of **FiberTite** materials constitutes the contractors acceptance of the **LWIC**.
10. All **LWIC** decks shall be vented using one way breather vents; large opening vents (**>6 inch diameter**) shall be installed at a rate of one (1) vent per **1,500 sf (15 square)** and small opening vents (**<6 inch diameter**) shall be installed at a rate of one (1) vent per **1,000 sf (10 square)** of installed membrane.
11. Roof vents shall be approved by **FiberTite Technical Customer Service**, installed and flashed in strict accordance with **FiberTite** recommendations.
12. Mechanically attached **FiberTite Roofing Systems, LWIC**, shall be attached into the supporting structural decking. **LWIC** is not considered to be a structural component.
13. If a **FiberTite Roofing System** is to be installed using mechanical attachment of a base sheet, insulation or cover board, fastener withdrawal tests shall be performed to determine the suitability and appropriate fastener patterns.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment pattern
5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made 100% watertight at the end of the day or prior to inclement weather.

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.
4. If the existing roof is coal tar pitch, has been repaired with coal tar pitch or has been re-saturated with coal tar pitch, a minimum 10-mil polyethylene pitch vapor retarder shall be installed before recovering.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new [FiberTite Roofing System](#).
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than 0.1875 of an inch shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
  - b. Joints between prestressed panel units and over bulb-tees shall be taped, stripped or grouted with an appropriate cementitious fill.
  - c. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to 0.5 inch shall be acceptable.

#### F. Lightweight Insulating Concrete

1. All wet lightweight shall be removed and replaced with appropriate and/or compatible material.
2. Repair any depressions, irregularities and/or excessive deflection with compatible material.

## Part Three - Execution (cont.)

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made 100% water tight during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of 3 inches, and properly shingled to shed water.

#### B. Mechanically Attached Base Sheet

1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by [Seaman Corporation](#).
2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with [FiberTite Fasteners](#), spaced a maximum of 7 inches on center through the minimum 3 inch side laps and staggered at a maximum 7 inch on center in two rows within the field of the sheet.
3. The number of fasteners securing the base sheet shall be increased over the field spacing by 70% in the perimeter and 160% in the corners of the roof area.
4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

#### C. Base Sheet Adhered with Hot Asphalt

1. Hot asphalt shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
2. Base sheet shall be embedded into a fluid, continuous application of hot Type III steep asphalt at a minimum application rate of 25 lbs. per 100 square feet.
3. Base sheet shall be fully bonded to the substrate.

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### A. General (cont.)

2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be **0.375 of an inch**. Damaged corners shall be cut out and replaced with an insulation piece a minimum of **12" x 12"**. Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.
4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches** on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Mechanically Attached Insulation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. All fasteners and stress plates for the mechanical attachment of insulation and/or cover board materials shall be **FTR Fasteners** as provided by **Seaman Corporation**.
3. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
4. **1-90** attachment for insulation/cover board in the field of the roof requires 1 fastener and stress plate per **2 square feet** of insulation, when the top layer is **< 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
5. **1-90** attachment for insulation/cover board in the field of the roof requires 1 fastener and stress plate per **4 square feet** of insulation, when the top layer is **≥ 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
6. Roof insulation shall be fastened in accordance with the roof insulation manufacturer's recommendations and must be approved by the **FTCS**.
7. Adhered roof systems incorporating mechanically attached insulations and coverboards may require mechanically fastened perimeter and corner membrane systems to comply with guidelines articulated in **FM LPD 1-29**.
8. Fasteners shall be installed in accordance with manufacturer's recommendations, complying with minimum penetration requirements for specific deck types.
9. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.



# 5.3 Adhered FiberTite® Roofs

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### C. Adhered Insulation

General approvals for the attachment of the insulation layer(s) using adhesives in adhered roofing systems are restricted to non-steel deck projects. The insulation/coverboard manufacturer must recommend and approve the specific board and adhesive combination in writing prior to [Seaman Corporation](#) granting approval for this method of securement for steel deck applications.

##### 1. Hot Asphalt

- a. Hot asphalt shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
- b. Insulation shall be set into a continuous flood coat of hot [Type III](#) or [IV](#) steep asphalt applied to compatible substrate or properly attached base sheet/vapor retarder at a minimum application rate of [25 lbs. per 100 square feet](#).
- c. Insulation shall be fully bonded to the substrate with a maximum board size of [4' x 4'](#).
- d. Insulation shall be laid in such a manner to avoid squeezing hot asphalt between insulation joints. Exposed asphalt will require appropriate separation layer(s) prior to installing the new adhered [FiberTite Roofing System](#).
- e. Adhered insulation applications may require mechanical enhancement of exterior perimeter and or corner areas as outlined in [FM LPD 1-29](#).

##### 2. Polyurethane Adhesive

- a. Adhesive shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
- b. The minimum product temperature at time of application shall be [70°F](#).
- c. Adhesives shall not be applied when surface or ambient temperatures are below [40°](#) or above [110° F](#).
- d. Insulation shall be fully bonded to the substrate with a maximum board size of [4' x 4'](#).
- e. Insulation shall be set into a continuous [0.5 inch](#) bead of adhesive at a minimum rate of one linear foot of adhesive for every one square foot of insulation board.
- f. Adhesive rates are to be increased in roof perimeter and corner zones according to specific project requirements and manufacturer's design recommendations.
- g. Place the boards onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.
- h. A second walking will be required after [10 minutes](#) to ensure maximum contact and bond strength.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the [FiberTite Roofing System](#).
2. The project foreman and or supervisor will be responsible for the daily execution of the [SAB](#) program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the [FiberTite Roofing System](#).

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### A. Quality Control (cont.)

3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All **FiberTite Roofing Systems** shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of **ASCE Standard 7**. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.
3. A **FiberTite Roofing System** may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of **FiberTite** membranes.
8. **FiberTite Roofing Systems** shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Adhered Membrane

1. The authorized roofing contractor shall assume full responsibility for any and all irregularities, defects or quality issues that arise due to failure to following published installation guidelines for the proper installation of adhered **FiberTite** membrane roofing systems.

2. **FiberTite Membrane (Without Fleece Backing)**  
**Adhered with FTR-190e Bonding Adhesive**

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT and nom 90-mil FiberTite-XTreme.

- a. Position the **FiberTite Membrane** and fold the sheet to allow a workable exposure of the underside of the sheet.
- b. Apply a 100% continuous coat of bonding adhesive to the exposed bottom side of the membrane and a mirrored area of the substrate.
- c. The amount of membrane and substrate that can be coated with adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. Adhesive may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- e. Roller applied adhesive shall utilize a solvent resistant 3/8 inch nap roller, spreading the adhesive to ensure a smooth, even 100% coverage of the substrate and membrane.
- f. Spray applied adhesive must be spread out by roller to ensure a smooth, even 100% coverage of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.

\*Note: a squeegee can be used to "flatten" or spread globs and puddles of adhesive.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 2. FiberTite Membrane (Without Fleece Backing)

##### Adhered with FTR-190e Bonding Adhesive (cont.)

- g. Adhesive coverage should average 100 square feet per gallon of applied adhesive with a 50 square feet per gallon net coverage ( $\pm 10\%$ ) for the membrane and substrate combined.
- h. Allow the adhesive to dry or cure to a point of being tacky, but not stringy to the touch on both surfaces. Do not allow adhesive to completely dry out on either surface.
- i. When sufficiently cured, carefully maneuver the glued portion of the membrane onto the glued substrate surface, avoiding any wrinkles or air pockets.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap seam areas of the membrane. Contaminated areas will inhibit proper welding of the seams requiring a membrane patch or strip
- m. Do not use bad or marginal adhesives. Contact FTCS if the quality of the adhesive is suspect.

#### 3. FiberTite Membrane (Without Fleece Backing)

##### Adhered with FTR-490 Adhesive

\*Nom 45-mil or greater FiberTite-SM and nom 90-mil FiberTite-XTreme only.

- a. Over the properly installed/prepared substrate surface, position the FiberTite Membrane and fold the sheet to allow a workable exposure of the underside of the sheet.
- b. Apply a 100% continuous coat of bonding adhesive to the substrate.
- c. The amount of substrate that can be coated with adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. Adhesive may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- e. Roller applied adhesive shall utilize a solvent resistant 3/8 inch nap roller, spreading the adhesive to ensure a smooth, even 100% coverage of the substrate.
- f. Spray applied adhesive must be spread out by roller to ensure a smooth, even 100% coverage of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.
- g. Adhesive coverage should average 120 square feet per gallon ( $\pm 10\%$ ) of applied adhesive net coverage.
- h. Allow the adhesive to dry or cure to a point of being tacky, but not stringy to the touch on both surfaces. Do not allow adhesive to "dry out" completely on either surface.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 3. FiberTite Membrane (Without Fleece Backing) Adhered with FTR-490 Adhesive (cont.)

- i. When sufficiently cured, carefully maneuver the glued portion of the membrane onto the glued substrate surface, avoiding any wrinkles or air pockets.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of **3 inches**, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap seam areas of the membrane. Contaminated areas will inhibit proper welding of the seams requiring a membrane patch or strip
- m. Water borne adhesives (**FTR-490**) can be directly affected by moisture. Water based adhesives should not be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
- n. Do not use bad or marginal adhesives. Contact **FTCS** if the quality of the adhesive is suspect.

#### 4. FiberTite Fleece Back Membrane Adhered with FTR-290 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-Xt with fleece backing.

- a. For all **FB** membranes unroll approximately **30 feet** of the **FiberTite-FB** membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (**approx. 30'**) of substrate.
- b. Apply a **100% continuous** coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be above **40°F** and rising.
- e. **FTR-290 adhesive** may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- f. Roller applied adhesive shall utilize a solvent resistant **3/8 inch** nap roller.
- g. Spray applied adhesive must also be spread out by roller to ensure a smooth, even **100% coverage** of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.
- h. Allow the solvents in the adhesive to slightly dissipate/cure only to the point that the adhesive is sticky but still wet. **Do not allow adhesive to dry.**
- i. Adhesives shall not be installed over moist or wet substrates.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of **3 inches**, ensuring proper shingling of the membrane to shed water along the laps.

# 5.3 Adhered FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 4. FiberTite Fleece Back Membrane Adhered with FTR-290 Adhesive (cont.)

- l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
- m. Do not use bad or marginal adhesives. Contact **FTCS** if the quality of the adhesive is suspect.

#### 5. FiberTite Fleece Back Membrane Adhered with FTR-390 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT with fleece backing.

- a. For all FB membranes unroll approximately **30 feet** of the **FiberTite-FB** membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (**approx. 30'**) of substrate.
- b. Apply a **100% continuous** coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be **50°F** and rising with no chance of dropping below freezing during the subsequent **48 hour** time period.
- e. **FTR-390 adhesive** may be applied by using a heavy, **3/8 inch** nap roller or brush. Do not dump adhesive or pour from the cans.
- f. Roll or brush a smooth, even coat of adhesive over the substrate, ensuring **100% coverage** of the substrate.
- g. Allow the adhesive to become sticky but still wet. Do not allow a film to develop on the adhesive or allow adhesive to dry out.
- h. Water borne adhesives (**FTR-390**) can be directly affected by moisture. Water based adhesives shall not to be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
- i. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- j. Repeat the process for the remaining u-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of **3 inches**, ensuring proper shingling of the membrane to shed water along the laps.
- k. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
- l. Do not use bad or marginal adhesives. Contact **FTCS** if the quality of the adhesive is suspect.

#### 6. FiberTite Fleece Back Membrane Adhered with FTR-490 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT with fleece backing.

- a. For all FB membranes unroll approximately **30 feet** of the **FiberTite-FB** membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (**approx. 30'**) of substrate.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 6. FiberTite Fleece Back Membrane Adhered with FTR-490 Adhesive (cont.)

- b. Apply a 100% continuous coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be 40°F and rising.
- e. FTR-490 adhesive is to be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- f. Roller applied adhesive shall utilize a solvent resistant 3/8 inch nap roller.
- g. Adhesive must be rolled out to ensure a smooth, even 100% coverage of the substrate with no voids, skips, globs, puddles, or similar irregularities.
- h. Allow the adhesive to set up only to the point that the adhesive is slightly cured but still wet. Do not allow adhesive to skin or dry out.
- i. Water borne adhesives (FTR-490) can be directly affected by moisture. Water based adhesives shall not to be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap "seam" areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
- m. Do not use bad or marginal adhesives. Contact FTCS if the quality of the adhesive is suspect.

#### 7. FiberTite Fleece Back Membrane Adhered with FT/CR-20 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-Xt with fleece backing.

- a. For all FB membranes, un-roll and position two rolls of FiberTite-FB over the properly installed/prepared substrate.
- b. Ensure rolls are straight and the minimum 3 inch overlap between rolls is maintained.
- c. Peel (butterfly) the rolls back in the long direction, halfway upon themselves to expose the substrate and the underlying polyester fleece backing.
- d. Apply continuous spatter pattern of FiberTite CR-20 adhesive to the substrate between the rolls; dispensing the adhesive in a spattered pop-corn spray pattern.
- e. Spatter pattern shall achieve a nominal 80% coverage of textured coating at approximately 0.25 inch nominal thickness. The balance of the substrate will get coated as the adhesive spreads during the brooming and rolling process.
- f. Avoid spattering the back of the FB membrane.
- g. Do not allow adhesive to contaminate membrane overlaps. Use a sheet of insulation board to mask the spray area along adjoining membrane areas.

# 5.3 Adhered FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

7. **FiberTite Fleece Back Membrane Adhered with FT/CR-20 Adhesive (cont.)**
- h. Overspray may be cleaned immediately with acetone while the adhesive is still wet.
  - i. Fold/maneuver the FB membrane into the wet adhesive, (approximate open time for the adhesive is 5 to 10 minutes depending on environmental conditions) avoiding wrinkles or air pockets in the FB membrane.
  - j. Broom the membrane into the wet adhesive and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam covered lawn roller.
  - k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum 3 inches, ensuring proper shingling of the membrane the water along the laps.
  - l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, may impair proper welding of the seams and may require a membrane patch or stip.
  - m. Do not use bad or marginal adhesives. Contact FTCS if the quality of the adhesive is suspect.
8. **FiberTite Fleece Back Membrane Adhered in Hot Asphalt**
- \*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-Xt with fleece backing.
- a. For all FB membranes unroll approximately 30 feet of the FiberTite-FB membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate.
  - b. Apply a 100% continuous coat of adhesive to the substrate.
  - c. Correct Equiviscous Temperature (EVT) must be maintained at point of application. Type III steep asphalt shall be applied within 25°F of the asphalt manufacturer's recommended EVT. If the manufacturer does not supply the EVT, Seaman Corporation recommends a temperature of 425°F for mopping and 450°F for mechanical spreaders.
  - d. Asphalt is to be applied by either mopping or mechanical spreaders.
  - e. Adhesive must be spread to ensure a smooth, even 100% coverage of the substrate with no voids, skips, globs, puddles, or similar irregularities.
  - f. Do not allow asphalt to contaminate the lap seam areas of the membrane. Contaminated areas will inhibit proper welding of the seams.
  - g. Carefully maneuver the membrane into the adhesive on the substrate surface, avoiding any wrinkles or air pockets.
  - h. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
  - i. Repeat the process for the remaining u-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
  - j. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
  - k. Do not use bad or marginal adhesives. Contact FTCS if the quality of the adhesive is suspect.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Peel Stops for Adhered Roofing Systems

1. Seaman Corporation's standard Terms and Conditions for commercial warranties list 60-mph wind velocity as the first exclusion for wind events. Perimeter assurance or restraint must be provided for any modification to the standard commercial warranty.
2. Assurance or restraint is accomplished using rows of fasteners, installed parallel to exterior roof edges at a prescribed interval and fastener spacing to create a peel stop during a significant wind event.
3. Peel stops must be mechanically attached into or through the structural decking with rows of Magnum stress plates and fasteners, (or authorized alternate) at 12 inches on center. The peel stop is sealed by heat welding a nominal 6 inch strip of membrane over the fasteners.
4. Lightweight insulating concrete is generally not considered a structural component and peel stop fastening must penetrate through the lightweight into the structural component.
5. Peel Stop(s) are only required by Seaman Corporation on adhered projects requiring peak gust wind speed warranties greater than the default 60-mph articulated in the standard commercial warranty.
6. Although not required for standard commercial warranties, it is recommended that projects subject to the possibility of a significant wind event (hurricanes) should incorporate the use of peel stops in the roof system design.
7. The following are general guidelines for the use and inclusion of peel stops in adhered FiberTite Roofing Systems. Peel stop intervals are based upon the field pressure and are as follows:
  - a. Buildings with Design Velocity Pressure less than -45 psf (FM 1-90).  
No Peel Stops.
  - b. Buildings with Design Velocity Pressure greater than -45 psf (FM 1-90) but less than or equal to -52.5 (FM 1-105).  
One peel stop at 18 inches from all edges.
  - c. Buildings with Design Velocity Pressure greater than -52.5 (FM 1-105) but less than or equal to -60 psf (FM 1-120).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges.
  - d. Buildings with Design Velocity Pressure greater than: -60 (FM 1-1200 but less than or equal to -67.5 psf (FM 1-135).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges and the third peel stop at 6 feet from all edges.
  - e. Buildings with Non Class 1 decking, i.e. lightweight, wood, gypsum, and cementitious wood fiber do not default to the above requirements and require additional evaluation and engineering review by FTCS.

#### E. Welding

1. General
  - a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
  - b. All field seams must be clean and dry prior to initiating any field welding.



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Welding (cont.)

##### 1. General (cont.)

- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use **CLEAN WHITE COTTON** cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a **45°** angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be use to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a **1.5 inch** wide nozzle, to create a homogeneous weld, a minimum of **1.5 inches** in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum **1 inch** weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the **FiberTite Membrane** can be achieved with a variety of automatic welding equipment. Contact **FTCS** for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a **1.5 inch** wide nozzle, to create a homogeneous weld, a minimum of **1.5 inches** in width.

#### F. Inspection

- 1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
- 2. Ensure that all aspects of the installation (**sheet layout, attachment, welding, flashing details, etc.**) are in strict accordance with the most current **FiberTite Roofing Systems Specifications and Details**.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### F. Inspection (cont.)

3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of **FINAL INSPECTION FOR WARRANTY ACCEPTANCE**.
4. Any deviation from pre-approved specifications and/or details requires written authorization from the **FTCS** prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the **FTCS**.

#### G. T-Joint Cover Installation

1. Installation of **T-Joint Covers** is mandatory on all **FiberTite Membrane Systems** greater than nominal **50 mil**, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum **1.5"** defined crease along the T-Joint.
2. Install **T-Joint Covers**, centered and aligned so edges are parallel to roof system seams.
3. The **T-Joint Cover** shall be **100%** welded.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

# 5.3 Adhered FiberTite® Roofs

## Part Three - Execution (cont.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- G. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guidelines.
- B. Use primer when recommended by the manufacturer.

## Part Three - Execution (cont.)

### 12. Sealants (cont.)

- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.

# 5.3 Adhered FiberTite® Roofs



## Part Three - Execution (cont.)

### 15. Lightning Protection (cont.)

- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the FiberTite Notice of Completion FTCS.
- B. Upon receipt of the notice of completion, a FTCS representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with Seaman Corporation specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty Form.
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved Seaman Corporation/FiberTite Preinstallation Notice will be issued.

**END of SECTION FTR AD 02/13**

# 5.4 Ballast FiberTite® Roofs

## FTR BA 02/13 - General Guide Specification for Installation of Ballast FiberTite® Roofing Systems

FTR BA 02/13 is provided as a general foundation for the design and installation of a quality, high performance Ballast FiberTite Roofing System.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install a **FiberTite Roofing System** as manufactured and supplied by:  
**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a **FiberTite Roofing System** according to the guidelines set forth herein.
2. All applications and project specifications require review by **FiberTite Technical Customer Services (FTCS)** for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice (**FTR-PIN**), must be completed, signed by an authorized roofing contractor, submitted to and approved by **FTCS** before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or **Statement of Sound Roof Structure**, to **FTCS**, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Moisture conditions in existing roof(s), new structural concrete or new lightweight insulating concrete which would impair or prohibit the desired performance of the new roof system.
3. Coal tar recover and/or direct contact with bituminous materials.
4. Positive slope to promote adequate drainage to avoid the potential damage to the substrate or components.
5. Roof areas subject to heavy or excessive mechanical traffic.
6. Ballast applications require the contractor to provide and maintain temporary ballast as necessary, (row or spot ballast) keeping all field seams completely uncovered, including the stone mat, until completion of the final quality assurance inspection. Ballast shall provide sufficient protection against high winds.
7. Ballast should not be installed, without consulting a design professional, on areas with 2:12 slope or more.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the **Seaman Corporation/FiberTite** chemical resistance publication.

# 5.4 Ballast FiberTite® Roofs



## Part One - General (cont.)

### 1. Summary (cont.)

#### D. Environmental Considerations (cont.)

3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with [EPA](#) and [OSHA](#) requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490 or FTR 390) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.

### 2. FiberTite® Roofing Systems (FTR) References

#### A. FTR GS 02/13 General Guide Specifications

#### B. FiberTite Construction Details

#### C. FiberTite Foreman's Manual

### 3. Quality Assurance

- A. [FiberTite Roofing Systems](#) shall be installed only by a roofing contractor, authorized by [Seaman Corporation](#) to install [FiberTite Roofing Systems](#) prior to bid and/or contract award. Herein, the term [Authorized FiberTite Roofing Contractor](#) is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of [FiberTite Roofing Systems](#) by [Seaman Corporation](#).
- C. [FiberTite Roofing Systems](#) shall be installed in accordance with the most current guide specifications ([FTR GS 02/13](#)) and details as amended and/or authorized by [FTCS](#) for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and [FTCS](#).
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the [Contract Documents](#) or [Manufacturer's Specifications](#) shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by [FTCS](#) for acceptance and approval.
- H. All field seams shall be visible and available to [FTCS](#) at the time of final inspection.

# 5.4 Ballast FiberTite® Roofs

## Part One - General (cont.)

### 4. Submittals

- A. The following information shall be submitted to **FTCS** for review before warranty consideration, material shipment or acceptance can be confirmed:
  - 1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  - 2. Complete list of accessories or materials not manufactured or expressly authorized for use in **FiberTite** literature.
  - 3. Dimensioned outline of the roof indicating all FTR-Detail references.
  - 4. Dimensioned shop drawings illustrating non-**FiberTite** details. Details that do not conform with standard **FiberTite** details shall be returned with appropriate recommendations.
- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by **FTCS**.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  - 4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  - 5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.



# 5.4 Ballast FiberTite® Roofs

## Part One - General (cont.)

### 5. Delivery & Storage (cont.)

- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
2. Worker safety is paramount.
3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
4. Comply with all OSHA requirements for roof construction and fall protection where required.
5. Store flammable liquid and materials away from open sparks, flames and extreme heat.
6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.
6. During the construction process temporary ballast, especially in the perimeter and corner areas may be required to provide protection against high winds.

# 5.4 Ballast FiberTite® Roofs

## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### C. Additional Precautions (cont.)

7. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production or the quality of the finished installation. Contact FTCS for recommendations and acceptable tolerances.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of Seaman Corporation. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. A FiberTite Technical Customer Service Representative shall inspect the completed FiberTite Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

# 5.4 Ballast FiberTite® Roofs

## Part Two - Products

### 1. General

- A. All products and components for the **FiberTite Roofing System** shall be supplied by **Seaman Corporation**.
- B. Components other than those manufactured and/or supplied by **Seaman Corporation** shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by **Seaman Corporation**, shall be considered unacceptable and their performance excluded from the warranty.
- C. **FiberTite Roofing Systems** may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact **FTCS** for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite Membrane

**FiberTite** is a nominal **36-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite** exceeds all requirements outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### B. FiberTite-XT Membrane

**FiberTite-XT** is a nominal **50-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **6.5-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XT**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XT** greatly exceeds all requirements outlined **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### C. FiberTite-SM Membrane

**FiberTite-SM** is a nominal **45-mil** ketone ethylene ester (**KEE**) membrane, reinforced with a **5.0-oz yd<sup>2</sup>** knitted polyester fabric as manufactured by **Seaman Corporation**, under the trade name **FiberTite-SM**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-SM** exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

**FiberTite-XTreme** is a nominal **90-mil** ketone ethylene ester (**KEE**), reinforced with a **12.5-oz yd<sup>2</sup>** woven polyester mat, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XTreme**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XTreme** greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Membranes.

#### E. FiberTite-FB Membrane

**FiberTite**, **FiberTite-XT**, and **FiberTite-SM** are all available in fleece back versions for adhered roofing. **FiberTite-FB** membranes have a heat bonded **4 oz.** polyester backing, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-FB**, conforming to the physical properties as outlined in the associated data sheet(s). **FiberTite-FB** exceeds the physical property requirements and definitions as outlined in **ASTM D7654** Standard Specification for Ketone Ethylene Ester (**KEE**) Sheet Roofing per the individual sub-assembly/base membrane listed above.

# 5.4 Ballast FiberTite® Roofs

## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### F. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### G. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated
3. Insulated Steel Decking
4. Existing aggregate surfaced bituminous roof with authorized insulation or coverboard

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure FiberTite membranes:

###### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from 18-gauge AZ-50 galvalume steel.

###### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

###### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.

# 5.4 Ballast FiberTite® Roofs

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### C. FTR Stress Plates (cont.)

2. **FTR 3-in Metal Round Insulation Stress Plates**  
Finished with [AZ-50](#) galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

1. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
2. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTR-Premolded Flashing(s)**  
Injection molded vent stack, split [Wrapid Flash®](#) and inside/outside corner flashing using [FiberTite Vinyl](#) compound.
5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced [FiberTite Vinyl](#) membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural [Kynar®](#) metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead ([ribbon applied](#)) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

# 5.4 Ballast FiberTite® Roofs

## Part Two - Products (cont.)

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
3. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

#### C. Insulation

**NOTE:** For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:

##### a. Preapproved products

- i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 2.0 pcf. Minimum  
Meet requirements of **ASTM C1289**
- ii. FTR-Value XPS  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 1.5 pcf. Minimum  
Meet requirements of **ASTM D1621**
- iii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A Assembly**.  
Meet requirements of **ASTM C 473**  
**Georgia-Pacific Gypsum LLC DensDeck®Prime**  
or **United States Gypsum Company Securock®**

# 5.4 Ballast FiberTite® Roofs

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Ballast

1. Nominal 2.5 inch smooth river bottom stone consisting of a ballast gradation size #2, as specified in ASTM D 448.
2. Freeze/Thaw resistant concrete roof pavers, specifically designed and manufactured for use in ballasted membrane systems.
3. Heavyweight/Non-interlocking pavers weighing 22 pounds per square foot or more which are unrestrained by adjacent units.
4. Lightweight/Interlocking pavers weighing less than 22 pounds per square foot which incorporate physical dependency with adjacent pavers.
5. Concrete pavers shall be installed according to the manufacturer's most recent published specification.

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with FTR MA02/13; General Guide Specifications for Installation of Mechanically Attached FiberTite Roofing Systems.
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the FiberTite Roofing System, roof insulation and specified components.
- C. Application of Seaman Corporation/FiberTite materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the FiberTite Roofing System.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the FiberTite Roofing System.
- B. Seaman Corporation requires fastener withdrawal values (pull out tests) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation and/or membrane roof system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the FiberTite Roofing System as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the FiberTite Roofing System.
- E. The application of adhesives or hot asphalt directly to structural concrete, gypsum, Tectum, lightweight insulating concrete, existing smooth and/or granulated BUR materials may require sealing or priming with an appropriate elastomeric or asphalt primer prior to application.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "Non-FM Approved" steel decking, (decking less than 22-gauge) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Roofing System**.

#### B. Structural Concrete (Poured and/or Precast)

1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than **0.1875 of an inch** must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a **minimum 2 inches** thick wood plank or minimum **3/4 inch** plywood.
2. Wood decking that is less than **0.75 inch** will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "Non-FM Approved" wood decking (wood plank less than 2 inches thick or plywood less than **0.75 inch** thick) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (including wind up-lift) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.



## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### A. General

2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment pattern
5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or prior to inclement weather.

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.
4. If the existing roof is coal tar pitch, has been repaired with coal tar pitch or has been re-saturated with coal tar pitch, a minimum **10-mil** polyethylene pitch vapor retarder shall be installed before recovering.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than **0.1875 of an inch** shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
  - b. Joints between prestressed panel units and over bulb-tees shall be taped, stripped or grouted with an appropriate cementitious fill.
  - c. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### E. Concrete

4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to **0.5 inch** shall be acceptable.

#### F. Lightweight Insulating Concrete

1. All wet lightweight shall be removed and replaced with appropriate and/or compatible material.
2. Surface to receive new **FiberTite Roofing System** shall be smooth and free of ridges, depressions and other irregularities.
3. Repair any depressions, irregularities and/or excessive deflection with compatible material.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction **± 0.25 inch**. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and **1.5 inches** high and installed and anchored in such a manner to resist a force of **250 lbs. per linear foot** of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult **FiberTite Construction Details** or **FiberTite Technical Customer Services** for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made **100%** water tight during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of **3 inches**, and properly shingled to shed water.

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be **0.375 of an inch**. Damaged corners shall be cut out and replaced with an insulation piece a minimum of **12" x 12"**. Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### A. General (cont.)

4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches** on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Loose Laid Insulation

1. Insulation shall be applied to or installed over properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
2. Ballast applications require that the base layer of insulation, in multiple layer applications, be loose laid, staggering all joints. All insulation joints in subsequent layers shall also be staggered (**above and below**) within the multiple layers.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the **FiberTite Roofing System**.
2. The project foreman and or supervisor will be responsible for the daily execution of the **SAB** program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the **FiberTite Roofing System**.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a **100%** watertight installation at the end of each day.
2. All **FiberTite Roofing Systems** shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of **ASCE Standard 7**. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.
3. A **FiberTite Roofing System** may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above **40°F**. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of **FiberTite** membranes.
8. **FiberTite Roofing Systems** shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### B. General (cont.)

8. FiberTite Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Ballasted FiberTite Membrane

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT and nom 90-mil FiberTite-XTreme.

1. Ballast shall be loose laid and sufficient to provide 100% coverage of the FiberTite membrane.
2. A minimum 2 inch high gravel stop or approved ballast restraint shall be installed at exterior perimeter edges.
3. Perimeter shall be defined as a rectangular area along and parallel to the exterior edge of the roof. The width of the rectangle shall be determined as 10% of the building width or 40% of the building height, whichever is less to a minimum of 10'.
4. Corner shall be defined as a square external corner section of the roof. The width of the square shall be determined as 10% of the building width or 40% of the building height, whichever is less to a minimum of 10'.
5. When applicable, a special mechanical termination shall be constructed between areas of loose laid, mechanically attached and/or adhered roof sections.
6. The building's degree of exposure to the effects of wind will vary according to specific design wind speed, building height, parapets, permeability and geographic location.
7. For velocity pressures greater than 40 psf, coastal applications or buildings with significant openings, please consult FTCS.
  - a. Unroll and position the FiberTite Custom Panel onto the properly prepared substrate, insulation or coverboard.
  - b. Install the panel in a flat, relaxed position avoiding excess wrinkles and stretching.
  - c. Adjoining rolls shall overlap a minimum of 3 inches, properly shingled with the flow of water wherever possible.
  - d. Stagger the factory seams to prevent adjacent factory welds from falling on top of one another.
  - e. The field membrane shall be properly affixed to wood blocking or restrained in an approved manner at all roof perimeters, walls, expansion joints, curbs and penetrations having any one dimension greater than 24 inches in length.  
(See Current FiberTite Construction Details)
8. The following table is a list of minimum guidelines for ballasted FiberTite Roof Systems. Final design/approval shall rest with the local building official or within the local building code having jurisdiction over the project.

Design Pressure	Roof Area/Zone	Stone Ballast (2.5" #2)	Paver (non-interlocking)	Paver (interlocking)
≤ -20 psf	Field	10 psf	22 psf	10 psf
	Perimeter	12 psf	22 psf	10 psf
	Corner	15 psf	22 psf	10 psf
≤ -30 psf	Field	12 psf	22 psf	10 psf
	Perimeter	15 psf	22 psf	10 psf
	Corner	18 psf	22 psf	10 psf
≤ -40 psf	Field	15 psf	22 psf	Special Design only
	Perimeter	MA or FA only	MA or FA only	MA or FA only
	Corner	MA or FA only	MA or FA only	MA or FA only

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### E. Inspection

1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current FiberTite Roofing Systems Specifications and Details.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Inspection (cont.)

3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of **FINAL INSPECTION FOR WARRANTY ACCEPTANCE**.
4. Any deviation from pre-approved specifications and/or details requires written authorization from the **FTCS** prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the **FTCS**.

#### F. T-Joint Cover Installation

1. Installation of **T-Joint Covers** is mandatory on all **FiberTite Membrane Systems** greater than nominal **50 mil**, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum **1.5"** defined crease along the T-Joint.
2. Install **T-Joint Covers**, centered and aligned so edges are parallel to roof system seams.
3. The **T-Joint Cover** shall be **100%** welded.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- E. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- F. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **FiberClad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.



# 5.4 Ballast FiberTite® Roofs

## Part Three - Execution (cont.)

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the [FiberTite Notice of Completion FTCS](#).
- B. Upon receipt of the notice of completion, a [FTCS](#) representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with [Seaman Corporation](#) specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty ([punch list](#)) will be noted on the [Final Inspection for Warranty Form](#).
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved [Seaman Corporation/FiberTite Preinstallation Notice](#) will be issued.

**END of SECTION FTR BA 02/13**

# 5.5 Induction Welded FiberTite® Roofs



## FTR IW GS 07/15 - General Guide Specification for Installation of FiberTite® Induction Welded Roofing Systems

FTR IW GS 07/15 is provided as a general foundation for the design and installation of a quality, high performance mechanically attached [FiberTite Roofing System](#).

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install a [FiberTite Induction Welded Roofing System](#) as manufactured and supplied by:

**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a [FiberTite Induction Welded Roofing System](#).
2. All applications and project specifications require review by [FiberTite Technical Customer Services \(FTCS\)](#) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice ([FTR-PIN](#)), must be completed, signed by an authorized roofing contractor, submitted to and approved by [FTCS](#) before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or [Statement of Sound Roof Structure](#), to [FTCS](#), indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. [FiberTite Induction Welded Roofing System](#) can be installed in conventional low slope or metal building recover applications.
3. All [FiberTite Induction Welded Roofing System](#) require an approved coverboard.
4. All [FiberTite Roofing Membranes](#) without fleece backing may be used for a [Induction Welded Roofing System](#), including [FiberTite Brite](#).

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the [Seaman Corporation/FiberTite](#) chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with [EPA](#) and [OSHA](#) requirements as published by Local, State and Federal authorities.

# 5.5 Induction Welded FiberTite® Roofs



## Part One - General (cont.)

### 1. Summary (cont.)

5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when installing adhered roofing systems.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.

### 2. Induction Welded FiberTite® Roofing Systems References

- A. FTR GS 02/13
- B. FTB-K 02/13
- C. FiberTite Construction Details
- D. FiberTite Foreman's Manual
- E. Seaman Corporation Supplemental Instructions  
for Induction Welded Installations

### 3. Quality Assurance

- A. FiberTite Induction Welded Roofing Systems shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Induction Welded Roofing System prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Roofing Systems and the OMG RhinoBond® and/or SFS isoweld® installation tools.
- C. FiberTite Induction Welded Roofing Systems shall be installed in accordance with the most current guide specifications (FTR IW GS 07/15) and details as amended and/or authorized by FTCS for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the Contract Documents or Manufacturer's Specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval.

### 4. Submittals

- A. The following information shall be submitted to FTCS for review before warranty consideration, material shipment or acceptance can be confirmed:
  1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in FiberTite literature.
  3. Dimensioned outline of the roof indicating all FTR-Detail references.
  4. Dimensioned shop drawings illustrating non-FiberTite details.  
Details that do not conform with standard FiberTite details shall be returned with appropriate recommendations.

# 5.5 Induction Welded FiberTite® Roofs



## Part One - General (cont.)

### 4. Submittals (cont.)

- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by FTCS.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by FTCS.
  - 4. Written approval from FTCS confirming any accessories submitted, not manufactured or expressly approved in FiberTite literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  - 5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

- 1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
- 2. Worker safety is paramount.
- 3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
- 4. Comply with all OSHA requirements for roof construction and fall protection where required.
- 5. Store flammable liquid and materials away from open sparks, flames and extreme heat.

# 5.5 Induction Welded FiberTite® Roofs



## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### A. Safety (cont.)

6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. **extreme temperature, high winds, high humidity and moisture**) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact **FTCS** for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made **100%** watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local **EPA** requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. **FTCS** shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of **Seaman Corporation**. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

# 5.5 Induction Welded FiberTite® Roofs



## Part One - General (cont.)

### 8. Warranty

#### A. Inspections

1. A FiberTite Technical Customer Service Representative shall inspect the completed FiberTite Induction Welded Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Induction Welded Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

## Part Two - Products

### 1. General

- A. All products and components for the FiberTite Induction Welded Roofing System shall be supplied by Seaman Corporation.
- B. Components other than those manufactured and/or supplied by Seaman Corporation shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by Seaman Corporation, shall be considered unacceptable and their performance excluded from the warranty.
- C. FiberTite Induction Welded Roofing System may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact FTCS for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite Membrane

FiberTite is a nominal 36-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite, conforming to the physical properties as outlined in the associated data sheet. FiberTite exceeds all requirements outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

# 5.5 Induction Welded FiberTite® Roofs



## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### B. FiberTite-XT Membrane

FiberTite-XT is a nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-XT, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XT greatly exceeds all requirements outlined ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### C. FiberTite-SM Membrane

FiberTite-SM is a nominal 45-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-SM, conforming to the physical properties as outlined in the associated data sheet. FiberTite-SM exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

FiberTite-XTreme is a nominal 90-mil ketone ethylene ester (KEE), reinforced with a 12.5-oz yd<sup>2</sup> woven polyester mat, as manufactured by Seaman Corporation, under the trade name FiberTite-XTreme, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XTreme greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

#### E. FiberTite-FB Membrane

FiberTite, FiberTite-XT, and FiberTite-SM are all available in fleece back versions for adhered roofing. FiberTite-FB membranes have a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-FB, conforming to the physical properties as outlined in the associated data sheet(s). FiberTite-FB exceeds the physical property requirements and definitions as outlined in ASTM D7654 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing per the individual sub-assembly/base membrane listed above.

#### F. FiberTite Brite with Kynar® Membrane Roofing Membrane

FiberTite Brite is a 45-mil high performance Architectural Grade PVC membrane, reinforced with a 5.0-oz yd<sup>2</sup> woven polyester fabric and a Kynar® fluoropolymer top-finish as manufactured by Seaman Corporation, under the trade name FiberTite Brite, conforming to the physical properties as outlined in the associated data sheet. FiberTite Brite meets or exceeds all requirements outlined in ASTM D 4434 Standard Specification for Poly-Vinyl Chloride (PVC) Sheet Roofing.

#### G. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

# 5.5 Induction Welded FiberTite® Roofs

## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### H. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated
3. Insulated Steel Decking
4. Exterior grade plywood; insulated

### 3. Related Materials "By Seaman Corporation"

The following product(s)/material(s) shall be supplied by Seaman Corporation.

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent-borne adhesives are not compatible with the FiberTite Brite Kynar® op-Finish or polystyrene insulations. Georgia-Pacific's DensDeck® Prime and/or USG's SECUROCK® are the only approved cover-boards for use with FiberTite adhesives and subsequent adhered roofing systems. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-490 Adhesive

A polymeric water borne, VOC compliant adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back), FiberTite-SM and FiberTite Brite to properly prepared and preauthorized horizontal substrates.

##### 3. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

#### C. FTR Stress Plates

##### 1. FTR IW - RhinoBond® Plates

A 3" (75 mm) round, high-tensile, 22-gauge corrosion resistant steel plate with a KEE compatible polymeric coating used with approved fasteners to attach insulation boards to the structural deck and as a subsequent platform to induction weld the FiberTite Roofing Membrane.



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### C. FTR Stress Plates (cont.)

##### 2. FTR IW - isoweld® Plates

A 3" (75 mm) round, high-tensile, 22-gauge corrosion resistant steel plate with a KEE compatible polymeric coating used with approved fasteners to attach insulation boards to the structural deck and as a subsequent platform to induction weld the FiberTite Roofing Membrane.

##### 3. FTR-Magnum Series Barbed Stress Plates

When required/used to anchor membrane at roof transitions are 2.5" x 1.5" rectangular in dimension with 3/4" radial corners, manufactured from 20-gauge AZ-50 galvalume steel with a 0.25" diameter hole in its center. The plate has a raised reinforcement area and eight barbs.

OR

Used to anchor membrane at roof transitions are 2.375" round steel plate manufactured from 20 gauge galvalume steel with a 0.25" diameter hole in its center. The plate has a raised reinforcement area and barbs.

#### D. Additional Components

##### 1. FTR-101 Sealant

A single-component gun-grade polyether sealant to seal flashing termination.

##### 2. FiberClad Metal

To fabricate metal flashing, 4' x 10' sheets of 24-gauge hot-dipped G-90 steel, or 0.040 mil thick 3003H14 aluminum, laminated with a 0.020 mil polymeric coating. Can be painted with FTB Kynar® Primer followed by FTB Kynar® Touch Up Paint.

##### 3. FTR-Premolded Flashing(s)

Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.

##### 4. FTR Non-Reinforced Membrane

Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.

##### 5. FTR-Tuff Track Walkway & Protection Pads

High grade walk way/protection material with slip-resistant design.

##### 6. FTR-Termination Bar

Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.

##### 7. FiberTite Metal Fascia System

Two piece, snap-on, pre-formed, architectural Kynar® fluoropolymer metal edge systems.

##### 8. FTR-Value Insulation

Polyisocyanurate and extruded polystyrene flat or tapered insulation.

##### 9. FTR-601

Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.

##### 10. FTR-Coverboard

Gypsum or gypsum/cellulose core board.

##### 11. VaporTite

Self adhered bitumen and SBS polymeric Class I Vapor Barrier.

# 5.5 Induction Welded FiberTite® Roofs



## Part Two - Products (cont.)

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

#### B. Vapor Retarder

1. The use of a vapor retarder in a **FiberTite Induction Welded Roofing System** may require additional insulation attachment beyond the specified induction weld plates required for membrane attachment. Consult **FTCS** for guidelines.
2. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
3. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.

#### C. Insulation

NOTE: For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Induction Welded Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:

##### a. Preapproved products

- i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 2.0 pcf. Minimum  
Meet requirements of **ASTM C1289**
- ii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A Assembly**.  
Meet requirements of **ASTM C 473**  
Georgia-Pacific Gypsum LLC **DensDeck®Prime**  
or United States Gypsum Company **Securock®**

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with **FTR IW 07/15; General Guide Specifications for Installation of FiberTite Induction Welded Roofing System.**

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 1. General (cont.)

- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the **FiberTite Induction Welded Roofing System**, roof insulation and specified components.
- C. Application of **Seaman Corporation/FiberTite** materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the **FiberTite Roofing System**.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the **FiberTite Induction Welded Roofing System**.
- B. **Seaman Corporation** requires fastener withdrawal values (**pull out tests**) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the **FiberTite Induction Welded Roofing System** as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the **FiberTite Induction Welded Roofing System**.
- E. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.
- F. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

- 1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
- 2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
- 3. Panel profiles, (**ribs**) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
- 4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
- 5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "Non-FM Approved" steel decking, (**decking less than 22-gauge**) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Induction Welded System**.

#### B. Structural Concrete (Poured and/or Precast)

- 1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
- 2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Induction Welded Roofing System**.

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### B. Structural Concrete (Poured and/or Precast) (cont.)

3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than 0.1875 of an inch must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Induction Welded Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a minimum 2 inches thick wood plank or minimum 3/4 inch plywood.
2. Wood decking that is less than 0.75 inch will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "Non-FM Approved" wood decking (wood plank less than 2 inches thick or plywood less than 0.75 inch thick) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Roofing System**.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (including wind up-lift) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Induction Welded Roofing System**.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Re-roofing applications that require modification to the deck and/or insulation system should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Induction Welded Roofing System**.
5. All terminations of the **FiberTite Induction Welded Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Induction Welded Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made 100% watertight at the end of the day or prior to inclement weather.

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### C. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Induction Welded Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### D. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than **0.1875 of an inch** shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
  - b. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to **0.5 inch** shall be acceptable.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction **± 0.25 inch**. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and **1.5 inches** high and installed and anchored in such a manner to resist a force of **250 lbs. per linear foot** of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult **FiberTite Construction Details** or **FiberTite Technical Customer Services** for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made **100% water tight** during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of **3 inches**, and properly shingled to shed water.

# 5.5 Induction Welded FiberTite® Roofs



## Part Three - Execution (cont.)

### 6. Base Sheet (cont.)

#### B. Mechanically Attached Base Sheet

1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by **Seaman Corporation**.
2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with **FiberTite Fasteners**, spaced a maximum of 7" on center through the minimum 3" side laps and staggered at a maximum 7" on center in two rows within the field of the sheet.
3. The number of fasteners securing the base sheet shall be increased over the field spacing by 70% in the perimeter and 100% in the corners of the roof area.
4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.
4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is 1.5 inches or less, taper 12 inches from the drain bowl. If insulation thickness exceeds 1.5 inches, taper 18 inches from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of 12 inches on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Induction Welded Insulation Attachment – Plate Installation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. All fasteners and FTR IW stress plates for the mechanical attachment of insulation and/or cover board materials and subsequent induction bond of **FiberTite Roofing Membrane** shall be **FTR Fasteners** as provided by **Seaman Corporation**.
3. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
4. Install IW plates in a straight grid pattern using chalk lines. Proper plate layout will improve welding effectiveness.
5. General 1-90 attachment for insulation/cover board/membrane in the field of the roof requires one fastener and stress plate per 6' 2" of insulation.
6. Perimeter areas require a fastener tributary area decrease that is no greater than 60% of the field tributary per fastener.
7. Corner areas require a fastener tributary area decrease that is no greater than 40% of the field tributary per fastener.

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### B. Induction Welded Insulation Attachment – Plate Installation (cont.)

8. Fasteners shall be installed flush with the substrate and not overdriven to the point of promoting plate deformation.
9. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the [FiberTite Induction Welded Roofing System](#).
2. The project foreman and or supervisor will be responsible for the daily execution of the [SAB](#) program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the [FiberTite Induction Welded Roofing System](#).
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All [FiberTite Induction Welded Roofing System](#) shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of [ASCE Standard 7](#). Alternative designs may be determined using the criteria within [Factory Mutual Research Loss Prevention Data](#).
3. A [FiberTite Induction Welded Roofing System](#) may utilize either conventional roll goods or custom pre-welded panel rolls.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration when determining flashing lengths.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of [FiberTite](#) membranes.
8. [FiberTite Induction Welded Roofing System](#) shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris, and moisture.

#### C. FiberTite Membrane Installation

1. Unroll and position the [FiberTite](#) membrane and/or custom panel onto the properly prepared substrate, over the previously installed [FTR IW](#) plates.
2. Install the membrane in a flat, relaxed position avoiding excess wrinkles and stretching.
3. Adjoining rolls shall overlap a minimum of 2", properly shingled with the flow of water wherever possible.
4. Stager the factory seams in custom rolls to prevent adjacent factory welds from falling on top of one another.

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. FiberTite Membrane Installation (cont.)

5. The field membrane shall be properly affixed to wood blocking or restrained in an approved manner at all roof perimeters, walls, expansion joints, curbs and penetrations having any one dimension greater than 24" in length. Do not use FTR IW plates for transitional attachment. (See Current FiberTite Construction Details)

#### D. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with MEK or authorized alternative.
- d. Do not allow cleaning solvents to come in contact with the Kynar® top finish when using FiberTite Brite. Aggressive solvents will either mar or completely remove the top finish.
- e. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- f. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch.
- g. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.
- h. Keep the bottom of the induction tool and cooling magnets clean.
- i. Continuous operation of the induction welding process can promote overheating of the cooling magnets. Periodically cool the magnets using clean water to prevent melting and/or scarring of the FiberTite membrane.
- j. Follow the Induction Welder Tool manufacturer's recommendations for periodic cleaning and maintenance for the equipment.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.



# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Welding (cont.)

#### 3. Automatic Hot Air Machine Welding (cont.)

- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### 4. Induction Welding

- a. Calibrate the induction welding tool by making test welds with the FiberTite membrane and the IW stress plates. Make test welds using variable settings on the welder and then performing peel tests to examine continuity of the weld to the plate.
- b. The lowest energy setting that creates the most comprehensive and continuous bond is the preferred setting.
- c. All membrane shall be cleaned and dry prior to induction welding.
- d. Immediately upon completion of the induction weld cycle at each stress plate, place the cooling magnet directly centered over the welded membrane/plate assembly.
- e. Repeat the welding and magnet cooling process for each and every IW plate in the installation assembly.

#### E. Inspection

- 1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
- 2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current FiberTite Roofing Systems Specifications and Details.
- 3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of FINAL INSPECTION FOR WARRANTY ACCEPTANCE.
- 4. Any deviation from pre-approved specifications and/or details requires written authorization from the FTCS prior to application to avoid any warranty disqualification.
- 5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the FTCS.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 9. Flashing (cont.)

- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- E. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- F. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.

# 5.5 Induction Welded FiberTite® Roofs

## Part Three - Execution (cont.)

### 10. Metal Flashing (cont.)

#### F. Pitch Pans (cont.)

3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.
5. Pitch pans are maintenance items and shall not be considered as part of the **FiberTite** warranty.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the **(FTR-PIN)** is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, **100%** watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. **FiberTite** walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  1. Roofing membrane to receive walkway material shall be clean and dry.
  2. Cut and position the **FiberTite** walkway material as directed by the specifications or agreement.
  3. Hot air weld the entire perimeter of the walk way to the previously cleaned **FiberTite** roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.

# 5.5 Induction Welded FiberTite® Roofs



## Part Three - Execution (cont.)

### 14. Walkways (cont.)

#### C. Protection Pad Installation

1. Roofing membrane to receive protection pad material shall be clean and dry.
2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the FiberTite Notice of Completion FTCS.
- B. Upon receipt of the notice of completion, a FTCS representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with Seaman Corporation specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty Form.
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved Seaman Corporation/FiberTite Preinstallation Notice will be issued.

**END of SECTION FTR IW GS 07/15**

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## FTR SMRP 02/13 - General Guide Specification for Installation of FiberTite® Roofing Systems with a Simulated Metal Roofing Profile

FTR SMRP 02/13 is provided as a general foundation for the design and installation of a quality, high performance adhered FiberTite Roofing System with a decorative, simulated metal roofing profile.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install an adhered FiberTite Roofing System as manufactured and supplied by:

**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a FiberTite Roofing System according to the guidelines set forth herein.
2. All applications and project specifications require review by FiberTite Technical Customer Services (FTCS) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice (FTR-PIN), must be completed, signed by an authorized roofing contractor, submitted to and approved by FTCS before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or Statement of Sound Roof Structure, to FTCS, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Roof system composites that incorporate mechanically fastened insulations should in corporate adhered or bonded coverboards to prevent telegraphing of the insulation stress plates.
3. Roof areas subject to heavy or excessive mechanical traffic.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the Seaman Corporation/FiberTite chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with EPA and OSHA requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part One - General (cont.)

### D. Environmental Considerations (cont.)

6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490 or FTR 390) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.
8. The use of polystyrene insulation/coverboard assemblies for adhered roofing systems incorporating solvent borne adhesives shall also include a minimum 10-mil polyethylene solvent barrier between the insulation and coverboard.

## 2. FiberTite® Roofing Systems (FTR) References

- A. FTR GS 02/13
- B. FTR AD 02/13
- C. FiberTite Construction Details
- D. FiberTite Foreman's Manual

## 3. Quality Assurance

- A. FiberTite Roofing Systems shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Roofing Systems prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Roofing Systems by Seaman Corporation.
- C. FiberTite Roofing Systems shall be installed in accordance with the most current guide specifications (FTR MA 02/13) and details as amended and/or authorized by FTCS for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the Contract Documents or Manufacturer's Specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval.
- H. All field seams shall be visible and available to FTCS at the time of final inspection.

## 4. Submittals

- A. The following information shall be submitted to FTCS for review before warranty consideration, material shipment or acceptance can be confirmed:
  1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in FiberTite literature.
  3. Dimensioned outline of the roof indicating all FTR-Detail references.
  4. Dimensioned shop drawings illustrating non-FiberTite details. Details that do not conform with standard FiberTite details shall be returned with appropriate recommendations.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Notebook

### Part One - General (cont.)

#### 4. Submittals

- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by FTCS.
  - 2. Roofing Contractor's approved copy of submittal form FTR-PIN.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by FTCS.
  - 4. Written approval from FTCS confirming any accessories submitted, not manufactured or expressly approved in FiberTite literature are acceptable and compatible with the proposed FiberTite Roofing System.
  - 5. Material Safety Data Sheets (MSDS) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

#### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's Material Safety Data Sheets.
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

#### 6. Job Conditions

##### A. Safety

- 1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
- 2. Worker safety is paramount.
- 3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
- 4. Comply with all OSHA requirements for roof construction and fall protection where required.
- 5. Store flammable liquid and materials away from open sparks, flames and extreme heat.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### A. Safety (cont.)

6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. [extreme temperature](#), [high winds](#), [high humidity and moisture](#)) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact [FTCS](#) for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made [100%](#) watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local [EPA](#) requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. [FTCS](#) shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of [Seaman Corporation](#). A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.



# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part One - General (cont.)

### 8. Warranty

#### A. Inspections

1. A FiberTite Technical Customer Service Representative shall inspect the completed FiberTite Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

## Part Two - Products

### 1. General

- A. All products and components for the FiberTite Roofing System shall be supplied by Seaman Corporation.
- B. Components other than those manufactured and/or supplied by Seaman Corporation shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by Seaman Corporation, shall be considered unacceptable and their performance excluded from the warranty.
- C. FiberTite Roofing Systems may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact FTCS for additional information regarding compatible substrates.
- D. All specifications for SMRP roofing systems require review and authorization by FiberTite Technical Services prior to bid.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Two - Products (cont.)

### 2. Membrane

#### A. FiberTite-FB Membrane

FiberTite-FB is a nominal 36-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-FB, conforming to the physical properties as outlined in the associated data sheet. FiberTite-FB exceeds all requirements outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### B. FiberTite-XT FB Membrane

FiberTite-XT FB is a nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing as manufactured by Seaman Corporation, under the trade name FiberTite-XT FB, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XT FB greatly exceeds all requirements outlined ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### C. FiberTite-SM FB Membrane

FiberTite-SM FB is a nominal 45-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-SM FB, conforming to the physical properties as outlined in the associated data sheet. FiberTite-SM FB exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### D. FiberTite-XTreme FB Membrane

FiberTite-XTreme FB is a nominal 90-mil ketone ethylene ester (KEE), reinforced with a 12.5-oz yd<sup>2</sup> woven polyester mat and a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-XTreme FB, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XTreme FB greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

#### E. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### F. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated
3. Insulated Steel Decking
4. Exterior grade plywood; insulated or non-insulated\*
5. Cementitious fiber or Gypsum, insulated or non-insulated\*

(\*) A slip sheet or separation layer is recommended depending upon system type. The "requirement" for including and/or the selection of an appropriate slip sheet or base sheet will be determined by the system selected, surface texture of the substrate, environmental and/or fire classification requirements of the project roof assembly.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-290 Adhesive

A VOC compliant solvent borne adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back) membranes to properly prepared and preauthorized horizontal substrates.

##### 3. FTR-390 Adhesive

A rubberized/asphalt water borne emulsion adhesive, VOC compliant, one side application (substrate only), designed for bonding FiberTite-FB (fleece back) membranes to properly prepared and preauthorized horizontal substrates.

##### 4. FTR-490 Adhesive

A polymeric water borne, VOC compliant adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back), FiberTite-SM and FiberTite Brite to properly prepared and preauthorized horizontal substrates.

##### 5. FiberTite CR-20 Adhesive

A dual component elastomeric polyurethane froth adhesive designed for bonding Fleece Back FiberTite membranes (spatter application) to properly prepared and preauthorized horizontal substrates.

##### 6. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

##### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### C. FTR Stress Plates

1. **FTR-Magnum Series Barbed Stress Plates**  
Used to secure FiberTite membranes:
  - a. **FTR Magnum Plus**  
1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from 18-gauge AZ-50 galvalume steel.
  - b. **FTR Magnum R275**  
2 3/4" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.
  - c. **FTR Magnum 2S**  
2 3/8" Barbed Round Stress Plate; manufactured from 20-gauge galvanized steel.
2. **FTR 3-in Metal Round Insulation Stress Plates**  
Finished with AZ-50 galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

1. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
2. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTR-Premolded Flashing(s)**  
Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.
5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece, snap-on, pre-formed, architectural Kynar® fluoropolymer metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.

# 5.6 FiberTite® Roofs with Simulated Metal Profile

## Part Two - Products (cont.)

### D. Additional Components (cont.)

11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **Simulated Metal Roofing Profile (Rib)**  
The simulated metal roofing profile shall be a Co-Extruded Ornamental Profile with a **KEE** compatible heat-activated adhesive as provided by **Seaman Corporation**. Extruded profile shall be provided in **100 feet** continuous lengths and match fleece back membrane color.
13. **FTR-T-Joint Covers**  
Pre-cut **4"x4" 60 mil** non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

## 4. Related Materials

### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
3. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

### C. Insulation

**NOTE:** For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:
  - a. **Preapproved products**
    - i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: **2.0 pcf**. Minimum  
Meet requirements of **ASTM C1289**

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### C. Insulation (cont.)

2. Acceptable products must be preapproved in writing by [Seaman Corporation](#) and comply with the minimal characteristics and classification listed for the products below:
  - a. **Preapproved products (cont.)**
    - ii. FTR-Value XPS  
[FM approved](#) rigid insulation meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A](#).  
Density: [1.5 pcf](#). Minimum  
Meet requirements of [ASTM D1621](#)
    - iii. Gypsum Core Cover Board  
[FM approved](#) meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A Assembly](#).  
Meet requirements of [ASTM C 473](#)  
[Georgia-Pacific Gypsum LLC DensDeck®Prime](#)  
or [United States Gypsum Company Securock®](#)

#### D. Adhesives for Insulation Attachment

##### 1. General

- a. Adhesive not specifically supplied by [Seaman Corporation](#) shall be listed and approved by [Factory Mutual Research](#) in conjunction with the specified insulation and specific substrate.
- b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under [FM-Global](#) requirements or acceptable third party laboratory.
- c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.
- d. All adhesives shall be preauthorized by [Seaman Corporation](#).

##### 2. Polyurethane

- a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.
- b. **Preapproved products**
  - i. FTR-601
  - ii. FiberTite CR-20

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with [FTR RB 11/13; General Guide Specifications for Installation of FiberTite Roofing Systems](#).
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the [FiberTite Roofing System](#), roof insulation and specified components.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 1. General (cont.)

- C. Application of Seaman Corporation/FiberTite materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the FiberTite Roofing System.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the FiberTite Roofing System.
- B. Seaman Corporation requires fastener withdrawal values (pull out tests) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the FiberTite Roofing System as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the FiberTite Roofing System.
- E. The application of adhesives directly to structural concrete, gypsum or Tectum may require sealing or priming with an appropriate elastomeric or asphalt primer prior to application.
- F. Adhesives will not bond to wet structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

- 1. Steel decking shall conform to Factory Mutual (FM) guidelines for Class-1 insulated steel deck construction.
- 2. Steel decking shall be constructed of a minimum 22-gauge cold rolled steel sheets with factory G-90 galvanized coating.
- 3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
- 4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
- 5. Steel decking that is less than 22-gauge may be considered for application by Seaman Corporation. Fastener withdrawal tests shall be performed on all "Non-FM Approved" steel decking, (decking less than 22-gauge) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the FiberTite Roofing System.

#### B. Structural Concrete (Poured and/or Precast)

- 1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
- 2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
- 3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction) (cont.)

#### B. Structural Concrete (Poured and/or Precast) (cont.)

4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than 0.1875 of an inch must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new FiberTite Roofing System.

#### C. Wood

1. Wood decking shall conform to Factory Mutual (FM) guidelines for Class-1 impregnated wood decking. FM Class-1 decking consists of a minimum 2 inches thick wood plank or minimum 3/4 inch plywood.
2. Wood decking that is less than 0.75 inch will be considered for application by Seaman Corporation. Fastener withdrawal tests shall be performed on all "Non-FM Approved" wood decking (wood plank less than 2 inches thick or plywood less than 0.75 inch thick) to determine suitability and appropriate fastener patterns for the components of the new FiberTite Roofing System.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (including wind up-lift) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.

#### D. Cementitious Fiber

1. Molded panels shall be installed in strict accordance with the manufacturer's installation requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
3. Vertical alignment between adjacent panels shall provide a uniform substrate. Alignment differences shall be no greater than 0.125 of an inch and shall be leveled with cementitious grout.
4. Fastener withdrawal tests shall be performed on all cement fiber decking to determine suitability for and appropriate fastener patterns for the components of the new FiberTite Roofing System.

#### E. Gypsum Concrete

1. Gypsum decks shall be installed in strict accordance with standard industry practice, the manufacturer's installation requirements and local building code requirements.
2. Decking should be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
3. The gypsum fill shall be reinforced with wire mesh at a proper depth within the fill.
4. Finished decking shall maintain a minimum thickness (not including the form board) of 2 inches.
5. Fastener withdrawal tests shall be performed on all gypsum decking to determine suitability and appropriate fastener patterns for the components of the new FiberTite Roofing System.



# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Re-roofing applications that require modification to the deck and/or insulation system should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing System**.
5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or prior to inclement weather.

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
  - a. Cracks and or camber differentials greater than **0.1875 of an inch** shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### E. Concrete (cont.)

3. When new insulation system is to be installed using an approved adhesive (cont.):
  - b. Joints between prestressed panel units and over bulb-tees shall be taped, stripped or grouted with an appropriate cementitious fill.
  - c. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in hot asphalt or approved adhesives.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to 0.5 inch shall be acceptable.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made 100% water tight during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of 3 inches, and properly shingled to shed water.

#### B. Mechanically Attached Base Sheet

1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by [Seaman Corporation](#).
2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with [FiberTite Fasteners](#), spaced a maximum of 7 inches on center through the minimum 3 inch side laps and staggered at a maximum 7 inch on center in two rows within the field of the sheet.
3. The number of fasteners securing the base sheet shall be increased over the field spacing by 70% in the perimeter and 100% in the corners of the roof area.
4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be **0.375 of an inch**. Damaged corners shall be cut out and replaced with an insulation piece a minimum of **12" x 12"**. Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.
4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches** on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Mechanically Attached Insulation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. All fasteners and stress plates for the mechanical attachment of insulation and/or cover board materials shall be **FTR Fasteners** as provided by **Seaman Corporation**.
3. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
4. **1-90** attachment for insulation/cover board in the field of the roof requires **1 fastener and stress plate per 2 square feet** of insulation, when the top layer is **< 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
5. **1-90** attachment for insulation/cover board in the field of the roof requires **1 fastener and stress plate per 4 square feet** of insulation, when the top layer is **≥ 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
6. Roof insulation shall be fastened in accordance with the roof insulation manufacturer's recommendations and must be approved by the **FTCS**.
7. Adhered roof systems incorporating mechanically attached insulations and cover-boards may require mechanically fastened perimeter and corner membrane systems to comply with guidelines articulated in **FM LPD 1-29**.
8. Fasteners shall be installed in accordance with manufacturer's recommendations, complying with minimum penetration requirements for specific deck types.
9. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Two - Products (cont.)

### 7. Roof Insulation (cont.)

#### C. Adhered Insulation

General approvals for the attachment of the insulation layer(s) using adhesives in adhered roofing systems are restricted to non-steel deck projects. The insulation/coverboard manufacturer must recommend and approve the specific board and adhesive combination in writing prior to [Seaman Corporation](#) granting approval for this method of securement for steel deck applications.

##### 1. Polyurethane Adhesive

- a. Adhesive shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
- b. The minimum product temperature at time of application shall be 70°F.
- c. Adhesives shall not be applied when surface or ambient temperatures are below 40° or above 110° F.
- d. Insulation shall be fully bonded to the substrate with a maximum board size of 4' x 4'.
- e. Insulation shall be set into a continuous 0.5 inch bead of adhesive at a minimum rate of one linear foot of adhesive for every one square foot of insulation board.
- f. Adhesive rates are to be increased in roof perimeter and corner zones according to specific project requirements and manufacturer's design recommendations.
- g. Place the boards onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.
- h. A second walking will be required after 10 minutes to ensure maximum contact and bond strength.

### 8. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the [FiberTite Roofing System](#).
2. The project foreman and or supervisor will be responsible for the daily execution of the [SAB](#) program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the [FiberTite Roofing System](#).
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All [FiberTite Roofing Systems](#) shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of [ASCE Standard 7](#). Alternative designs may be determined using the criteria within [Factory Mutual Research Loss Prevention Data](#).
3. A [FiberTite Roofing System](#) may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### B. General (cont.)

5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of FiberTite membranes.
8. FiberTite Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Adhered Membrane

1. The authorized roofing contractor shall assume full responsibility for any and all irregularities, defects or quality issues that arise due to failure to following published installation guidelines for the proper installation of adhered FiberTite membrane roofing systems.

2. **FiberTite Fleece Back Membrane Adhered with FTR-290 Adhesive**

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT with fleece backing.

- a. For all FB membranes unroll approximately 30 feet of the FiberTite-FB membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate.
- b. Apply a 100% continuous coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be above 40°F and rising.
- e. FTR-290 adhesive may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- f. Roller applied adhesive shall utilize a solvent resistant 3/8 inch nap roller.
- g. Spray applied adhesive must also be spread out by roller to ensure a smooth, even 100% coverage of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.
- h. Allow the solvents in the adhesive to slightly dissipate/cure only to the point that the adhesive is sticky but still wet. Do not allow adhesive to dry.
- i. Adhesives shall not be installed over moist or wet substrates.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
- m. Do not use bad or marginal adhesives. Contact FTCS if the quality of the adhesive is suspect.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 3. FiberTite Fleece Back Membrane Adhered with FTR-490 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XL with fleece backing.

- a. For all FB membranes unroll approximately **30 feet** of the FiberTite-FB membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate.
- b. Apply a **100% continuous** coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be **40°F** and rising.
- e. **FTR-490 adhesive** is to be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
- f. Roller applied adhesive shall utilize a solvent resistant **3/8 inch** nap roller.
- g. Adhesive must be rolled out to ensure a smooth, even **100% coverage** of the substrate with no voids, skips, globs, puddles, or similar irregularities.
- h. Allow the adhesive to set up only to the point that the adhesive is slightly cured but still wet. Do not allow adhesive to skin or dry out.
- i. Water borne adhesives (**FTR-490**) can be directly affected by moisture. Water based adhesives shall not to be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of **3 inches**, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap "seam" areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
- m. Do not use bad or marginal adhesives. Contact **FTCS** if the quality of the adhesive is suspect.

#### 4. FiberTite Fleece Back Membrane Adhered with FT/CR-20 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XL with fleece backing.

- a. For all FB membranes, un-roll and position two rolls of FiberTite-FB over the properly installed/prepared substrate.
- b. Ensure rolls are straight and the minimum **3 inch** overlap between rolls is maintained.
- c. Peel (**butterfly**) the rolls back in the long direction, halfway upon themselves to expose the substrate and the underlying polyester fleece backing.
- d. Apply continuous spatter pattern of **FiberTite CR-20** adhesive to the substrate between the rolls; dispensing the adhesive in a spattered pop-corn spray pattern.
- e. Spatter pattern shall achieve a nominal **80% coverage** of textured coating at approximately **0.25 inch** nominal thickness. The balance of the substrate will get coated as the adhesive spreads during the brooming and rolling process.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

4. **FiberTite Fleece Back Membrane Adhered with FT/CR-20 Adhesive (cont.)**
  - f. Avoid spattering the back of the FB membrane.
  - g. Do not allow adhesive to contaminate membrane overlaps. Use a sheet of insulation board to mask the spray area along adjoining membrane areas.

#### D. Peel Stops for Adhered Roofing Systems

1. Seaman Corporation's standard Terms and Conditions for commercial warranties list 60-mph wind velocity as the first exclusion for wind events. Perimeter assurance or restraint must be provided for any modification to the standard commercial warranty.
2. Assurance or restraint is accomplished using rows of fasteners, installed parallel to exterior roof edges at a prescribed interval and fastener spacing to create a peel stop during a significant wind event.
3. Peel stops must be mechanically attached into or through the structural decking with rows of Magnum stress plates and fasteners, (or authorized alternate) at 12 inches on center. The peel stop is sealed by heat welding a nominal 6 inch strip of membrane over the fasteners.
4. Lightweight insulating concrete is generally not considered a structural component and peel stop fastening must penetrate through the lightweight into the structural component.
5. Peel Stop(s) are only required by Seaman Corporation on adhered projects requiring peak gust wind speed warranties greater than the default 60-mph articulated in the standard commercial warranty.
6. Although not required for standard commercial warranties, it is recommended that projects subject to the possibility of a significant wind event (hurricanes) should incorporate the use of peel stops in the roof system design.
7. The following are general guidelines for the use and inclusion of peel stops in adhered FiberTite Roofing Systems. Peel stop intervals are based upon the field pressure and are as follows:
  - a. Buildings with Design Velocity Pressure less than -45 psf (FM 1-90).  
No Peel Stops.
  - b. Buildings with Design Velocity Pressure greater than -45 psf (FM 1-90) but less than or equal to -52.5 (FM 1-105).  
One peel stop at 18 inches from all edges.
  - c. Buildings with Design Velocity Pressure greater than -52.5 (FM 1-105) but less than or equal to -60 psf (FM 1-120).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges.
  - d. Buildings with Design Velocity Pressure greater than: -60 (FM 1-1200) but less than or equal to -67.5 psf (FM 1-135).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges and the third peel stop at 6 feet from all edges.
  - e. Buildings with Non Class 1 decking, i.e. lightweight, wood, gypsum, and cementitious wood fiber do not default to the above requirements and require additional evaluation and engineering review by FTCS.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### E. Installation of Simulated Metal Roofing Profile

##### 1. Preparation

- a. The ornamental nature of the SMRP places a high value on the aesthetics of the finished roof system.
- b. The surface of the FiberTite fleece back membrane shall be clean and dry for the proper installation of the SMRP.



# 5.6 FiberTite® Roofs with Simulated Metal Profile

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Installation of Simulated Metal Roofing Profile (cont.)

##### 1. Preparation (cont.)

- c. The **SMRP** shall be installed in equidistant and parallel lengths – alignment errors will be visible at ground level.
- d. Best spacing of the **SMRP** is determined by using incremental distances between fleece back membrane laps.
- e. Installation of **SMRP** at overlaps will be nominally spaced at 69 inch intervals.
- f. Cut and/or preassemble **SMRP** to desired lengths.
- g. Segments of **SMRP** can be joined using a plastic dowel.
- h. Using washable chalk, snap/mark lines at predetermined/specified intervals between the overlaps.

Number of Interval Segments of SMRP's Between Overlaps	Nominal "on center" Distance Between SMRPs
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1	34.50"
2	23.00"
3	17.25"

##### 2. Application

- a. Unroll the FiberTite Rib Profile and place next to the chalk line or membrane overlap edge.
- b. Position **SMRP** so the bottom of the **SMRP** is lying flat and free to tension.
- c. Once Aligned, adhere the beginning (2" – 4") of the **SMRP** to the fleece back roofing membrane.
- d. Pull the **SMRP** taught, aligned to the chalk line to keep the profile straight for the welder.
- e. Using a hot air apparatus, adhere the **SMRP's** continuous, straight and parallel.
- f. Do not overheat the fleece back membrane while adhering the heat activated adhesive strip on the **SMRP**.
- g. Do not install the **SMRP** on or over welded overlaps.
- h. Do not rush the heat activation process and take time necessary to ensure aesthetics are achieved.
- i. **SMRP** splice joints and exposed ends can be detailed by using/welding small strips/pieces of the same colored membrane.

#### D. Inspection

1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
2. Ensure that all aspects of the installation (**sheet layout, attachment, welding, flashing details, etc.**) are in strict accordance with the most current **FiberTite Roofing Systems Specifications and Details**.
3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of **FINAL INSPECTION FOR WARRANTY ACCEPTANCE**.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Inspection (cont.)

4. Any deviation from pre-approved specifications and/or details requires written authorization from the **FTCS** prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the **FTCS**.

#### E. T-Joint Cover Installation

1. Installation of **T-Joint Covers** is mandatory on all **FiberTite Membrane Systems** greater than nominal **50 mil**, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum **1.5"** defined crease along the T-Joint.
2. Install **T-Joint Covers**, centered and aligned so edges are parallel to roof system seams.
3. The **T-Joint Cover** shall be **100%** welded.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 10. Metal Flashing (cont.)

- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- G. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, **100%** watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 13. Temporary Seals (cont.)

- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

# 5.6 FiberTite® Roofs with Simulated Metal Profile



## Part Three - Execution (cont.)

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the [FiberTite Notice of Completion FTCS](#).
- B. Upon receipt of the notice of completion, a [FTCS](#) representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with [Seaman Corporation](#) specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty ([punch list](#)) will be noted on the [Final Inspection for Warranty Form](#).
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved [Seaman Corporation/FiberTite Preinstallation Notice](#) will be issued.

**END of SECTION FTR SMRP 02/13**



# 5.7 FiberTite® Roof Over Existing Metal Roofing



## FTR MR 02/13 - General Guide Specification for Installation of Mechanically Attached FiberTite® Roofing Systems Installed Over Existing Metal Roofing

FTR-MR 02/13 is provided as a general foundation for the design and installation of a quality, high performance [FiberTite Roofing System](#) intended for use over existing standing seam metal roof systems.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install a Mechanically Attached [FiberTite Roofing System](#) as manufactured and supplied by:

**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a [FiberTite Roofing System](#) according to the guidelines set forth herein.
2. All applications and project specifications require review by [FiberTite Technical Customer Services \(FTCS\)](#) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice ([FTR-PIN](#)), must be completed, signed by an authorized roofing contractor, submitted to and approved by [FTCS](#) before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be requested to submit an engineering study, or [Statement of Sound Roof Structure](#), to [FTCS](#), indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. [FiberTite Roofing Systems](#) can be installed over the existing metal roof:
  - a. In conventional ([open](#)) overlap parallel to the purlins at a maximum spacing of [60 inches](#).
  - b. Using [FiberTite](#) membrane loose laid and through fastened ([closed lap](#)) to the purlins at a maximum of every [120](#); followed by a [6 inch](#) cover strip.
  - c. Using an induction weld alternative attachment method at purlin intervals no greater than [60 inches](#).
3. All [FiberTite Roofing Membranes](#) may be used for a Metal Recover Roofing System including [FiberTite Brite with Kynar®](#) fluoropolymer top finish.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the [Seaman Corporation/FiberTite](#) chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part One - General (cont.)

### D. Environmental Considerations (cont.)

4. Compliance with EPA and OSHA requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.

### 2. FiberTite® Roofing Systems (FTR) References

- A. FTR GS 02/13
- B. FTB-K 02/13
- C. FTR-RB 02/13
- D. FiberTite Construction Details
- E. FiberTite Foreman's Manual

### 3. Quality Assurance

- A. FiberTite Roofing Systems shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Roofing Systems prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Roofing Systems by Seaman Corporation.
- C. FiberTite Roofing Systems shall be installed in accordance with the most current guide specifications (FTR MR 02/13) and details as amended and/or authorized by FTCS for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the Contract Documents or Manufacturer's Specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval.

### 4. Submittals

- A. The following information shall be submitted to FTCS for review before warranty consideration, material shipment or acceptance can be confirmed:
  1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in FiberTite literature.
  3. Dimensioned outline of the roof indicating all FTR-Detail references.
  4. Dimensioned shop drawings illustrating non-FiberTite details. Details that do not conform with standard FiberTite details shall be returned with appropriate recommendations.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part One - General (cont.)

### 4. Submittals (cont.)

- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by **FTCS**.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  - 4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Roofing System**.
  - 5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between **50°F** and **80°F** prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

- 1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
- 2. Worker safety is paramount.
- 3. **FiberTite** is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
- 4. Comply with all **OSHA** requirements for roof construction and fall protection where required.
- 5. Store flammable liquid and materials away from open sparks, flames and extreme heat.



# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### A. Safety (cont.)

6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact FTCS for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of Seaman Corporation. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part One - General (cont.)

### 8. Warranty

#### A. Inspections

1. A FiberTite Technical Customer Service Representative shall inspect the completed FiberTite Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

## Part Two - Products

### 1. General

- A. All products and components for the FiberTite Roofing System shall be supplied by Seaman Corporation.
- B. Components other than those manufactured and/or supplied by Seaman Corporation shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by Seaman Corporation, shall be considered unacceptable and their performance excluded from the warranty.
- C. FiberTite Roofing Systems for metal roofing recover may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact FTCS for additional information regarding compatible substrates.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Two - Products (cont.)

### 2. Membrane

#### A. FiberTite Membrane

FiberTite is a nominal 36-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite, conforming to the physical properties as outlined in the associated data sheet. FiberTite exceeds all requirements outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### B. FiberTite-XT Membrane

FiberTite-XT is a nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-XT, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XT greatly exceeds all requirements outlined ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### C. FiberTite-SM Membrane

FiberTite-SM is a nominal 45-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-SM, conforming to the physical properties as outlined in the associated data sheet. FiberTite-SM exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

FiberTite-XTreme is a nominal 90-mil ketone ethylene ester (KEE), reinforced with a 12.5-oz yd<sup>2</sup> woven polyester mat, as manufactured by Seaman Corporation, under the trade name FiberTite-XTreme, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XTreme greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

#### E. FiberTite Brite with Kynar® Membrane Roofing Membrane

FiberTite Brite is a 45-mil high performance Architectural Grade PVC membrane, reinforced with a 5.0-oz yd<sup>2</sup> woven polyester fabric and a Kynar® fluoropolymer top-finish as manufactured by Seaman Corporation, under the trade name FiberTite Brite, conforming to the physical properties as outlined in the associated data sheet. FiberTite Brite meets or exceeds all requirements outlined in ASTM D 4434 Standard Specification for Poly-Vinyl Chloride (PVC) Sheet Roofing.

#### F. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, 50-mil FiberTite-XT, or 45-mil FiberTite Brite membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### G. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation"

The following product(s)/material(s) shall be supplied by Seaman Corporation.

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent-borne adhesives are not compatible with the FiberTite Brite Kynar® op-Finish or polystyrene insulations. Georgia-Pacific's DensDeck® Prime and/or USG's SECUROCK® are the only approved cover-boards for use with FiberTite adhesives and subsequent adhered roofing systems. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-490 Adhesive

A polymeric water borne, VOC compliant adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back), FiberTite-SM and FiberTite Brite to properly prepared and preauthorized horizontal substrates.

##### 3. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite Purlin Fasteners

Self drilling hardened fastener, used with FiberTite Stress Plates, for attaching FiberTite membranes to purlins.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

#### C. FTR Stress Plates

##### 1. FiberTite IW Plates

A 3" (75 mm) round, high-tensile, 22-gauge corrosion resistant steel plate with a KEE compatible polymeric coating used with approved fasteners to attach insulation boards to the structural deck and as a subsequent platform to induction weld the FiberTite Roofing Membrane.

##### 2. FTR-Magnum Series Barbed Stress Plates

A 2.5" x 1.5" rectangular in dimension with 3/4" radial corners, manufactured from 20-gauge AZ-50 galvalume steel with a 0.25" diameter hole in its center. The plate has a raised reinforcement area and eight barbs used with purlin fasteners to anchor FiberTite Roofing membranes to the roof system purlins.

##### 3. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ50 galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

##### 1. FTR-101 Sealant

A single-component gun-grade polyether sealant to seal flashing termination.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### D. Additional Components (cont.)

2. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTR-Premolded Flashing(s)**  
Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.
5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural Kynar® metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
12. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be No. 2 or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be 1.5 inches nominal.

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult N.R.C.A. or other technical resource for appropriate guidelines.
2. Use of a Vapor Retarder in the FiberTite Roofing System may require additional insulation attachment beyond the specified. Consult FTCS for guidelines.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Two - Products (cont.)

### 4. Related Materials

#### B. Vapor Retarder

3. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.
4. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

#### C. Insulation

NOTE: For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, in single or multiple layers of tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the [FiberTite Roofing Systems](#) and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by [Seaman Corporation](#) and comply with the minimal characteristics and classification listed for the products below:

##### a. Approved products

- i. FTR-Value Polyisocyanurate  
[FM approved](#) rigid insulation meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A](#).  
Density: [2.0 pcf](#). Minimum  
Meet requirements of [ASTM C1289](#)
- iii. Gypsum Core Cover Board  
[FM approved](#) meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A Assembly](#).  
Meet requirements of [ASTM C 473](#)  
[Georgia-Pacific Gypsum LLC DensDeck®Prime](#)  
or [United States Gypsum Company Securock®](#)

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with [FTR RB 11/13](#); [General Guide Specifications for Installation of FiberTite Roofing Systems](#).
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the [FiberTite Roofing System](#), roof insulation and specified components.
- C. Application of [Seaman Corporation/FiberTite](#) materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the [FiberTite Roofing System](#).
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Three - Execution (cont.)

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the **FiberTite Roofing System**.
- B. **Seaman Corporation** requires fastener withdrawal values (**pull out tests**) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the **FiberTite Roofing System** as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the **FiberTite Roofing System**.
- E. The application of adhesives directly to structural concrete, gypsum or Tectum may require sealing or priming with an appropriate elastomeric or asphalt primer prior to application.
- F. Adhesives will not bond to wet structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.
- H. **Re-roofing Guidelines**
  - 1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.
  - 2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
  - 3. Re-roofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
  - 4. Re-roofing applications that require modification to the deck and/or insulation system should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Roofing Systems**.
  - 5. All terminations of the **FiberTite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Roofing System**. This includes water from above, beside, below and beneath the new system.
- I. **Removal of Existing Roof System(s)**
  - 1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
  - 2. All deteriorated metal roof system panels shall be removed and replaced with like kind.
  - 3. All decking shall be inspected for proper attachment and excessive deflection which would compromise the uplift performance of the new mechanically attached **FiberTite Roofing System**.
  - 4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current, local building code requirements.
  - 5. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or at the first sign of inclement weather.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Three - Execution (cont.)

### 3. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 4. Roof Insulation

#### A. General

1. For the top leveling layer of insulation, the roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.
4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is 1.5 inches or less, taper 12 inches from the drain bowl. If insulation thickness exceeds 1.5 inches, taper 18 inches from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of 12 inches on center.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Installation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. Install in fill roof insulation to match the profile and height of the existing metal roof system's panels.
3. Loose lay the insulation between the raised profiles of the existing metal roof system panels with long dimensions running parallel to the raised metal profiles.
4. Install insulation to thickness to flatten the metal roof profile and support the coverboard.
5. FM does not accept polystyrene insulation as an in fill for metal building recover.
6. Install the authorized coverboard over the in-fill insulation.
7. Lay the coverboard with the long dimension running perpendicular to the infill insulation and metal roof profiles.



# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Three - Execution (cont.)

### 4. Roof Insulation (cont.)

#### B. Installation (cont.)

1. Install coverboard panels with minimum joint dimensions and tightly aligned. Maximum joint widths shall be **0.375 of an inch**. Damaged corners shall be cut out and replaced.
2. Mechanically attach the coverboard using a minimum of eight **FiberTite HD Fasteners** and **Stress Plates** per **4' x 8'** coverboard panel in the field, perimeter and corner areas.
3. For **Induction Welded Roofing System** – in addition to the installation attachment; install rows of purlin fasteners and **FTR IW Stress Plates 12 inches** on center into the purlins at maximum **60 inch** intervals.
4. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
5. Fasteners shall be installed flush with the substrate and not overdriven to the point of promoting plate deformation.
6. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.

### 5. Installation of FiberTite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the **FiberTite Roofing System**.
2. The project foreman and or supervisor will be responsible for the daily execution of the **SAB** program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the **FiberTite Roofing System**.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a **100% watertight** installation at the end of each day.
2. All **FiberTite Roofing Systems** shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of **ASCE Standard 7**. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.
3. A **FiberTite Roofing System** may utilize either conventional roll goods or custom pre-welded panel rolls or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above **40°F**. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of **FiberTite** membranes.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### B. General (cont.)

8. FiberTite Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Through Fastened (Closed Lap)

1. Loose lay the rolls of FiberTite Roofing (FTR) over the mechanically attached coverboard.
2. Align the rolls to the purlin system.  
The membrane should be positioned snug but not taut.
3. Align subsequent and adjoining custom rolls to stagger overlap 5 inches.
4. The properly positioned membrane shall be attached using FTR Purlin Fasteners and Magnum Stress Plates installed through the membrane, insulation assembly and existing metal roof panels to engage the structural purlin.
5. The Magnum stress plates shall be installed straight and centered to existing structural purlins.
6. Fastener row spacing and intervals shall be established to resist design pressures, determined in compliance with procedures outlined within the current publication of ASCE Standard. Alternative designs may be determined using the criteria within Factory Mutual Research Loss Prevention Data.
8. Metal re-cover projects require enhanced perimeter and corner enhancement.
9. The width of the perimeter area shall be calculated to be either ten (10%) percent of the width of the roof section or forty (40%) percent of the building or section height above ground, whichever is less to a minimum of 10 feet.
10. Perimeter and corner enhancement shall be accomplished by installing additional rows of fasteners through the top of the membrane system within the perimeter and corner zones, into the structural purlins.
11. The following fastener attachment patterns are for general construction when purlins are space at a nominal 5 feet on center and accommodate compliance with 1-90 membrane attachment:

#### Field

(All areas of the roof not considered perimeter or corners.)

Install FTR Purlin Fasteners and Stress Plates through the top of the membrane system in a straight line with fastener rows intervals no greater than 10 feet apart (every other purlin) with fasteners spaced no greater than 12 inches on center.  
Seal fastener rows by heat welding a nominal 6 inch cover strip over the fasteners.

#### Perimeter

(The outer parallel boundary of the roof section, including the eave, peak and rake edge.)

Install FTR Purlin Fasteners and Stress Plates through the top of the membrane system in a straight line with fastener rows intervals a maximum of 5 feet apart (every purlin) with fasteners spaced no greater than 12 inches on center.  
Seal fastener rows by heat welding a nominal 6 inch cover strip over the fasteners.

#### Corner

(the square area created when the perimeter area is overlapped at a directional change at the outer parallel boundary of the roof section or edge.)

Install FTR Purlin Fasteners and Stress Plates through the top of the membrane system in a straight line with fastener rows intervals a maximum of 5 feet apart (every purlin) with fasteners spaced no greater than 6 inches on center.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Conventional Lap Fastened (open lap)

1. Rolls of **FiberTite Roofing (FTR)** are to be positioned parallel to the purlins and installed straight and snug but not taut. Stretching of the membrane places undue stress on the mechanical fasteners.
2. Adjoining rolls shall overlap a minimum of **5 inches** but in no case more than **2 inches** beyond the purlin/attachment line of the lap.
3. Adjoining rolls shall be properly shingled with the flow of water where possible.
4. The properly positioned membrane shall be attached using **FTR Purlin Fasteners** and **Magnum Stress Plates** installed through the membrane and insulation assembly and engage the structural purlins.
5. The Magnum stress plates shall be installed straight and parallel to existing structural purlin members. All stress plates must set completely on the membrane allowing a minimum of **0.5 inch** from the edge and allow sufficient room to facilitate welding.
6. Fastener row spacing and intervals shall be established to resist design pressures, determined in compliance with procedures outlined within the current publication of **ASCE Standard**.
7. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.

#### E. FiberTite Membrane Installation - Induction Weld

1. Unroll and position the **FiberTite** membrane and/or Custom Panel onto the properly prepared substrate, covering the previously installed induction plates.
2. Install the membrane in a flat, relaxed position avoiding excess wrinkles and stretching.
3. Adjoining rolls shall overlap a minimum of **2 inches**, properly shingled with the flow of water wherever possible.
4. Stagger the factory seams in custom rolls to prevent adjacent factory welds from falling on top of one another.
5. The field membrane shall be properly affixed to wood blocking or restrained in an approved manner at all roof perimeters, walls, expansion joints, curbs and penetrations having any one dimension greater than **24 inches** in length. Do not use **IW** plates for transitional attachment. (See **Current FiberTite Construction Details**)

#### D. Welding

##### 1. General

- a. All field seams exceeding **10 feet** in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with **MEK** or authorized alternative.
- d. Do not allow **MEK** or any other cleaning solvents to come in contact with the **Kynar®** top finish when using **FiberTite Brite**. Aggressive solvents will either mar or completely remove the top finish.
- e. Use **CLEAN WHITE COTTON** cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Welding (cont.)

##### 1. General

- f. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch.
- g. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.
- h. Keep the bottom of the induction tool and cooling magnets clean.
- i. Continuous operation of the induction welding process can promote overheating of the cooling magnets. Periodically cool the magnets using clean water to prevent melting and/or scarring of the FiberTite membrane.
- j. Follow the Induction Welder Tool manufacturer's recommendations for periodic cleaning and maintenance for the equipment.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

##### 4. Induction Welding

- a. Calibrate the induction welding tool by making test welds with the FiberTite membrane and the FTR IW stress plates. Make test welds using variable settings on the welder and then performing peel tests to examine continuity of the weld to the plate.
- b. The lowest energy setting that creates the most comprehensive and continuous bond is the preferred setting.
- c. All membrane shall be cleaned and dry prior to induction welding.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Welding (cont.)

#### 4. Induction Welding (cont.)

- d. Immediately upon completion of the induction weld cycle at each stress plate, place the cooling magnet directly centered over the welded membrane/plate assembly.
- e. Repeat the welding and magnet cooling process for each and every FTR IW plate in the installation assembly.

#### E. Inspection

- 1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
- 2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current [FiberTite Roofing Systems Specifications and Details](#).
- 3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of [FINAL INSPECTION FOR WARRANTY ACCEPTANCE](#).
- 4. Any deviation from pre-approved specifications and/or details requires written authorization from the [FTCS](#) prior to application to avoid any warranty disqualification.
- 5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the [FTCS](#).

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved [FiberTite](#) details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with [FTR-190e](#) Adhesive or [FTR-201](#) mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using [FTR-201](#) as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with [FiberTite](#) pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. ([Refer to the related trade for the technical specification.](#))

# 5.7 FiberTite® Roof Over Existing Metal Roofing



## Part Three - Execution (cont.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.

### G. Pitch Pans

- 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
- 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
- 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
- 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guidelines.
- B. Use primer when recommended by the manufacturer.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Three - Execution (cont.)

### 12. Sealants (cont.)

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.

# 5.7 FiberTite® Roof Over Existing Metal Roofing

## Part Three - Execution (cont.)

### 15. Lightning Protection (cont.)

- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the FiberTite Notice of Completion FTCS.
- B. Upon receipt of the notice of completion, a FTCS representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with Seaman Corporation specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty Form.
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved Seaman Corporation/FiberTite Preinstallation Notice will be issued.

**END of SECTION FTR MR 02/13**



# 5.8 FiberTite® Multi-Ply Roofing Systems



## FTR AD 02/13 - General Guide Specification for Installation of FiberTite® Multi-Ply Roofing System

FTR-MR 02/13 is provided as a general foundation for the design and installation of a quality, high performance [FiberTite Multi-Ply Roofing System](#) incorporating [FiberTite Fleece Back Membranes](#) and [FiberTite SBS Base Plies](#).

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install an adhered [FiberTite Multi-Ply Roofing System](#) as manufactured and supplied by:

**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a [FiberTite Multi-Ply Roofing System](#) according to the guidelines set forth herein.
2. All applications and project specifications require review by [FiberTite Technical Customer Services \(FTCS\)](#) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice ([FTR-PIN](#)), must be completed, signed by an authorized roofing contractor, submitted to and approved by [FTCS](#) before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or [Statement of Sound Roof Structure](#), to [FTCS](#), indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. [FiberTite Multi-Ply Roofing Systems](#) are principally engineered for low slope  $\leq 0.5:12$  roof construction and require positive drainage.
3. [FiberTite Multi-Ply Roofing Systems](#) are applicable to new and/or re-roofing projects that include the complete removal of existing roofing and preapproved recover construction.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the [Seaman Corporation/FiberTite](#) chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part One - General (cont.)

### D. Environmental Considerations (cont.)

4. Compliance with EPA and OSHA requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.

### 2. FiberTite® Roofing Systems (FTR) References

- A. FTR GS 02/13
- B. FTR AD 02/13
- C. FiberTite Construction Details
- D. FiberTite Foreman's Manual

### 3. Quality Assurance

- A. FiberTite Multi-Ply Roofing Systems shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Roofing Systems prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Multi-Ply Roofing Systems by Seaman Corporation.
- C. FiberTite Multi-Ply Roofing Systems shall be installed in accordance with the most current guide specifications (FTR-MR 02/13) and details as amended and/or authorized by FTCS for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the Contract Documents or Manufacturer's Specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval.

### 4. Submittals

- A. The following information shall be submitted to FTCS for review before warranty consideration, material shipment or acceptance can be confirmed:
  1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in FiberTite literature.
  3. Dimensioned outline of the roof indicating all FTR-Detail references.
  4. Dimensioned shop drawings illustrating non-FiberTite details. Details that do not conform with standard FiberTite details shall be returned with appropriate recommendations.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part One - General (cont.)

### 4. Submittals (cont.)

- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
1. Most recent published technical literature and guide specifications issued by FTCS.
  2. Roofing Contractor's approved copy of submittal form [FTR-PIN](#).
  3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by FTCS.
  4. Written approval from FTCS confirming any accessories submitted, not manufactured or expressly approved in [FiberTite](#) literature are acceptable and compatible with the proposed [FiberTite Roofing System](#).
  5. Material Safety Data Sheets ([MSDS](#)) relating to all products, chemicals and solvents.
  6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's [Material Safety Data Sheets](#).
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents and adhesives.
2. Worker and customer safety is paramount when working with hot asphalt and/or propane torches.
3. Comply with all [OSHA](#) requirements for roof construction and fall protection where required.
4. **Torch safety (where required)**
  - a. Crew members handling torches shall be trained by an [Authorized Certified Roofing Torch Applicator \(CERTA\)](#) Trainer.

# 5.8 FiberTite® Multi-Ply Roofing Systems

## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### A. Safety (cont.)

4. **Torch safety (cont.)**
  - b. Be certified according to CERTA torch safety guidelines as published by the [National Roofing Contractors Association \(NRCA\)](#).
  - c. Designate one person on crew to perform a daily firewatch after roofing material application has been suspended for the day.
5. **Kettles and Tankers**
  - a. Kettles and tankers shall be equipped with accurate, fully readable thermometers.
  - b. Do not heat asphalt above its flash point.
  - c. Heating must be no more than 25°F below the EVT and no more than 25°F above the EVT.
  - d. If EVT information is not provided, maximum heating temperature shall be 525°F (246°C).
6. Store flammable liquid and materials away from open sparks, flames and extreme heat.
7. Take necessary precautions when using solvents and adhesives near fresh air intakes.
8. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. [extreme temperature](#), [high winds](#), [high humidity](#) and [moisture](#)) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact [FTCS](#) for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. Temperature Restrictions – Asphalt
  - a. At ambient temperatures of 40°F and below, special precautions must be taken to ensure that the specified [Type III](#) or [IV](#) asphalt maintains a minimum acceptable 400°F at the point of sheet application.
  - b. The asphalt must not be overheated to compensate for cold conditions.
  - c. The use of insulated handling equipment is required.
  - d. Hot luggers, mop carts and kettle to roof supply lines shall be insulated.
4. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
5. Comply with local [EPA](#) requirements as published by local, state and federal authorities.
6. All construction debris shall be removed from the construction site and legally disposed of offsite.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part One - General (cont.)

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of [Seaman Corporation](#). A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. A [FiberTite Technical Customer Service Representative](#) shall inspect the completed [FiberTite Multi-Ply Roofing](#) installation, and upon acceptance, [Seaman Corporation](#) shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. [Seaman Corporation](#) offers the following [FiberTite Multi-ply Roofing System](#) warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of [10 years](#). There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the [FiberTite](#) membrane.

## Part Two - Products

### 1. General

- A. All products and components for the **FiberTite Roofing System** shall be supplied by **Seaman Corporation**.
- B. Components other than those manufactured and/or supplied by **Seaman Corporation** shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by **Seaman Corporation**, shall be considered unacceptable and their performance excluded from the warranty.
- C. **FiberTite Multi-Ply** membranes may be installed over or directly to preapproved insulation, cover board or composites thereof. Contact **FTCS** for additional information regarding compatible substrates.

### 2. Membrane

#### A. FiberTite-FB Membrane

**FiberTite-FB** is a nominal 36-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-FB**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-FB** exceeds all requirements outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### B. FiberTite-XT FB Membrane

**FiberTite-XT FB** is a nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XT FB**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XT FB** greatly exceeds all requirements outlined **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### C. FiberTite-SM FB Membrane

**FiberTite-SM FB** is a nominal 45-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric and a heat bonded 4 oz. polyester backing, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-SM FB**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-SM FB** exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### D. FiberTite-XTreme FB Membrane

**FiberTite-XTreme FB** is a nominal 90-mil ketone ethylene ester (KEE), reinforced with a 12.5-oz yd<sup>2</sup> woven polyester mat and a heat bonded 4 oz. polyester backing, as manufactured by **Seaman Corporation**, under the trade name **FiberTite-XTreme FB**, conforming to the physical properties as outlined in the associated data sheet. **FiberTite-XTreme FB** greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in **ASTM D 6754** Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

#### E. Flashing Membrane

Nominal 36-mil **FiberTite**, 45-mil **FiberTite-SM**, 50-mil **FiberTite-XT**, or 45-mil **FiberTite Brite** membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

# 5.8 FiberTite® Multi-Ply Roofing Systems

## Part Two - Products (cont.)

### 2. Membrane

#### F. FiberTite SBS Ply

##### 1. FiberTite-SBS Base:

A polyester reinforcement, Styrene-Styrene (SBS) modified asphalt coated sheet having an average weight of **62 lb per 100ft<sup>2</sup>** for asphalt applications and **75 lb per 100ft<sup>2</sup>** for torch grade.

##### 2. FiberTite SBS TG Base:

A polyester reinforcement, Styrene-Styrene (SBS) modified asphalt coated sheet having an average weight of **75 lb per 100ft<sup>2</sup>** for torch application.

##### 3. FiberTite SBS 190 Base:

A fiberglass reinforced, Styrene-Styrene (SBS) modified asphalt coated sheet having an average weight of **92 lb per 100ft<sup>2</sup>** for asphalt application.

##### 4. FiberTite SBS 190 TG Base:

A fiberglass reinforced, Styrene-Styrene (SBS) modified asphalt coated sheet having an average weight of **91 lb per 100ft<sup>2</sup>** for torch application.

#### H. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated
3. Insulated Steel Decking
4. Exterior grade plywood; insulated
5. Cementitious fiber or Gypsum, insulated or non-insulated
6. Authorized base sheet with an adhered insulation/coverboard assembly

### 3. Related Materials "By Seaman Corporation"

The following product(s)/material(s) shall be supplied by **Seaman Corporation**.

#### A. FTR Adhesives

Adhesives, supplied by **Seaman Corporation** have been specially formulated for FiberTite Roofing Systems. **NOTE:** Solvent borne adhesives are not compatible with the FiberTite SBS Base Plies in a FiberTite Multi-Ply Roof System. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-390 Adhesive

A rubberized/asphalt water borne emulsion adhesive, **VOC compliant**, one side application (**substrate only**), designed for bonding **FiberTite-FB (fleece back)** membranes to properly prepared and preauthorized horizontal substrates.

##### 2. FTR-190e Bonding Adhesive

A **VOC compliant** solvent borne, contact (**two-sided**) bonding adhesive, designed for bonding non-fleece back **FiberTite** membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 3. FiberTite CR-20 Adhesive

A dual component elastomeric polyurethane froth adhesive designed for bonding Fleece Back **FiberTite** membranes (**splatter application**) to properly prepared and preauthorized horizontal substrates.

##### 4. FTR-601

Dual component, single bead (**ribbon applied**) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric urethane adhesive, specifically designed for bonding single or multiple layer of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### A. FTR Adhesives (cont.)

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

#### 5. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure FiberTite Membranes to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.

##### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

When required/used to anchor membrane at roof transitions are 2.5" x 1.5" rectangular in dimension with 3/4" radial corners, manufactured from 20-gauge AZ-50 galvalume steel with a 0.25" diameter hole in its center. The plate has a raised reinforcement area and eight barbs.

OR

Used to anchor membrane at roof transitions are 2.375" round steel plate manufactured from 20 gauge galvalume steel with a 0.25" diameter hole in its center. The plate has a raised reinforcement area and barbs.

##### 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ50 galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

##### 1. FTR-101 Sealant

A single-component gun-grade polyether sealant to seal flashing termination.

##### 2. FTR-SLS Sealant

A single-component self leveling polyether sealant for pitch plans.

##### 3. FiberClad Metal

To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.

##### 4. FTR-Premolded Flashing(s)

Injection molded vent stack, split Wrapid Flash® and inside/outside corner flashing using FiberTite Vinyl compound.



# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### D. Additional Components (cont.)

5. **FTR Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced **FiberTite Vinyl** membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece snap-on pre-formed, architectural **Kynar®** metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-Coverboard**  
Gypsum or gypsum/cellulose core board.
11. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Use of a Vapor Retarder in the **FiberTite Roofing System** may require additional insulation attachment beyond the specified. Consult **FTCS** for guidelines.

#### C. Insulation

**NOTE:** For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:
  - a. **Preapproved products**
    - i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
UL Classification: **Class A**.  
Density: 2.0 pcf. Minimum  
Meet requirements of **ASTM C1289**

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### C. Insulation (cont.)

2. Acceptable products must be preapproved in writing by [Seaman Corporation](#) and comply with the minimal characteristics and classification listed for the products below:
  - a. **Preapproved products (cont.)**
    - ii. Gypsum Core Cover Board  
[FM approved](#) meeting [Class A 1-90](#), for fire and wind.  
UL Classification: [Class A Assembly](#).  
Meet requirements of [ASTM C 473](#)  
Georgia-Pacific Gypsum LLC [DensDeck®Prime](#)  
or United States Gypsum Company [Securock®](#)

#### D. Adhesives for Insulation Attachment

##### 1. General

- a. Adhesive not specifically supplied by [Seaman Corporation](#) shall be listed and approved by [Factory Mutual Research](#) in conjunction with the specified insulation and specific substrate.
- b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under [FM-Global](#) requirements or acceptable third party laboratory.
- c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.

##### 2. Polyurethane

- a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.
- b. Preapproved polyurethane products include:
  - i. [FTR-601](#)
  - ii. [FiberTite CR-20](#)

##### 3. Hot Asphalt

- a. Asphalt shall be [Type III](#) or [Type IV](#) steep asphalt, according to [ASTM D-312](#).
- b. Asphalt shall be applied within [25°F](#) of the asphalt manufacturer's recommended Equiviscous Temperature ([EVT](#)). If the manufacturer does not supply the [EVT](#), [Seaman Corporation](#) recommends a temperature range of [425°F](#) for mopping and [450°F](#) for mechanical spreaders. Asphalt applied within [25°F](#) of the [EVT](#), under normal environmental conditions; will provide a nominal [23-25 pounds](#) of asphalt per [100 square feet](#).
- c. The roofing contractor is responsible for maintaining the temperature tolerances at the kettle as well as the rooftop at all times.
- d. Cold weather application can cause significant drops in the temperature of the asphalt during transport to the roof and points of application. Insulated equipment is recommended during cold weather applications.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### E. Base Sheets

1. Preapproved base sheet shall be installed, where specified and/or required, to provide a suitable surface for installation over or adhering the insulation and/or **FiberTite-FB Roofing System**.
2. Acceptable products must be pre-approved or approved in writing by **Seaman Corporation** and comply with the following minimal characteristics and classification(s).
  - a. FM approved, Class 1-90, wind uplift.
  - b. ASTM D 4601 Type II Asphalt Coated Glass-Fiber Base Sheet
  - c. ASTM D 4897 Type II Asphalt Coated Glass-Fiber Venting Base Sheet
  - d. Foil/Kraft Laminate w/min tensile of 54 lb/1" according to ASTM D 828

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with FTR RB 11/13; **General Guide Specifications for Installation of FiberTite Roofing Systems**.
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the **FiberTite Multi-Ply Roofing System**, roof insulation and specified components.
- C. Application of **Seaman Corporation/FiberTite** materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the **FiberTite Multi-Ply Roofing System**.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the **FiberTite Multi-Ply Roofing System**.
- B. **Seaman Corporation** requires fastener withdrawal values (**pull out tests**) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the **FiberTite Multi-Ply Roofing System** as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the **FiberTite Multi-Ply Roofing System**.
- E. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" steel decking, (**decking less than 22-gauge**) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Multi-Ply Roofing System**.

#### B. Structural Concrete (Poured and/or Precast)

1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Multi-Ply Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than **0.1875 of an inch** must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Multi-Ply Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a **minimum 2 inches** thick wood plank or minimum **3/4 inch** plywood.
2. Wood decking that is less than **0.75 inch** will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" wood decking (**wood plank less than 2 inches thick or plywood less than 0.75 inch thick**) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Multi-Ply Roofing System**.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (**including wind up-lift**) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Multi-Ply Roofing System**.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### A. General (cont.)

2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Re-roofing applications that require modification to the deck and/or insulation system should be installed to provide positive slope and subsequent positive drainage of the new [FiberTite Multi-Ply Roofing System](#).
5. All terminations of the [FiberTite Multi-Ply Roofing System](#) must be constructed to prevent water from penetrating behind or beneath the new [FiberTite Multi-Ply Roofing System](#). This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made 100% watertight at the end of the day or prior to inclement weather.

#### C. Recover of Existing Roof System(s)

1. Remove all loose aggregate and debris by power broom and/or vacuum and legally dispose of off site.
2. Remove and replace all wet or deteriorated insulation and wood blocking.
3. Clean all exposed metal surfaces such as pipes, pipe sleeves, drains, duct work, etc., by removing loose paint, rust and any asphalt or coal tar pitch of any kind. Remove and properly discard lead sleeves at soil stacks.

#### D. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new [FiberTite Roofing System](#).
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### E. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
4. Cracks and or camber differentials greater than 0.1875 of an inch shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
5. Where insulation is to be bonded in hot asphalt or approved adhesive, all surface irregularities shall be leveled to ensure full contact with the decking.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to 0.5 inch shall be acceptable.

## Part Three - Execution (cont.)

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
2. Install no more than can be covered or made 100% water tight during the same working day.
3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
4. Base sheets shall be installed starting at the low point of the roof deck.
5. Base sheet shall be side lapped, a minimum of 3 inches, and properly shingled to shed water.

#### B. Mechanically Attached Base Sheet

1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by [Seaman Corporation](#).
2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with [FiberTite Fasteners](#), spaced a maximum of 7 inches on center through the minimum 3 inch side laps and staggered at a maximum 7 inch on center in two rows within the field of the sheet.
3. The number of fasteners securing the base sheet shall be increased over the field spacing by 70% in the perimeter and 100% in the corners of the roof area.
4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

### 7. Roof Insulation

#### A. General

1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered a minimum 12".
2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
3. Install no more than can be covered during the same working day.

## Part Three - Execution (cont.)

### 7. Roof Insulation

#### A. General (cont.)

4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of **two** fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches**
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Mechanically Attached Insulation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. All fasteners and stress plates for the mechanical attachment of insulation and/or cover board materials shall be **FTR Fasteners** as provided by **Seaman Corporation**.
3. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
4. **1-90** attachment for insulation/cover board in the field of the roof requires **1** fastener and stress plate per **2 square feet** of insulation, when the top layer is **< 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
5. **1-90** attachment for insulation/cover board in the field of the roof requires **1** fastener and stress plate per **4 square feet** of insulation, when the top layer is **≥ 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
6. Roof insulation shall be fastened in accordance with the roof insulation manufacturer's recommendations and must be approved by the **FTCS**.
7. Adhered roof systems incorporating mechanically attached insulations and coverboards may require mechanically fastened perimeter and corner membrane systems to comply with guidelines articulated in **FM LPD 1-29**.
8. Fasteners shall be installed in accordance with manufacturer's recommendations, complying with minimum penetration requirements for specific deck types.
9. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.

#### C. Adhered Insulation

General approvals for the attachment of the insulation layer(s) using adhesives in adhered roofing systems are restricted to non-steel deck projects.

The insulation/coverboard manufacturer must recommend and approve the specific board and adhesive combination in writing prior to **Seaman Corporation** granting approval for this method of securement for steel deck applications.

##### 1. Hot Asphalt

- a. Hot asphalt shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### C. Adhered Insulation

1. **Hot Asphalt** (cont.)
  - b. Insulation shall be set into a continuous flood coat of hot **Type III** or **IV** steep asphalt applied to compatible substrate or properly attached base sheet/vapor retarder at a minimum application rate of **25 lbs. per 100 square feet**.
  - c. Insulation shall be fully bonded to the substrate with a maximum board size of **4' x 4'**.
  - d. Insulation shall be laid in such a manner to avoid squeezing hot asphalt between insulation joints. Exposed asphalt will require appropriate separation layer(s) prior to installing the new adhered **FiberTite Roofing System**.
  - e. Adhered insulation applications may require mechanical enhancement of exterior perimeter and or corner areas as outlined in **FM LPD 1-29**.
2. **Urethane or Polyurethane Adhesive**
  - a. Adhesive shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
  - b. The minimum product temperature at time of application shall be **70°F**.
  - c. Adhesives shall not be applied when surface or ambient temperatures are below **40°** or above **110° F**.
  - d. Insulation shall be fully bonded to the substrate with a maximum board size of **4' x 4'**.
  - e. Insulation shall be set into a continuous **0.5 inch** bead of adhesive at a minimum rate of one linear foot of adhesive for every one square foot of insulation board.
  - f. Adhesive rates are to be increased in roof perimeter and corner zones according to specific project requirements and manufacturer's design recommendations.
  - g. Place the boards onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.
  - h. A second walking will be required after **10 minutes** to ensure maximum contact and bond strength.

### 8. Installation of FiberTite Multi-Ply Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the **FiberTite Multi-Ply Roofing System**.
2. The project foreman and or supervisor will be responsible for the daily execution of the Quality Control program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the **FiberTite Multi-Ply Roofing System**.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity of the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a **100%** watertight installation at the end of each day.



# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 4. Roof Insulation (cont.)

#### B. General (cont.)

2. All FiberTite Multi-Ply Roofing Systems shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of [ASCE Standard 7](#). Alternative designs may be determined using the criteria within [Factory Mutual Research Loss Prevention Data](#).
3. A FiberTite Multi-Ply Roofing System shall utilize conventional roll goods.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of FiberTite membranes.
8. FiberTite Multi-Ply Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

#### C. Adhered FiberTite Multi-Ply Roofing Systems

1. The authorized roofing contractor shall assume full responsibility for any and all irregularities, defects or quality issues that arise due to failure to following published installation guidelines for the proper installation of adhered [FiberTite Multi-Ply Roofing Systems](#).
2. **FiberTite SBS Base Ply**
  - a. Fully bond the base ply to the prepared substrate.
  - b. Utilize a minimum 3" side and end laps.
  - c. Apply directly behind the (asphalt or torch) applicator.
  - d. Cut a dog ear angle at the end laps on overlapping selvage edges.
  - e. Using a clean trowel, apply pressure to top seal T-Laps immediately following base ply application.
  - f. Stagger end laps a minimum of 3'.
  - g. Fully bond the "second" base ply (if applicable) in the same manner as the first ply.
  - h. Stagger side laps of the second base ply a minimum 12" from the side laps of the underlying base ply.
  - i. Stagger end laps a minimum 3' from the end laps of the underlying base ply.
3. **FiberTite Fleece Back Membrane Adhered with Hot Asphalt**

\*use only 36mil, XT or Xtreme.

- a. For all FB membranes unroll approximately 30 feet of the [FiberTite-FB](#) membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate.
- b. Apply a 100% continuous coat of adhesive to the substrate.
- c. Correct Equiviscous Temperature (EVT) must be maintained at point of application. Type III steep asphalt shall be applied within 25°F of the asphalt manufacturer's recommended EVT. If the manufacturer does not supply the EVT, [Seaman Corporation](#) recommends a temperature of 425°F for mopping and 450°F for mechanical spreaders.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered FiberTite Multi-Ply Roofing Systems (cont.)

#### 3. FiberTite Fleece Back Membrane Adhered with Hot Asphalt (cont.)

\*use only 36mil, XT or Xtreme.

- d. Asphalt is to be applied by either mopping or mechanical spreaders.
- e. Asphalt must be spread to ensure a smooth, even 100% coverage of the substrate with no voids, skips, globs, puddles, or similar irregularities.
- f. Do not allow asphalt to contaminate the lap seam areas of the membrane. Contaminated areas will inhibit proper welding of the seams.
- g. Carefully maneuver the membrane into the adhesive on the substrate surface, avoiding any wrinkles or air pockets.
- h. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- i. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3", ensuring proper shingling of the membrane to shed water along the laps.
- j. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.

#### 4. FiberTite Fleece Back Membrane Adhered with FT/CR-20 Adhesive

- a. For all FB membranes, un-roll and position two rolls of FiberTite-FB over the properly installed/prepared substrate.
- b. Ensure rolls are straight and the minimum 3 inch overlap between rolls is maintained.
- c. Peel (butterfly) the rolls back in the long direction, halfway upon themselves to expose the substrate and the underlying polyester fleece backing.
- d. Apply continuous spatter pattern of FiberTite CR-20 adhesive to the substrate between the rolls; dispensing the adhesive in a spattered pop-corn spray pattern.
- e. Spatter pattern shall achieve a nominal 80% coverage of textured coating at approximately 0.25 inch nominal thickness. The balance of the substrate will get coated as the adhesive spreads during the brooming and rolling process.
- f. Avoid spattering the back of the FB membrane.
- g. Do not allow adhesive to contaminate membrane overlaps. Use a sheet of insulation board to mask the spray area along adjoining membrane areas.
- h. Overspray may be cleaned immediately with acetone while the adhesive is still wet.
- i. Fold/maneuver the FB membrane into the wet adhesive, (approximate open time for the adhesive is 5 to 10 minutes depending on environmental conditions) avoiding any wrinkles or air pockets in the FB membrane.
- j. Broom the membrane into the wet adhesive and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3", ensuring proper shingling of the membrane to shed water along the laps.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

#### 4. FiberTite Fleece Back Membrane Adhered with FTR-290 Adhesive (cont.)

- l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
- m. FiberTite CR-20 adhesive is designed for use only when the substrate and ambient temperatures are a minimum 40°F and rising and the chemical cylinders are at least 70°F.

#### 5. FiberTite Fleece Back Membrane Adhered with FTR-390 Adhesive

\*Nom. 36-mil FiberTite; nom 45-mil FiberTite-SM; nom 50-mil FiberTite-XT with fleece backing.

- a. For all FB membranes unroll approximately 30 feet of the FiberTite-FB membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate.
- b. Apply a 100% continuous coat of adhesive to the substrate.
- c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
- d. To ensure proper application and curing of the adhesive, the outside air temperature shall be 50°F and rising with no chance of dropping below freezing during the subsequent 48 hour time period.
- e. FTR-390 adhesive may be applied by using a heavy, 3/8 inch nap roller or brush. Do not dump adhesive or pour from the cans.
- f. Roll or brush a smooth, even coat of adhesive over the substrate, ensuring 100% coverage of the substrate with no voids, skips, globs, puddles or similar irregularities.
- g. Allow the adhesive to become sticky but still wet to the touch. Do not allow a film to develop on the adhesive or allow adhesive to dry out.
- h. Adhesive coverage should average 60ft<sup>2</sup> per gallon (± 10%) of applied adhesive.
- i. Roll/maneuver the membrane onto the glued substrate, avoiding any wrinkles or air pockets.
- j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- k. Repeat the process for the remaining u-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
- l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
- m. Water borne adhesives (FTR-390) can be directly affected by moisture. Water based adhesives should not be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
- n. Do not use bad or marginal adhesives.  
Contact FTCS if the quality of the adhesive is suspect.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Peel Stops for Adhered Multi-Ply Roofing Systems

1. Seaman Corporation's standard Terms and Conditions for commercial warranties list 60-mph wind velocity as the first exclusion for wind events. Perimeter assurance or restraint must be provided for any modification to the standard commercial warranty.
2. Assurance or restraint is accomplished using rows of fasteners, installed parallel to exterior roof edges at a prescribed interval and fastener spacing to create a peel stop during a significant wind event.
3. Peel stops must be mechanically attached into or through the structural decking with rows of Magnum stress plates and fasteners, (or authorized alternate) at 12 inches on center. The peel stop is sealed by heat welding a nominal 6 inch strip of membrane over the fasteners.
4. Lightweight insulating concrete is generally not considered a structural component and peel stop fastening must penetrate through the lightweight into the structural component.
5. Peel Stop(s) are only required by Seaman Corporation on adhered projects requiring peak gust wind speed warranties greater than the default 60-mph articulated in the standard commercial warranty.
6. Although not required for standard commercial warranties, it is recommended that projects subject to the possibility of a significant wind event (hurricanes) should incorporate the use of peel stops in the roof system design.
7. The following are general guidelines for the use and inclusion of peel stops in adhered FiberTite Roofing Systems. Peel stop intervals are based upon the field pressure and are as follows:
  - a. Buildings with Design Velocity Pressure less than -45 psf (FM 1-90).  
No Peel Stops.
  - b. Buildings with Design Velocity Pressure greater than -45 psf (FM 1-90) but less than or equal to -52.5 (FM 1-105).  
One peel stop at 18 inches from all edges.
  - c. Buildings with Design Velocity Pressure greater than -52.5 (FM 1-105) but less than or equal to -60 psf (FM 1-120).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges.
  - d. Buildings with Design Velocity Pressure greater than: -60 (FM 1-1200) but less than or equal to -67.5 psf (FM 1-135).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges and the third peel stop at 6 feet from all edges.
  - e. Buildings with Non Class 1 decking, i.e. lightweight, wood, gypsum, and cementitious wood fiber do not default to the above requirements and require additional evaluation and engineering review by FTCS.

#### E. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Welding (cont.)

##### 1. General (cont.)

- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use **CLEAN WHITE COTTON** cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
- f. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a **45°** angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a **1.5 inch** wide nozzle, to create a homogeneous weld, a minimum of **1.5 inches** in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum **1 inch** weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the **FiberTite Membrane** can be achieved with a variety of automatic welding equipment. Contact **FTCS** for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a **1.5 inch** wide nozzle, to create a homogeneous weld, a minimum of **1.5 inches** in width.

#### F. Inspection

- 1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
- 2. Ensure that all aspects of the installation (**sheet layout, attachment, welding, flashing details, etc.**) are in strict accordance with the most current **FiberTite Roofing Systems Specifications and Details**.
- 3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of **FINAL INSPECTION FOR WARRANTY ACCEPTANCE**.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Inspection (cont.)

4. Any deviation from pre-approved specifications and/or details requires written authorization from the **FTCS** prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the **FTCS**.

#### E. T-Joint Cover Installation

1. Installation of **T-Joint Covers** is mandatory on all **FiberTite Membrane Systems** greater than nominal **50 mil**, vegetated roofs, ballast roofs or where T-Joints have not been properly sealed to exhibit a minimum **1.5"** defined crease along the T-Joint.
2. Install **T-Joint Covers**, centered and aligned so edges are parallel to roof system seams.
3. The **T-Joint Cover** shall be **100%** welded.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-190e** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 10. Metal Flashing (cont.)

- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.
- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced **60-mil** membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of **12 inches** of exposed **60-mil** on all sides of the drain.
- G. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of **2 inch** clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within **1 inch** of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, **100%** watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.

# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 13. Temporary Seals (cont.)

- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.



# 5.8 FiberTite® Multi-Ply Roofing Systems



## Part Three - Execution (cont.)

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the [FiberTite Notice of Completion FTCS](#).
- B. Upon receipt of the notice of completion, a [FTCS](#) representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with [Seaman Corporation](#) specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty ([punch list](#)) will be noted on the [Final Inspection for Warranty Form](#).
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved [Seaman Corporation/FiberTite Preinstallation Notice](#) will be issued.

**END of SECTION FTR MP 02/13**

# 5.9 FiberTite® Brite™ Roofing Systems



## FTB-K 02/13 - General Guide Specification for Installation of FiberTite® Brite™ with Kynar® Roofing System

FTB-K 02/13 is provided as a general foundation for the design and installation of a quality, high performance FiberTite FiberTite Brite with Kynar® fluoropolymer top finish Roofing System.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install an adhered FiberTite Brite with Kynar® fluoropolymer top finish Roofing System as manufactured and supplied by:

**Seaman Corporation**  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

##### B. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting a FiberTite Brite Roofing System.
2. All applications and project specifications require review by FiberTite Technical Customer Services (FTCS) for acceptance prior to any commitment to provide a commercial warranty.
3. Seaman Corporation FiberTite Preinstallation notice (FTR-PIN), must be completed, signed by an authorized roofing contractor, submitted to and approved by FTCS before any consideration for warranty and/or the release of any materials can be authorized.

##### C. Special Design Considerations

1. The building owner may be required to submit an engineering study, or Statement of Sound Roof Structure, to FTCS, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. FiberTite Brite Roofing Systems are principally engineered for steep slope (> 2/12) roof construction but can be applied to any low slope roof with positive drainage.
3. FiberTite Brite Roofing Systems are only applicable to new and/or re-roofing projects that include the complete removal of existing roofing and waterproofing materials.
4. Roof system composites that incorporate mechanically fastened insulations should incorporate adhered or bonded coverboards to prevent telegraphing of the insulation stress plates.

##### D. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the Seaman Corporation/FiberTite chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with EPA and OSHA requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.

## Part One - General (cont.)

### D. Environmental Considerations (cont.)

6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (FTR-490 or FTR 390) if the ambient air temperature is expected to drop below 32°F (0°C) within 48 hours of application.
8. The FiberTite Brite Kynar® top finish is not compatible with solvent borne adhesives.

## 2. FiberTite® BRITE™ with Kynar® Roofing Systems References

- A. FTR GS 02/13
- B. FiberTite Construction Details
- C. FiberTite Foreman's Manual
- D. Seaman Corporation Supplemental Instructions  
for FiberTite Brite Installations

## 3. Quality Assurance

- A. FiberTite Brite Roofing Systems shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Brite Roofing Systems prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Brite Roofing Systems by Seaman Corporation.
- C. FiberTite Brite Roofing Systems shall be installed in accordance with the most current guide specifications (FTB-K 02/13) and details as amended and/or authorized by FTCS for specific project requirements.
- D. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- E. Unauthorized deviations may subject the roof system to warranty ineligibility.
- F. Any and all work found to be substandard or in violation of the Contract Documents or Manufacturer's Specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- G. Upon completion and certification by the contractor that a quality installation has been completed in accordance with the approved contract specifications and all field welds have been probed and inspected, a quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval.

## 4. Submittals

- A. The following information shall be submitted to FTCS for review before warranty consideration, material shipment or acceptance can be confirmed:
  1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in FiberTite literature.
  3. Dimensioned outline of the roof indicating all FTR-Detail references.
  4. Dimensioned shop drawings illustrating non-FiberTite details.  
Details that do not conform with standard FiberTite details shall be returned with appropriate recommendations.

## Part One - General (cont.)

### 4. Submittals (cont.)

- B. At the time of contract award, the roofing contractor shall submit to the owner/owner's representative the following:
  - 1. Most recent published technical literature and guide specifications issued by FTCS.
  - 2. Roofing Contractor's approved copy of submittal form **FTR-PIN**.
  - 3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by FTCS.
  - 4. Written approval from FTCS confirming any accessories submitted, not manufactured or expressly approved in FiberTite literature are acceptable and compatible with the proposed FiberTite Roofing System.
  - 5. Material Safety Data Sheets (MSDS) relating to all products, chemicals and solvents.
  - 6. Certification that the system specified complies with all identifiable building code and insurance requirements.

### 5. Delivery & Storage

- A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
- B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.
- C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
- D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
- E. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
- F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's **Material Safety Data Sheets**.
- G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

- 1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
- 2. Worker safety is paramount when working on steep slopes.
- 3. FiberTite Brite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
- 4. Comply with all OSHA requirements for roof construction and fall protection where required.
- 5. Store flammable liquid and materials away from open sparks, flames and extreme heat.

## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### A. Safety (cont.)

6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact FTCS for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of Seaman Corporation. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

## Part One - General (cont.)

### 8. Warranty

#### A. Inspections

1. A FiberTite Technical Customer Service Representative shall inspect the completed FiberTite Brite Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Brite Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years and membrane shall maintain its color to a tolerance of 10 dE (Delta-E) for period of 10 years from the date of application. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium. Color guarantee shall not be extended beyond 10 years.

#### C. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

## Part Two - Products

### 1. General

- A. All products and components for the FiberTite FiberTite Brite with Kynar® fluoropolymer top finish Roofing System shall be supplied by Seaman Corporation.
- B. Components other than those manufactured and/or supplied by Seaman Corporation shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by Seaman Corporation, shall be considered unacceptable and their performance excluded from the warranty.
- C. FiberTite Brite membranes are to be adhered directly to preapproved insulation, coverboard or composites thereof. Contact FTCS for additional information regarding compatible substrates.

# 5.9 FiberTite® Brite™ Roofing Systems



## Part Two - Products (cont.)

### 2. Membrane (cont.)

#### F. FiberTite Brite with Kynar® Membrane Roofing Membrane

1. FiberTite Brite is a 45-mil high performance Architectural Grade PVC membrane, reinforced with a 5.0-oz yd<sup>2</sup> woven polyester fabric and a Kynar® fluoropolymer top-finish as manufactured by Seaman Corporation, under the trade name FiberTite Brite, conforming to the physical properties as outlined in the associated data sheet. FiberTite Brite meets or exceeds all requirements outlined in ASTM D 4434 Standard Specification for Poly-Vinyl Chloride (PVC) Sheet Roofing.
2. FiberTite Brite Roofing Membrane is manufactured with a 3 inch non-top finished selvedge edge (miss) along one side of the roll.
3. The Kynar® fluoropolymer top finish is non-weldable. For field seaming and joining of areas other than the factory miss, the top finished must be removed.

#### G. Flashing Membrane

45-mil FiberTite Brite with and without Kynar® shall/may be used for all flashing requirements to match the field membrane and warranty expectations selected for the roofing system.

Note: FiberTite Brite without Kynar® can be coated with FTB-Kynar® Primer, FTB-Kynar® Touch Up and FTR-Kynar® Clear Coat after installation.

#### H. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated
3. Insulated Steel Decking
4. Exterior grade plywood; insulated
5. Cementitious fiber or Gypsum, insulated or non-insulated
6. Authorized base sheet with an adhered insulation/cover board assembly

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by Seaman Corporation have been specially formulated for FiberTite Roofing Systems.

NOTE: Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-490 Adhesive

A polymeric water borne, VOC compliant adhesive, one side application (substrate only), designed for bonding FiberTite-FB (fleece back), FiberTite-SM and FiberTite Brite to properly prepared and preauthorized horizontal substrates.

##### 2. FTR-190e Bonding Adhesive

A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 3. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere FiberTite flashing membranes to preapproved vertical substrates.

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### A. FTR Adhesives (cont.)

Adhesives, supplied by **Seaman Corporation** have been specially formulated for **FiberTite Roofing Systems**.

**NOTE:** Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

#### 4. FTR-601

Dual component, single bead (**ribbon applied**) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure **FiberTite Membranes** to steel, wood and structural concrete decks. A **#15-13**, buttress threaded, **#3 Phillips head** fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A **#14-13**, heavy duty threaded steel **#3 Phillips truss**, self tapping corrosion resistant fastener.

##### 3. FiberTite Peel Rivets

To secure insulation, base sheet and/or membrane to steel, wood, cement fiber, Tectum fiberglass and lightweight plank decks. Threadless, high magnesium alloy fastener.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure **FiberTite membranes**:

###### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from **18-gauge AZ-50** galvalume steel.

###### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from **20-gauge** galvanized steel.

###### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from **20-gauge** galvanized steel.

##### 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with **AZ-50** galvalume and have a flat/flush profile for use on rigid board surfaces.

#### D. Additional Components

##### 1. FTB-Kynar® Primer

A specially formulated primer to be applied to the surface prior to the application of **FTR-Kynar® Touch Up** paint.

##### 2. FTB-Kynar® Touch Up

A clear **Kynar® (fluoropolymer)** paint mixed to match **FiberTite Brite** membrane color and specially formulated for painting flashing and/or general touch up of the **FiberTite Brite** fluoropolymer surface.



# 5.9 FiberTite® Brite™ Roofing Systems



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### D. Additional Components (cont.)

3. **FTB-Kynar® Clear Coat**  
A clear Kynar® (fluoropolymer) paint for finishing touch up areas on FiberTite Brite membrane.
4. **Scotch Blue**  
A 3.8 inch wide solvent resistant masking tape for masking and removing Kynar® top-finish from specific membrane and flashing areas prior to welding.
5. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
6. **FTR-SLS Sealant**  
A single-component self leveling polyether sealant for pitch plans.
7. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.  
(Can be painted with FTB-Kynar® Primer followed by FTB-Kynar® Touch Up Paint)
8. **FTB-Premolded Flashing(s)**  
Preformed/welded vent stack and inside/outside corner flashing using FiberTite Brite membrane without top-finish.  
(Preformed flashing will require painting with FTB-Kynar® Primer followed by FTB-Kynar® Touch Up Paint and FTR-Kynar® Clear Coat to match membrane color.)
9. **FTB Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.  
(Non-reinforced membrane/flashing will require painting with FTB-Kynar® Primer followed by FTB-Kynar® Touch Up Paint and FTR-Kynar® Clear Coat to match membrane color.)
10. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
11. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
12. **FiberTite Metal Fascia System**  
Two piece, snap-on, pre-formed, architectural Kynar® fluoropolymer metal edge systems.
13. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
14. **FTR-Cover Board**  
Gypsum or gypsum/cellulose core board manufactured for use with either mechanically attached roofing systems. Surface treated Gypsum (Dens-Prime®) or Gypsum/Cellulose core (Securock®) board manufactured for use with adhered roofing system/applications.

## Part Two - Products (cont.)

### 4. Related Materials

#### A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

#### B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Use of a Vapor Retarder in the **FiberTite Roofing System** may require additional insulation attachment beyond the specified. Consult **FTCS** for guidelines.

#### C. Insulation

**NOTE:** For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:

##### a. Preapproved products

- i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
 UL Classification: **Class A**.  
 Density: 2.0 pcf. Minimum  
 Meet requirements of **ASTM C1289**
- ii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
 UL Classification: **Class A Assembly**.  
 Meet requirements of **ASTM C 473**  
 Georgia-Pacific Gypsum LLC **DensDeck®Prime**  
 or United States Gypsum Company **Securock®**

#### D. Adhesives for Insulation Attachment

1. Insulation adhesive shall be supplied by **Seaman Corporation** and shall be listed and approved by **Factory Mutual Approvals** in conjunction with the specified insulation and specific substrate.
2. Insulation adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under **FM-Global** requirements or acceptable third party laboratory.
3. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.
4. **Polyurethane**
  - a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Adhesives for Insulation Attachment (cont.)

4. Polyurethane (cont.)
  - b. Approved products include:
    - i. FTR-601
    - ii. CR-20; 3M
    - iii. OlyBond®; Olympic Manufacturing Group

#### E. Base Sheets/Base Ply

1. Preapproved base sheet shall be installed, where specified and/or required, to provide a suitable surface for installation over or adhering the insulation.
2. Acceptable products must be pre-approved or approved in writing by Seaman Corporation and comply with the following minimal characteristics and classification(s).
  - a. FM approved, Class 1-90, wind uplift.
  - b. ASTM D 4601 Type II Asphalt Coated Glass-Fiber Base Sheet
  - c. ASTM D 4897 Type II Asphalt Coated Glass-Fiber Venting Base Sheet
  - d. Foil/Kraft Laminate w/min tensile of 54 lb/1" according to ASTM D 828

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with FTR GS 02/13; General Guide Specifications for Installation of FiberTite Roofing Systems.
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the FiberTite Brite Roofing System, roof insulation and specified components.
- C. Application of Seaman Corporation/FiberTite materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the FiberTite Brite Roofing System.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the FiberTite Brite Roofing System.
- B. Seaman Corporation requires fastener withdrawal values (pull out tests) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the FiberTite Brite Roofing System as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the FiberTite Brite Roofing System.
- E. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.

## Part Three - Execution (cont.)

### 3. Substrate Preparation (New Construction)

#### A. Steel Deck

1. Steel decking shall conform to Factory Mutual (FM) guidelines for **Class-1** insulated steel deck construction.
2. Steel decking shall be constructed of a minimum **22-gauge** cold rolled steel sheets with factory **G-90 galvanized coating**.
3. Panel profiles, (ribs) shall be formed to minimize deflection and provide suitable strength and integrity to support anticipated structural live and dead loads.
4. Steel decking shall be installed in compliance with specified design criteria and local building code requirements.
5. Steel decking that is less than **22-gauge** may be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" steel decking, (**decking less than 22-gauge**) to determine suitability and appropriate fastener patterns and densities for mechanical attachment of the new components of the **FiberTite Brite Roofing System**.

#### B. Structural Concrete (Poured and/or Precast)

1. Decking shall be installed in strict conformance with industry standards, practices and/or precast panel manufacturer's installation requirements.
2. Decking shall be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Brite Roofing System**.
3. Finished decking shall be properly cured and dry, prior to the installation of approved insulation.
4. Finished surface(s) to receive new roof system shall be smooth and level without significant surface depressions or irregularities. Camber differentials greater than **0.1875 of an inch** must be leveled using a cementitious grout.
5. Finished surfaces shall be free of moisture, dust, loose debris and any other irregularity that may hinder the proper performance of the new **FiberTite Brite Roofing System**.

#### C. Wood

1. Wood decking shall conform to **Factory Mutual (FM)** guidelines for **Class-1** impregnated wood decking. **FM Class-1** decking consists of a **minimum 2 inches** thick wood plank or minimum **3/4 inch** plywood.
2. Wood decking that is less than **0.75 inch** will be considered for application by **Seaman Corporation**. Fastener withdrawal tests shall be performed on all "**Non-FM Approved**" wood decking (**wood plank less than 2 inches thick or plywood less than 0.75 inch thick**) to determine suitability and appropriate fastener patterns for the components of the new **FiberTite Brite Roofing System**.
3. Wood decking shall be sound, well seasoned or kiln dried and of proper thickness to accommodate design loads (**including wind up-lift**) according to specified design criteria and/or local building code requirements.
4. Wood decking should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Brite Roofing System**.

### 4. Substrate Preparation (Reroofing)

#### A. General

1. Roofing Contractor shall inform the building owner/owner representative of any issues in regard to the condition and structural integrity of the existing decking.

## Part Three - Execution (cont.)

### 4. Substrate Preparation (Reroofing) (cont.)

#### A. General (cont.)

2. The building owner/owner representative shall make and be responsible for the determination as to the proper method of treatment and/or replacement.
3. Reroofing applications require fastener withdrawal tests to substantiate proposed attachment patterns for the new mechanically fastened insulation systems and/or membranes.
4. Re-roofing applications that require modification to the deck and/or insulation system should be installed to provide positive slope and subsequent positive drainage of the new **FiberTite Brite Roofing System**.
5. All terminations of the **FiberTite Brite Roofing System** must be constructed to prevent water from penetrating behind or beneath the new **FiberTite Brite Roofing System**. This includes water from above, beside, below and beneath the new system.

#### B. Removal of Existing Roof System(s)

1. Remove all existing roofing material(s), insulation, flashing, metal and deteriorated wood blocking and legally dispose of offsite.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made **100%** watertight at the end of the day or prior to inclement weather.

#### C. Steel and Wood Decks

1. All rotted and/or deteriorated decking shall be removed and replaced with like kind.
2. Areas of structurally acceptable steel decking exhibiting slight surface rust shall be properly cleaned, primed and painted prior to installing the approved insulation.
3. All decking shall be inspected for proper attachment and excessive deflection that would compromise the uplift performance of the new **FiberTite Brite Roofing System**.
4. Attachment and deflection deficiencies shall be repaired and brought into compliance with current local building code requirements.

#### D. Concrete

1. Deteriorated decking shall be repaired and/or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions and/or areas where reinforcing has become exposed.
3. When new insulation system is to be installed using an approved adhesive:
4. Cracks and or camber differentials greater than **0.1875 of an inch** shall be repaired using an appropriate cementitious grout or fill, and feathered to promote a smooth transition.
5. Where insulation is to be bonded in hot asphalt or approved adhesive, all surface irregularities shall be leveled to ensure full contact with the decking.
4. Where insulation is to be mechanically attached, camber differentials and/or surface irregularities of up to **0.5 inch** shall be acceptable.

### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction **± 0.25 inch**. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.

## Part Three - Execution (cont.)

### 5. Wood Nailers (cont.)

- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult [FiberTite Construction Details](#) or [FiberTite Technical Customer Services](#) for optional/alternate membrane termination/securement methods.

### 6. Base Sheet

#### A. General

- 1. Approved base sheet, when required or specified, shall be applied only to properly prepared and pre-approved substrates.
- 2. Install no more than can be covered or made 100% water tight during the same working day.
- 3. Field pull-out tests must be performed for mechanically attached base sheets to determine fastener withdrawal performance.
- 4. Base sheets shall be installed starting at the low point of the roof deck.
- 5. Base sheet shall be side lapped, a minimum of 3 inches, and properly shingled to shed water.

#### B. Mechanically Attached Base Sheet

- 1. All base ply fasteners and stress plates for the mechanical attachment of base sheets shall be provided by [Seaman Corporation](#).
- 2. For 1-90 attachment, approved base sheet is secured to the deck in the field of the roof, with [FiberTite Fasteners](#), spaced a maximum of 7 inches on center through the minimum 3 inch side laps and staggered at a maximum 7 inch on center in two rows within the field of the sheet.
- 3. The number of fasteners securing the base sheet shall be increased over the field spacing by 70% in the perimeter and 100% in the corners of the roof area.
- 4. Fastening increases can be obtained by adding rows of fasteners and/or additional fasteners along each row.

### 7. Roof Insulation

#### A. General

- 1. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered a minimum 12".
- 2. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
- 3. Install no more than can be covered during the same working day.
- 4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is 1.5 inches or less, taper 12 inches from the drain bowl. If insulation thickness exceeds 1.5 inches, taper 18 inches from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
- 5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of 12 inches
- 6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

## Part Three - Execution (cont.)

### 7. Roof Insulation

#### A. General (cont.)

4. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is **1.5 inches or less**, taper **12 inches** from the drain bowl. If insulation thickness exceeds **1.5 inches**, taper **18 inches** from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of **two** fasteners per board.
5. When a cover board and/or multiple layers are installed each layer shall be offset from the previous layer a minimum of **12 inches**
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

#### B. Mechanically Attached Insulation

1. Insulation shall be applied to and installed over properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
2. All fasteners and stress plates for the mechanical attachment of insulation and/or cover board materials shall be **FTR Fasteners** as provided by **Seaman Corporation**.
3. All fasteners and stress plates shall be **Factory Mutual Research** approved for mechanical attachment of insulation and comply with **FM Standard 4470** for corrosion resistance.
4. **1-90** attachment for insulation/cover board in the field of the roof requires **1** fastener and stress plate per **2 square feet** of insulation, when the top layer is **< 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
5. **1-90** attachment for insulation/cover board in the field of the roof requires **1** fastener and stress plate per **4 square feet** of insulation, when the top layer is **≥ 2 inches** thick and the membrane is adhered.
  - a. Perimeter areas require a **50%** increase in the fastener density.
  - b. Corner areas require a **100%** increase in the fastener density.
6. Roof insulation shall be fastened in accordance with the roof insulation manufacturer's recommendations and must be approved by the **FTCS**.
7. Adhered roof systems incorporating mechanically attached insulations and coverboards may require mechanically fastened perimeter and corner membrane systems to comply with guidelines articulated in **FM LPD 1-29**.
8. Fasteners shall be installed in accordance with manufacturer's recommendations, complying with minimum penetration requirements for specific deck types.
9. Fasteners shall be installed using depth sensing tool attachments to ensure proper installation.

#### C. Adhered Insulation

Approvals for the attachment of the base insulation layer(s) using adhesives in adhered roofing systems are restricted to non-steel deck projects. The insulation/cover board manufacturer must recommend and approve the specific board and adhesive combination in writing prior to **Seaman Corporation** granting approval for this method of securement for steel deck applications.

#### 1. Urethane or Polyurethane Adhesive

- a. Adhesive shall be applied only to properly prepared and preapproved substrates, free of any debris, dirt, grease, oil or moisture.
- b. The minimum product temperature at time of application shall be **70°F**.
- c. Adhesives shall not be applied when surface or ambient temperatures are below **40°** or above **110° F**.

## Part Three - Execution (cont.)

### 7. Roof Insulation (cont.)

#### C. Adhered Insulation (cont.)

1. **Urethane or Polyurethane Adhesive** (cont.)
  - d. Insulation shall be fully bonded to the substrate with a maximum board size of 4' x 4'.
  - e. Insulation shall be set into a continuous 0.5 inch bead of adhesive at a minimum rate of one linear foot of adhesive for every one square foot of insulation board.
  - f. Adhesive rates are to be increased in roof perimeter and corner zones according to specific project requirements and manufacturer's design recommendations.
  - g. Place the boards onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.
  - h. A second walking will be required after 10 minutes to ensure maximum contact and bond strength.

### 8. Installation of FiberTite Brite Membrane(s)

#### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the **FiberTite Brite Roofing System**.
2. The project foreman and or supervisor will be responsible for the daily execution of the Quality Control program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the **FiberTite Brite Roofing System**.
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity of the installation.

#### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All **FiberTite Brite Roofing Systems** shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of **ASCE Standard 7**. Alternative designs may be determined using the criteria within **Factory Mutual Research Loss Prevention Data**.
3. A **FiberTite Brite Roofing System** shall utilize conventional roll goods.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of **FiberTite Brite** membranes.
8. **FiberTite Brite Roofing Systems** shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.



## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### C. Adhered Membrane (cont.)

6. **FiberTite Brite Membrane Adhered with FTR-490 Adhesive**
  - a. Over the properly installed/prepared substrate surface, position the **FiberTite Brite** roll of membrane.
  - b. Apply a **100% continuous** coat of adhesive to the substrate.
  - c. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
  - d. Adhesive shall be applied using a solvent resistant **3/8 inch** nap roller, rolling the adhesive to ensure a smooth, even **100% coverage** of the substrate with no voids, skips, globs, puddles, or similar irregularities.
  - e. Do not dump adhesive or pour from the cans.
  - f. Adhesive coverage should average **140 square feet** per gallon ( $\pm 10\%$ ) of applied adhesive.
  - g. Allow the adhesive to remain wet or slightly set but still wet. Do not allow adhesive to dry out.
  - h. Roll/maneuver the membrane onto the glued substrate, avoiding any wrinkles or air pockets.
  - i. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
  - j. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of **3 inches**, ensuring proper shingling of the membrane to shed water along the laps.
  - k. No adhesive shall be applied to the lap "seam" areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
  - l. Water borne adhesives (**FTR-490**) can be directly affected by moisture. Water based adhesives shall not to be installed over/on substrates that are moist or wet or on systems or substrates that have residual moisture.
  - m. Do not use bad or marginal adhesives. Contact **FTCS** if the quality of the adhesive is suspect.

#### D. Peel Stops for Adhered Multi-Ply Roofing Systems

1. **Seaman Corporation's** standard Terms and Conditions for commercial warranties list **60-mph** wind velocity as the first exclusion for wind events. Perimeter assurance or restraint must be provided for any modification to the standard commercial warranty.
2. Assurance or restraint is accomplished using rows of fasteners, installed parallel to exterior roof edges at a prescribed interval and fastener spacing to create a peel stop during a significant wind event.
3. Peel stops must be mechanically attached into or through the structural decking with rows of Magnum stress plates and fasteners, (**or authorized alternate**) at **12 inches** on center. The peel stop is sealed by heat welding a nominal **6 inch** strip of membrane over the fasteners.
4. Lightweight insulating concrete is generally not considered a structural component and peel stop fastening must penetrate through the lightweight into the structural component.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Peel Stops for Adhered Multi-Ply Roofing Systems

5. Peel Stop(s) are only required by Seaman Corporation on adhered projects requiring peak gust wind speed warranties greater than the default 60-mph articulated in the standard commercial warranty.
6. Although not required for standard commercial warranties, it is recommended that projects subject to the possibility of a significant wind event (hurricanes) should incorporate the use of peel stops in the roof system design.
7. The following are general guidelines for the use and inclusion of peel stops in adhered FiberTite Roofing Systems. Peel stop intervals are based upon the field pressure and are as follows:
  - a. Buildings with Design Velocity Pressure less than -45 psf (FM 1-90).  
No Peel Stops.
  - b. Buildings with Design Velocity Pressure greater than -45 psf (FM 1-90) but less than or equal to -52.5 (FM 1-105).  
One peel stop at 18 inches from all edges.
  - c. Buildings with Design Velocity Pressure greater than -52.5 (FM 1-105) but less than or equal to -60 psf (FM 1-120).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges.
  - d. Buildings with Design Velocity Pressure greater than -60 (FM 1-1200) but less than or equal to -67.5 psf (FM 1-135).  
One peel stop at 18 inches from all edges and the second peel stop at 3 feet from all edges and the third peel stop at 6 feet from all edges.
  - e. Buildings with Non Class 1 decking, i.e. lightweight, wood, gypsum, and cementitious wood fiber do not default to the above requirements and require additional evaluation and engineering review by FTCS.

#### E. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with MEK or authorized alternative.
- d. Do not allow MEK or any other cleaning solvents to come in contact with the Kynar® fluoropolymer top finish. Aggressive solvents will either mar or completely remove the top finish.
- e. Protect the colored top finish by masking the area(s) to be cleaned.
- f. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- g. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.
- h. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### E. Welding (cont.)

#### 2. Kynar® Removal

- a. The colored Kynar® fluoropolymer top finish is easily removed with MEK.
- b. Use FiberTite Scotch Blue tape to mask the area where top finish is to be removed.
- c. Use CLEAN WHITE COTTON cloths and allow MEK approximately five minutes to dissipate before welding.
- d. Remove all trace of colored top finish to expose clean polymeric surface of the membrane.

#### 3. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

#### 4. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Brite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### F. Inspection

1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current FiberTite Roofing Systems Specifications and Details.
3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of FINAL INSPECTION FOR WARRANTY ACCEPTANCE.
4. Any deviation from pre-approved specifications and/or details requires written authorization from the FTCS prior to application to avoid any warranty disqualification.

## Part Three - Execution (cont.)

### 8. Installation of FiberTite Membrane(s) (cont.)

#### D. Inspection (cont.)

5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the FCTS.

### 9. Flashing

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved FiberTite details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with FTR-490 Adhesive or FTR-201 mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of 8 inches.
- F. Mask and clean roof/base flashing areas as described in 5.9 Part 3, Section 8/E-2: Kynar® removal above.
- G. Vertical flashing shall be terminated no less than 8 inches above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- H. When using FTR-201 as the adhesive, vertical wall flashing termination shall not exceed 40 inches without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- I. Complete all inside and outside corner flashing details with FiberTite pre-formed corners or an approved field fabrication detail.
- J. Touch up penetration flashing and base flashing using FTB-Kynar® primer and Touch Up Paint as described in 5.9 Part 2, Section 3: Related Materials above.
- K. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- L. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

### 10. Metal Flashing

- A. All perimeter edge details are to be fabricated from FiberClad Metal or utilize a prefabricated FiberTite Fascia System.
- B. Fiber Clad metal can be painted to match the FiberTite Brite membrane using FTB-Primer and FTB-Kynar® Paint followed by FTB-Clear Coat.
- C. Ensure all fascia extend a minimum of 2 inches lower than the bottom of the wood nailers.
- D. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners 8 inches on center.
- E. Break and install FiberClad metal in accordance with approved details, ensuring proper attachment, maintaining 0.5 inch expansion joints and the installation of a minimum 2 inch bond breaker tape prior to sealing the joint.
- F. Solidly weld FiberClad expansion joints with a 6 inch strip of FiberTite Brite membrane welded to the FiberClad, covering the bond breaker tape (cover plates are optional).

## Part Three - Execution (cont.)

### 10. Metal Flashing (cont.)

#### G. Roof Drains

1. Flash all roof drains in accordance with FiberTite roof drain details.
2. Replace all worn or broken parts that may cut the FiberTite membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
4. FiberTite Brite non-reinforced 60-mil membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
5. The drain target sheet should be sized and installed to provide for a minimum of 12 inches of exposed 60-mil on all sides of the drain.

#### H. Pitch Pans

1. EVERY REASONABLE EFFORT shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact FTCS for specific design alternatives and recommendations.
2. In the event of no alternative, fabricate pitch pans from Fiber Clad metal, installed in accordance with FiberTite details, ensuring proper attachment, maintaining a minimum of 2 inch clearance around the penetration.
3. Pitch Pans shall be filled with non-shrinking grout to within 1 inch of the top of the pan. Allow the grout to dry and fill remainder of the pan with FTR-SLS pourable sealant.
4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 11. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to FiberTite specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (FTR-PIN) is submitted.

### 12. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 13. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.
- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.

## Part Three - Execution (cont.)

### 13. Temporary Seals (cont.)

- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

### 14. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. **Walkway Installation**
  - 1. Roofing membrane to receive walkway material shall be clean and dry.
  - 2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
  - 3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.
- C. **Protection Pad Installation**
  - 1. Roofing membrane to receive protection pad material shall be clean and dry.
  - 2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
  - 3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 15. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite Brite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 16. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

## Part Three - Execution (cont.)

### 17. Warranty Inspection

- A. Upon completion of the project, the authorized roofing contractor shall complete and submit the [FiberTite Notice of Completion FTCS](#).
- B. Upon receipt of the notice of completion, a [FTCS](#) representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with [Seaman Corporation](#) specifications.
- C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty ([punch list](#)) will be noted on the [Final Inspection for Warranty Form](#).
- D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved [Seaman Corporation/FiberTite](#) Preinstallation Notice will be issued.

**END of SECTION FTB-K 02/13**

# 5.10 FiberTite® Green Vegetated Systems



## FTG VRS 05/13 - General Guide Specification for Installation of FiberTite® Green Vegetated Roofing System

FTG VRS05/13 may be utilized for membrane roofing/waterproofing for conventional roof deck applications involving extensive and intensive vegetated roofing systems. The FiberTite Green Vegetated Roof System is a single source integrated assembly utilizing FiberTite Roofing Systems and a FiberTite Green Vegetated Assembly. The FiberTite Green Vegetated Roof System may be loose laid, adhered or mechanically fastened as the project dictates and includes all roofing membrane, integral flashing, vegetated system components, engineered soil, plants, leak detection and related accessories as manufactured and supplied by Seaman Corporation.

### Part One - General

#### 1. Summary

##### A. Scope

1. Furnish and install an adhered FiberTite® Green Vegetated Roofing System as manufactured and supplied by:

Seaman Corporation  
1000 Venture Blvd.  
Wooster, Ohio 44691  
Tel.: 1-800-927-8578  
Fax: 1-800-649-2737

2. FiberTite Roofing System shall be the core waterproofing assembly within the FiberTite Green Vegetated Roof System, including insulation, coverboard, integral flashing, protection layer, drainage medium, engineered growing medium, plants and components as required.
3. The work may include, but is not necessarily limited to:
  - a. Roofing Waterproofing System
    - i. FiberTite Membrane
    - ii. Insulation/Coverboard
    - iii. Fasteners
    - iv. Membrane Flashing
    - v. Sealants and Adhesives
    - vi. Metal Flashing
  - b. Leak Monitoring System
    - i. FiberTite Smartex® EVM
    - ii. Stainless Steel ConDuct® Grounding Mesh
  - c. Vegetated Overburden - FiberTite Green Multi Layer System
    - i. Protection Layer When Specified
    - ii. Drainage Layer
    - iii. Filter Layer
    - iv. Retention Layer
    - v. Engineered Growing Media
    - vi. Plants
    - vii. Metal Edging/Trim Elements
    - viii. Irrigation System
  - d. Vegetated Overburden - FiberTite Green Multi Layer System
    - i. Double Interlocking Trays
    - ii. Connectors
    - iii. Engineered Growing Media
    - iv. Metal Edging/Trim Elements
    - v. Integrated Irrigation System



## Part One - General (cont.)

### 1. Summary (cont.)

#### B. Definitions

##### 1. FiberTite Green Multilayer:

Patent-pending system includes a drainage layer, filter layer and retention layer, regionally-engineered growing media, specified firewise and firesafe plants, stainless steel or aluminum trim elements. The low profile multilayer system is designed to control flow of water and the drainage layer of the multilayer system is designed to keep the roof structure dry, while providing excellent airflow up through the system and while reducing wind uplift.

##### 2. FiberTite Green Tray System:

Includes double interlocking trays, connectors, regionally-sourced engineered growing media, specified firewise and firesafe plants, stainless steel or aluminum edgers and integrated irrigation system.

Growing media can be placed above level of interlocking trays for thicker beds because of interlocking design. Drainage system is designed to control flow of water and bottom of trays are designed to reduce wind uplift.

##### 3. Extensive Vegetated Roof Systems:

Defined as low to no maintenance garden roof systems that incorporate a roofing/waterproofing membrane system that is covered with soil and vegetation in a growing medium that is less than 6" in depth.

Extensive systems incorporate the following items within the assembly: deck/substrate, insulation, coverboard, roofing membrane, flashing membrane, sealant and adhesives, metal flashing, protection layer, drainage layer, filter fabric, water retention layer, growing medium and plants/vegetation.

##### 4. Growing Media:

The engineered growth media and selection of appropriate vegetation is critical to the system's performance and must be properly engineered for each application.

Seaman Corporation will arrange engineering for the vegetated system for a full-service, single-source system warranty.

##### 5. Phytoremediation:

The use of green plants to extract pollutants, mineral elements, heavy metals, radioisotopes and other contaminants from soil and water environments.

##### 6. German FLL Greenroof Guidelines:

Guidelines for the Planning, Execution and Upkeep of Green Roof Sites, [Release 2002](#). Worldwide acknowledged state-of-the-art technology as scientific foundation for successful and thriving green roofs.

##### 7. Electronic Vector Mapping: (required for all single-source warranties)

EVM pinpoints breaches through a waterproofing membrane by creating a positive and negative electrical plate over and under the non-conductive waterproofing membrane. If there are any penetrations in the waterproofing, current will flow through the membrane and the exact location detected with the testing equipment.

#### C. Special Conditions

1. This specification is applicable to only those building roofs that have decking of sufficient structural integrity, capable of supporting the loads associated with this type of installation according to the guidelines set forth herein, and specific system addenda included by reference in [5.10 Part 1, Section 2: References](#).

## Part One - General (cont.)

### 1. Summary (cont.)

#### C. Special Conditions

2. All applications and project specifications require review by **FiberTite Technical Customer Services (FTCS)** for acceptance prior to any commitment to provide a commercial warranty.
3. **Seaman Corporation FiberTite Preinstallation Notice (FTR-PIN)**, must be completed, signed by an authorized roofing contractor, submitted to and approved by **FTCS** before any consideration for warranty and/or the release of any materials can be authorized.

#### D. Special Design Considerations

1. The building owner may be required to submit an engineering study, or **Statement of Sound Roof Structure**, to **FTCS**, indicating that the structure is able to accommodate additional live and/or dead loads including snow and water retention.
2. Moisture conditions in existing roof(s), new structural concrete or new lightweight insulating concrete that would impair or prohibit the desired performance of the new roof system.
3. Positive slope to promote adequate drainage to avoid the potential damage to the substrate or components.
4. Roof areas subject to heavy or excessive mechanical traffic shall be designed with proper access paths.
5. All **FiberTite Green Vegetated Roof Systems** require an approved coverboard over the roof system insulation, directly beneath the vegetated overburden.
6. This specification does not provide building code or jurisdiction acceptance as to wind, fire, etc as they relate to a Vegetated Roof System.
7. Supply rooftop water source for irrigation system.
8. Conform to project landscape design requirements, recommendations of local horticulturists where possible and requirements of authorities having jurisdiction, including Fire Marshall for specific recommendations and regulations.

#### E. Environmental Considerations

1. Severe environmental exposure [e.g. coastal or high wind area(s)].
2. Chemical discharge not listed on the **Seaman Corporation/FiberTite** chemical resistance publication.
3. Environmental conditions such as fog, dew, rain or snow and/or freezing temperatures can have a detrimental effect on the application and performance of adhesives.
4. Compliance with **EPA** and **OSHA** requirements as published by Local, State and Federal authorities.
5. All adhesives can be described as temperamental. The contractor must be aware of all potential environmental variables when working with adhesives.
6. Pay particular attention to and follow all adhesive storage and application precautions/guidelines.
7. Do not apply/use waterborne adhesives (**FTR-490** or **FTR 390**) if the ambient air temperature is expected to drop below **32°F (0°C)** within **48 hours** of application.
8. Ambient Air Temperature: Install plant materials in the **FiberTite Green Vegetated Roofing System** preferably between April 1 and **November 1** at temperatures between **40°F** and **95°F (at northern latitudes)**. Do not install if extended freezing temperatures are expected or if ambient soil temperature is expected to remain below **50°F**.

## Part One - General (cont.)

### 2. References

- A. FTR GS 02/13
- B. FTR MA 02/13
- C. FTR AD 02/13
- D. FiberTite Construction Details
- E. FiberTite Green Construction Details
- F. ASTM E2400-06 Standard Guide for Selection, Installation and Maintenance of Plants for Green Roof Systems

### 3. Quality Assurance

- A. FiberTite Green Vegetated Roofing Systems - inclusive of the vegetated overburden - shall be installed only by a roofing contractor, authorized by Seaman Corporation to install FiberTite Roofing Systems prior to bid and/or contract award. Herein, the term Authorized FiberTite Roofing Contractor is synonymous with authorized, roofing contractor and/or contractor.
- B. Primary materials for FiberTite Green Vegetated Roofing System shall be obtained from Seaman Corporation and be FiberTite Brand.
- C. All Vegetated System components shall be FiberTite Green and obtained from Seaman Corporation.
- D. Roofing contractor's key personnel shall have received specialized training in the installation of FiberTite Roofing System.
- E. FiberTite Roofing System shall be installed in accordance with the most current guide specifications and details as amended and/or authorized by FTCS for specific project requirements.
- F. There shall be no deviations from approved contract specifications or shop drawings without prior written approval by the owner/owner representative and FTCS.
- G. Unauthorized deviations may subject the roof system to warranty ineligibility.
- H. Installation of FiberTite membrane, insulation, integral flashing, FiberTite Green multi-layer or tray vegetated components shall be the responsibility of the authorized roofing contractor to ensure undivided responsibility.
- I. Any and all work found to be substandard or in violation of the contract documents or manufacturer's specifications shall be subject to rejection including complete removal and replacement with new materials at the expense of the contractor.
- J. A quality assurance inspection of the roof system shall be performed by FTCS for acceptance and approval. This inspection shall be performed upon completion and certification by the contractor that the FiberTite Roofing System has reached 100% completion, a quality installation has been completed in accordance with the approved contract specifications, and all field welds have been probed and inspected.
- K. The Quality Assurance Inspection must be coordinated prior to the installation of the above membrane vegetated system components and all field seams shall be visible and available to FTCS at the time of final inspection.
- L. Flood Test: Conduct 24-hour flood test of the completed membrane roof system prior to installation of FiberTite Green components.
- M. Electronic Vector Mapping (EVM) Leak Detection Testing of the completed FiberTite Roofing System is required for all single source material and labor warranties. The testing must be accomplished in the presence of FTCS or an authorized representative appointed by Seaman Corporation. Written confirmation and acceptance of the test results by all parties shall follow the testing.

### Part One - General (cont.)

#### 4. Submittals

- A. The following information shall be submitted to **FTCS** for review before warranty consideration, material shipment or acceptance can be confirmed:
1. Complete copy of project architectural specifications or roofing contractor's proposal outlining design parameters.
  2. Complete list of accessories or materials not manufactured or expressly authorized for use in **FiberTite** literature.
  3. Dimensioned outline of the roof indicating all **FTR**-Detail references.
  4. Dimensioned shop drawings illustrating non-**FiberTite** details. Details that do not conform with standard **FiberTite** details shall be returned with appropriate recommendations.
  5. Acceptance of the structural loading by a qualified engineer or design professional.
- B. At the time of contract award, the roofing contractor shall submit to the owner or owner's representative the following:
1. Most recent published technical literature and guide specifications issued by **FTCS**.
  2. Roofing contractor's approved copy of submittal form **FTR-PIN**.
  3. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by **FTCS**.
  4. Written approval from **FTCS** confirming any accessories submitted, not manufactured or expressly approved in **FiberTite** literature are acceptable and compatible with the proposed **FiberTite Membrane Roofing System**.
  5. Material Safety Data Sheets (**MSDS**) relating to all products, chemicals and solvents.
  6. Certification that the system specified complies with all identifiable building code and insurance requirements.
- C. **FiberTite Green Vegetated Roof System**
1. Submit shop drawings indicating plan layout and details at critical terminations of garden roof system with adjacent construction. Include planter system, pavers and building systems.
  2. Product Data
    - a. Vegetated roofing system, components, growing media type and planting types with descriptive published data indicating characteristics and limitations.
    - b. Include standard details, system components and proposals for plant types and characteristics.
  3. Maintenance Instructions for owner maintenance of planting media as needed for long-term propagation and health of vegetation. Include special provisions as applicable for specific plant media and climate zone.

#### 5. Delivery & Storage

##### A. Membrane Roofing System

1. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.
2. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.

## Part One - General (cont.)

### 5. Delivery & Storage (cont.)

#### A. Membrane Roofing System (cont.)

3. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate for outdoor storage.
4. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. Manufacturer's packaging is not considered adequate protection from moisture.
5. All Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.
6. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's [Material Safety Data Sheets](#).

#### B. Vegetated Garden System

1. Maintain health of plant media as recommended by nursery guidelines prior to rooftop installation.
2. Take measures to locate and spread loads in manner to not exceed load bearing capacity of the roof deck.
3. Store vegetated planters and materials over plywood panels or protective sheeting and do not allow products, growing media, grit, debris and pedestrian traffic on unprotected roofing membrane.
4. Provide water source of irrigation and maintenance of plants until permanent drip irrigation system is in place.

#### C. Shipping Damage

1. Materials, determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

### 6. Job Conditions

#### A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and/or hot asphalt.
2. Worker safety is paramount when working on steep slopes.
3. FiberTite is slippery when wet or exhibits dew, frost, ice or any other form of moisture.
4. Comply with all OSHA requirements for roof construction and fall protection where required.
5. Store flammable liquid and materials away from open sparks, flames and extreme heat.
6. Take necessary precautions when using solvents and adhesives near fresh air intakes.
7. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

#### B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.

## Part One - General (cont.)

### 6. Job Conditions (cont.)

#### B. Protection (cont.)

3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

#### C. Additional Precautions

1. Adverse weather conditions (e.g. extreme temperature, high winds, high humidity and moisture) could have a detrimental effect on adhesives, general production efforts, and/or the quality of the finished installation. Contact FTCS for recommendations and acceptable tolerances.
2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive the new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by local, state and federal authorities.
5. All construction debris shall be removed from the construction site and legally disposed of offsite.

### 7. Coordination

- A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, and owner/owner's representative(s) to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
- B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
- C. FTCS shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.
- D. Field services are provided at the discretion of Seaman Corporation. A minimum two weeks notice is required to evaluate and coordinate any request for onsite technical assistance.

### 8. Warranty

#### A. Inspections

1. An FTCS representative shall inspect the completed FiberTite Roofing installation, and upon acceptance, Seaman Corporation shall issue the preauthorized warranty, subject to the terms and conditions of the sample warranty and contract documents.

#### B. Available Warranties

1. Seaman Corporation offers the following FiberTite Membrane Roofing System warranties:
  - a. Material Warranty provides the building owner protection against the cost of repairing defects in the membrane only. This warranty is offered at no cost to the owner.

## Part One - General (cont.)

### 8. Warranty (cont.)

#### B. Available Warranties (cont.)

1. Seaman Corporation offers the following FiberTite Membrane Roofing System warranties (cont.):
  - b. Standard Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation for a period of 10 years. There is a nominal premium.
  - c. Extended Warranty provides the building owner protection against the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation beyond ten years. There is an additional premium.

#### C. Maintenance

1. Seaman Corporation offers a Single Source Warranty inclusive of the membrane roofing system and overburden removal of the FiberTite Green Garden Roof under the following:
  - a. Vegetated Garden Roof shall be FiberTite Green as supplied by Seaman Corporation.
  - b. Membrane roof system shall incorporate an EVM Leak Monitoring System as supplied by Seaman Corporation.

#### D. Accessibility

1. It shall be the responsibility of the owner to remove and replace the overburden (garden system and all related components) to expose the membrane roofing system for any and all warranty services.

#### E. Maintenance

1. Along with the issuance of the warranty, a set of instructions shall be included detailing preventative maintenance requirements on the part of the building owner and noting a list of harmful substances, which may damage the FiberTite membrane.

## Part Two - Products

### 1. General

- A. All products and components for the FiberTite Green Roofing System shall be supplied by Seaman Corporation.
- B. Components other than those manufactured and/or supplied by Seaman Corporation shall be submitted for review, prior to ordering. Any product(s) not specifically authorized in writing for the project by Seaman Corporation, shall be considered unacceptable and their performance excluded from the warranty.
- C. FiberTite Green Roofing System membranes are to be adhered directly to preapproved insulation, coverboard or composites thereof. Contact FTCS for additional information regarding compatible substrates.

## Part Two - Products

### 2. Membrane

#### A. FiberTite Membrane

FiberTite is a nominal 36-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite, conforming to the physical properties as outlined in the associated data sheet. FiberTite exceeds all requirements outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### B. FiberTite-XT Membrane

FiberTite-XT is a nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-XT, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XT greatly exceeds all requirements outlined ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### C. FiberTite-SM Membrane

FiberTite-SM is a nominal 45-mil ketone ethylene ester (KEE) membrane, reinforced with a 5.0-oz yd<sup>2</sup> knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite-SM, conforming to the physical properties as outlined in the associated data sheet. FiberTite-SM exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

#### D. FiberTite-XTreme Membrane

FiberTite-XTreme is a nominal 90-mil ketone ethylene ester (KEE), reinforced with a 12.5-oz yd<sup>2</sup> woven polyester mat, as manufactured by Seaman Corporation, under the trade name FiberTite-XTreme, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XTreme greatly exceeds the physical property requirements and the surface compound meets the polymer content definitions as outlined in ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

#### E. FiberTite-FB Membrane

FiberTite, FiberTite-XT, and FiberTite-SM are all available in fleece back versions for adhered roofing. FiberTite-FB membranes have a heat bonded 4 oz. polyester backing, as manufactured by Seaman Corporation, under the trade name FiberTite-FB, conforming to the physical properties as outlined in the associated data sheet(s). FiberTite-FB exceeds the physical property requirements and definitions as outlined in ASTM D7654 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing per the individual sub-assembly/base membrane listed above.

#### F. Flashing Membrane

Nominal 36-mil FiberTite, 45-mil FiberTite-SM, or 50-mil FiberTite-XT, membrane shall be used for all respective roofing system flashing requirements to match the field membrane and warranty expectations selected for the roofing system

#### G. Acceptable Substrate(s)

1. Authorized rigid insulation or coverboard
2. Structural Concrete, insulated or non-insulated
3. Insulated Steel Decking
4. Cellular, lightweight insulating concrete



## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation"

#### A. FTR Adhesives

Adhesives, supplied by **Seaman Corporation** have been specially formulated for **FiberTite Roofing Systems**.

**NOTE:** Solvent borne adhesives are not compatible with polystyrene insulation. Application technique and coverage rates will vary according to substrate and environmental conditions.

##### 1. FTR-190e Bonding Adhesive

A **VOC compliant** solvent borne, contact (**two-sided**) bonding adhesive, designed for bonding non-fleece back **FiberTite** membranes to properly prepared and preauthorized horizontal and vertical substrates.

##### 2. FTR-290 Adhesive

A **VOC compliant** solvent borne adhesive, one side application (substrate only), designed for bonding **FiberTite-FB (fleece back)** membranes to properly prepared and preauthorized horizontal substrates.

##### 3. FTR-390 Adhesive

A rubberized/asphalt water borne emulsion adhesive, **VOC compliant**, one side application (**substrate only**), designed for bonding **FiberTite-FB (fleece back)** membranes to properly prepared and preauthorized horizontal substrates.

##### 4. FTR-490 Adhesive

A polymeric water borne, **VOC compliant** adhesive, one side application (substrate only), designed for bonding **FiberTite-FB (fleece back)** and **FiberTite-SM** to properly prepared and preauthorized horizontal substrates.

##### 5. FTR #201 Mastic

A trowel grade elastomeric adhesive/sealant used to adhere **FiberTite** flashing membranes to preapproved vertical substrates.

#### B. FTR Fasteners

##### 1. FiberTite MAGNUM Series

To secure **FiberTite** Membranes to steel, wood and structural concrete decks. A **#15-13**, buttress threaded, **#3 Phillips head** fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

##### 2. FiberTite-HD

To secure insulation to steel, wood and structural concrete decks. A **#14-13**, heavy duty threaded steel **#3 Phillips truss**, self tapping corrosion resistant fastener.

#### C. FTR Stress Plates

##### 1. FTR-Magnum Series Barbed Stress Plates

Used to secure **FiberTite** membranes:

###### a. FTR Magnum Plus

1.5" x 2.75" Barbed Rectangular Stress Plate with radial corners; manufactured from **18-gauge AZ-50** galvalume steel.

###### b. FTR Magnum R275

2 3/4" Barbed Round Stress Plate; manufactured from **20-gauge** galvanized steel.

###### c. FTR Magnum 2S

2 3/8" Barbed Round Stress Plate; manufactured from **20-gauge** galvanized steel.

## Part Two - Products (cont.)

## 3. Related Materials "By Seaman Corporation" (cont.)

## C. FTR Stress Plates (cont.)

## 2. FTR 3-in Metal Round Insulation Stress Plates

Finished with AZ-50 galvalume and have a flat/flush profile for use on rigid board surfaces.

## D. Vegetated System Components

## 1. FiberTite Green Multilayer System

- a. Protection layer (when required) shall be a minimum 12 oz/yd<sup>2</sup> needle-punched polyester geotextile.
- b. A 0.375" drainage layer composed of extruded polyester woven into an entangled cusped geometric patterned matrix with heat-welded junctions forming a resilient structure specifically designed to promote proper drainage and ventilation of growing media.
- c. Non-woven polypropylene filter layer attached to drainage layer.
- d. A 0.5" water retention layer shall be a high-loft, non-woven geotextile consisting of durable thermal-bonded polyester fibers treated with insoluble polymer resins to form an evenly distributed, three-dimensional blanket matrix specifically intended for water retention, drainage and anchorage points for promoting solid root structures for plants.
- e. A 0.125" mill-finished aluminum metal edge and trim to frame and connect walkway systems, material changes, and adjacent building components.

## 2. FiberTite Green Tray System

- a. Protection layer (when required) shall be a minimum 12 oz/yd<sup>2</sup> needle-punched polyester geotextile.
- b. Trays: 2' square x 4.625" deep interlocking trays
- c. Injection molded, 100mil polypropylene.
- d. Plastic tray pins.
- e. Hook and plastic tray pins for drip irrigation system.
- f. Metal Edger: 26-gauge stainless steel or 18-gauge mill-finished aluminum metal trays and walkways to frame, connect and tie tray and walkway systems into each other and adjacent building components.
- g. Irrigation System.

## 3. Growing Media

- a. Growing media; based on German FLL Greenroof Guidelines.
- b. Produced from organic recycled material and inorganic by-products for use as a lightweight growing media for hardy, long-lasting succulent or phytoremediation plants that are beneficial in a green roof environment.
- c. Pre-blended regionally and delivered to site for application in:
  - i. Bulk: 1.5 yd<sup>3</sup> or 2 yd<sup>3</sup> totes.
  - ii. Bulk: 1.5 ft<sup>3</sup> bag.

## 3. Plants

- a. Mix of firewise/firesafe, hardy, long-lasting fibrous succulents, capable of thriving in a limited irrigated rooftop environment for project location.
- b. Selections conforming to USDA hardiness zone classification and regional horticulturists recommendation and as accepted by designer.
- c. Pre-blended regionally and delivered to site for application in:
  - i. Sedum Tiles (pre-planted).
  - ii. Sedum Mats (pre-planted).
  - iii. Plugs (minimum 1.5" wide plugs).
  - iv. Unrooted cuttings (sedum cuttings).

## Part Two - Products (cont.)

### 3. Related Materials "By Seaman Corporation" (cont.)

#### E. EVM Leak Detection

1. **ConDUCT Stainless Steel Mesh**  
Open Net, 304 Stainless, 0.75" nominal mesh opening.
2. **Boundary Cable**  
Conductive loop that forms the test area and is attached to and powered by the impulse generator.  
The cable can be manufactured from several conductive materials.

#### D. Additional Components

1. **FTR Protection Layer**  
12 oz/yd<sup>3</sup> needle-punched polyester geotextile separation sheet.
2. **FTR-101 Sealant**  
A single-component gun-grade polyether sealant to seal flashing termination.
3. **FiberClad Metal**  
To fabricate metal flashing, 4' x 10' sheets of 24-gauge, hot-dipped G-90 steel, or 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.
4. **FTB-Premolded Flashing(s)**  
Injection-molded, vent stack, split WrapidFlash® and inside/outside corner flashing using FiberTite vinyl compound.
5. **FTB Non-Reinforced Membrane**  
Field fabrication membrane, 60-mil non-reinforced FiberTite Vinyl membrane.
6. **FTR-Tuff Track Walkway & Protection Pads**  
High grade walk way/protection material with slip-resistant design.
7. **FTR-Termination Bar**  
Membrane flashing(s) restraint/termination seals, nominal 0.125" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8" on center.
8. **FiberTite Metal Fascia System**  
Two piece, snap-on, pre-formed, architectural Kynar® fluoropolymer metal edge systems.
9. **FTR-Value Insulation**  
Polyisocyanurate and extruded polystyrene flat or tapered insulation.
10. **FTR-601**  
Dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation and insulation composites and/or cover boards to structural roof decks and base sheets.
11. **FTR-T-Joint Covers**  
Pre-cut 4"x4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.
12. **FTR-Cover Board**  
Gypsum or gypsum/cellulose core board.

## Part Two - Products (cont.)

## 4. Related Materials

## A. Wood Nailers

1. Wood Nailers are being tested to determine the effect of preservatives on metal components. Borate treated lumber seem to be the less corrosive and is strongly recommended. Installation of other types of treated lumber should be verified with a design professional.
2. Wood shall be **No. 2** or better construction grade lumber.
3. Creosote or asphaltic type preservatives are not acceptable.
4. Minimum top nailer thickness shall be **1.5 inches** nominal.

## B. Vapor Retarder

1. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional. Consult **N.R.C.A.** or other technical resource for appropriate guidelines.
2. Use of a Vapor Retarder in the **FiberTite Roofing System** may require additional insulation attachment beyond the specified. Consult **FTCS** for guidelines.

## C. Insulation

NOTE: For the purpose of this guide specification, unless explicitly defined otherwise, the term insulation is used interchangeably to refer to rigid insulation materials, tapered or flat, cover board, thermal barriers and or multilayered composites.

1. Insulation shall be installed, where specified and/or required to provide a suitable surface for the **FiberTite Roofing Systems** and/or meet desired thermal values.
2. Acceptable products must be preapproved in writing by **Seaman Corporation** and comply with the minimal characteristics and classification listed for the products below:
  - i. FTR-Value Polyisocyanurate  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
 UL Classification: **Class A**.  
 Density: **2.0 pcf**. Minimum  
 Meet requirements of **ASTM C1289**
  - ii. FTR-Value XPS  
**FM approved** rigid insulation meeting **Class A 1-90**, for fire and wind.  
 UL Classification: **Class A**.  
 Density: **1.5 pcf**. Minimum  
 Meet requirements of **ASTM D1621**
  - iii. Gypsum Core Cover Board  
**FM approved** meeting **Class A 1-90**, for fire and wind.  
 UL Classification: **Class A Assembly**.  
 Meet requirements of **ASTM C 473**  
 Georgia-Pacific Gypsum LLC **DensDeck®Prime**  
 or United States Gypsum Company **Securock®**

## D. Adhesives for Insulation Attachment

## 1. General

- a. Adhesive not specifically supplied by **Seaman Corporation** shall be listed and approved by **Factory Mutual Research** in conjunction with the specified insulation and specific substrate.
- b. Adhesive shall meet minimum roofing system design requirements as evidenced by testing in conjunction with the proposed substrate and/or composite; under **FM-Global** requirements or acceptable third party laboratory.

## Part Two - Products (cont.)

### 4. Related Materials (cont.)

#### D. Adhesives for Insulation Attachment (cont.)

1. **General** (cont.)
  - c. Adhesive manufacturer shall provide written specifications regarding the safe handling, storage and surface preparation for a quality application of the product.
2. **Polyurethane**
  - a. Adhesive shall be either a dual or single component polyurethane adhesive, dispensed from a portable pressurized container or traditional foam equipment.
  - b. **Preapproved products**
    - i. FTR-601
    - ii. FiberTite CR-20
3. **Hot Asphalt**
  - a. Asphalt shall be **Type III** or **Type IV** steep asphalt, according to **ASTM D-312**.
  - b. Asphalt shall be applied within **25°F** of the asphalt manufacturer's recommended Equiviscous Temperature (**EVT**). If the manufacturer does not supply the **EVT**, **Seaman Corporation** recommends a temperature range of **425°F** for mopping and **450°F** for mechanical spreaders. Asphalt applied within **25°F** of the **EVT**, under normal environmental conditions; will provide a nominal **23-25 pounds** of asphalt per **100 square feet**.
  - c. The roofing contractor is responsible for maintaining the temperature tolerances at the kettle as well as the rooftop at all times.
  - d. Cold weather application can cause significant drops in the temperature of the asphalt during transport to the roof and points of application. Insulated equipment is recommended during cold weather applications.
  - e. All projects utilizing hot asphalt for insulation securement require written authorization, prior to the bidding process, by **Seaman Corporation**.

#### E. Hardscape

1. **Concrete Pavers**  
Minimum **2' x 2' x 2"** freeze/thaw resistant, pre-cast, concrete paver blocks for pathways and retention of growing medium.
2. **Stone Ballast**  
Nominal **2.5"** diameter **#2** river-washed, stone conforming to **ASTM D448**.  
Used for membrane ballast and or drainage
3. Pre-cast stone, wood timbers and other landscape items as necessary and/or appropriate to create transitions between the rooftop garden and other roof areas.

## Part Three - Execution

### 1. General

- A. The "Authorized" roofing contractor shall ensure strict compliance with **FTR GS02/13; General Guide Specifications for Installation of FiberTite Roofing Systems**.
- B. The roofing contractor shall provide a suitable substrate surface for the proper installation of the **FiberTite Green Roofing System**, roof insulation and specified components.

### Part Three - Execution (cont.)

#### 1. General (cont.)

- C. Application of Seaman Corporation/FiberTite materials constitutes an agreement that the roofing contractor has inspected and found the substrate suitable for the installation of the FiberTite Green Roofing System.
- D. The roofing contractor shall coordinate the installation to ensure that the system remains watertight at the end of each working day.

#### 2. Substrate Preparation

- A. The roofing contractor shall verify that the deck condition and/or existing roof construction is suitable for the specified installation of the FiberTite Green Roofing System.
- B. Seaman Corporation requires fastener withdrawal values (pull out tests) on all reroofing projects to verify the suitability of decking to accept a mechanically fastened insulation system.
- C. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, ice, wet insulation, unevenness or any other defect which would prevent the proper execution and quality application of the FiberTite Membrane Roofing System as specified.
- D. Prepared substrate shall be smooth, dry, and free of debris and/or any other irregularities which would interfere with the proper installation of the FiberTite Green Roofing System.
- E. The application of adhesives or hot asphalt directly to structural concrete, gypsum, Tectum™, lightweight insulating concrete, existing smooth and/or granulated BUR materials may require sealing or priming with an appropriate elastomeric or asphalt primer prior to application.
- F. Adhesives will not bond to wet, damp or inadequately cured lightweight insulating concrete or poured structural concrete.
- G. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

#### 3. Substrate Preparation (New Construction)

- A. Confirm substrate suitability as specified and required in 5.1 (FTR GS02-13) Part 3, Section 3: Substrate Preparation (New Construction).

#### 4. Substrate Preparation (Re-Roofing)

- A. Confirm substrate suitability as specified and required in 5.1 (FTR GS02-13) Part 3, Section 4: Substrate Preparation (Re-Roofing).

#### 5. Wood Nailers

- A. Install treated lumber at the same heights as insulation layer or adjacent construction  $\pm 0.25$  inch. Continuous treated wood nailers are to be installed at all perimeters, around roof projections and penetrations as shown in approved details.
- B. Where wood nailers are installed directly on the substrate, the substrate shall be carefully examined to confirm that the entire area provides a suitable fastening surface. All defects shall be repaired by the appropriate trade prior to installation.
- C. Nailers shall be at least 3.5 inches wide and 1.5 inches high and installed and anchored in such a manner to resist a force of 250 lbs. per linear foot of wood blocking in any direction.
- D. Nailers along parapets, curbs and expansion joints are recommended for insulated decking. Consult FiberTite Construction Details or FiberTite Technical Customer Services for optional/alternate membrane termination/securement methods.

## Part Three - Execution (cont.)

### 6. Roof Insulation

#### A. General

1. Install roof insulation according to and in complete conformance with project specifications.
2. Roof insulation shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered a minimum 12".
3. Insulation shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 0.375 of an inch. Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
4. Install no more than can be covered during the same working day.
5. Taper roof insulation to drain sumps using tapered edge strips. If an insulation layer is 1.5 inches or less, taper 12 inches from the drain bowl. If insulation thickness exceeds 1.5 inches, taper 18 inches from the drain bowl. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
6. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration and/or damage.

### 7. Electronic Vector Mapping (EVM) Leak Detection

(AS REQUIRED FOR SINGLE SOURCE VEGETATED ROOF SYSTEM WARRANTY)

#### A. General

1. The ConDuct grounding screen is used to provide grounding for manual electronic leak detection tests.
2. The grounding screen shall be installed over the roof insulation and or directly below the approved cover board for FiberTite Green Vegetated Roof Systems utilizing adhered roofing membranes.
3. For mechanically fastened membranes utilizing FiberTite Green Vegetated Roofing Systems the grounding screen may be installed directly over the coverboard prior to mechanically fastening the membrane.
4. Unroll grounding screen over substrate.
5. Overlap adjacent runs of grounding screen a minimum of 3". Positive contact between adjacent runs of screen is required at both side and end laps.
6. Tape adjacent layers together using duct tape or aluminum tape spaced between 5' and 10' to prevent shifting.
7. Connect the grounding screen to conductive part of the structure (i.e. metal deck, metal curb, metal vent stack or metal drain body) at several separate locations.
8. Do not ground the screen mesh to lightning protection.

### 8. Cover Board Installation

#### A. General

1. For mechanically fastened membranes, loose lay the coverboard directly over the insulation and then mechanically fasten the coverboard through the mesh per preliminary securement requirements for the coverboard.
2. For adhered cover board installation over a grounding screen, install FTR 601 Insulation Adhesive directly over loose laid grounding mesh. Space adhesive ribbons according to project specifications and/or as required for specified uplift resistance.
3. Place the cover board directly over the screen/ribbons of adhesive and walk-in to assure good contact. The insulation adhesive will bond the cover board to the insulation through the grounding mesh.

### Part Three - Execution (cont.)

#### 9. Installation of FiberTite Membrane(s)

##### A. Quality Control

1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation of the [FiberTite Membrane Roofing System](#).
2. The project foreman and or supervisor will be responsible for the daily execution of the Quality Control program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within the [FiberTite Membrane Roofing System](#).
3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity of the installation.

##### B. General

1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
2. All [FiberTite Membrane Roofing Systems](#) shall be designed utilizing and determined to be in compliance with the procedures outlined within the current publication of [ASCE Standard 7](#). Alternative designs may be determined using the criteria within [Factory Mutual Research Loss Prevention Data](#).
3. A [FiberTite Membrane Roofing System](#) may utilize conventional roll goods, or custom pre-welded panel rolls, or a combination of both.
4. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives when necessary.
5. When using adhesives outside ambient air temperature shall be above 40°F. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
6. Humidity can affect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
7. No moisture may be present on the adhesive(s) prior to mating or application of [FiberTite](#) membranes.
8. [FiberTite Membrane Roofing Systems](#) shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

##### C. Membrane Installation

1. Refer to and follow [Seaman Corporation Guide Specifications](#) as referenced in [5.10 Part 1, Section 2: References](#) for the Installation of [FiberTite Roofing Systems](#) and/or specific membrane system application method(s) as dictated by project specifications.

##### D. T-Joint Cover Installation

1. Installation of [T-Joint Covers](#) is mandatory on all [FiberTite Green Vegetated Roof Systems](#).
2. Install [T-Joint Covers](#), centered and aligned so edges are parallel to roof system seams.
3. The T-Joint Cover shall be 100% welded.



## Part Three - Execution (cont.)

### 9. Installation of FiberTite Membrane(s) (cont.)

#### E. Welding

##### 1. General

- a. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
- b. All field seams must be clean and dry prior to initiating any field welding.
- c. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative.
- d. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
- e. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch.
- f. All membrane T-Joints Covers shall receive a minimum 3" x 3" cover.
- g. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

##### 2. Hot Air Hand Welding

- a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
- b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
- c. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

##### 3. Automatic Hot Air Machine Welding

- a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment. Contact FTCS for specific recommendations.
- b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
- c. Follow local code requirements for electric supply, grounding, and surge protection.
- d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
- e. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.

#### F. Membrane System Inspection

1. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.

**Part Three - Execution** (cont.)**9. Installation of FiberTite Membrane(s)** (cont.)**F. Membrane System Inspection** (cont.)

2. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current **FiberTite Roofing Systems Specifications and Details**.
3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of **FINAL INSPECTION FOR WARRANTY ACCEPTANCE**.
4. Any deviation from pre-approved specifications and/or details requires written authorization from the **FTCS** prior to application to avoid any warranty disqualification.
5. It is the contractor, job foreman, and supervisor and/or quality control personnel's responsibility to perform a final self inspection on all seams prior to requesting the inspection for warranty issuance by the **FTCS**.

**10. Flashing**

- A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.
- B. Remove all loose and/or deteriorated cant strips and flashings.
- C. Flash all curbs, parapets and interior walls in strict accordance with approved **FiberTite** details.
- D. All flashing shall be adhered to properly prepared, approved substrate(s) with **FTR-490** Adhesive or **FTR-201** mastic applied in sufficient quantity to ensure total adhesion.
- E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of **8 inches**.
- F. Vertical flashing shall be terminated no less than **8 inches** above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.
- G. When using **FTR-201** as the adhesive, vertical wall flashing termination shall not exceed **40 inches** without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.
- H. Complete all inside and outside corner flashing details with **FiberTite** pre-formed corners or an approved field fabrication detail.
- I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
- J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification.)

**11. Metal Flashing**

- A. All perimeter edge details are to be fabricated from **FiberClad Metal** or utilize a prefabricated **FiberTite Fascia System**.
- B. Ensure all fascia extend a minimum of **2 inches** lower than the bottom of the wood nailers.
- C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners **8 inches** on center.
- D. Break and install **FiberClad** metal in accordance with approved details, ensuring proper attachment, maintaining **0.5 inch** expansion joints and the installation of a minimum **2 inch** bond breaker tape prior to sealing the joint.

## Part Three - Execution (cont.)

### 11. Metal Flashing (cont.)

- E. Solidly weld **FiberClad** expansion joints with a 6 inch strip of **FiberTite** membrane welded to the **FiberClad**, covering the bond breaker tape (cover plates are optional).
- F. **Roof Drains**
  - 1. Flash all roof drains in accordance with **FiberTite** roof drain details.
  - 2. Replace all worn or broken parts that may cut the **FiberTite** membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
  - 3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
  - 4. **FiberTite** non-reinforced 60-mil membrane shall be used for flashing the drain assembly. Drain assemblies and basins or sumps must be free of any asphalt or coal tar pitch residue prior to installation.
  - 5. The drain target sheet should be sized and installed to provide for a minimum of 12 inches of exposed 60-mil on all sides of the drain.
- G. **Pitch Pans**
  - 1. **EVERY REASONABLE EFFORT** shall be made to eliminate the need for pitch pans including the removal of all existing pans. Contact **FTCS** for specific design alternatives and recommendations.
  - 2. In the event of no alternative, fabricate pitch pans from **Fiber Clad** metal, installed in accordance with **FiberTite** details, ensuring proper attachment, maintaining a minimum of 2 inch clearance around the penetration.
  - 3. Pitch Pans shall be filled with non-shrinking grout to within 1 inch of the top of the pan. Allow the grout to dry and fill remainder of the pan with **FTR-SLS** pourable sealant.
  - 4. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

### 12. Expansion Joints

- A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to **FiberTite** specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
- B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (**FTR-PIN**) is submitted.

### 13. Sealants

- A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.
- B. Use primer when recommended by the manufacturer.
- C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

### 14. Temporary Seals

- A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.
- B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.

## Part Three - Execution (cont.)

## 14. Temporary Seals (cont.)

- C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.
- D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.
- E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of off site.

## 15. Quality Assurance Testing

- A. Prior to the installation of the vegetation roof system components, an interim inspection for warranty acceptance of the membrane system shall be coordinated with FTCS.
  - 1. Upon completion of the FiberTite Membrane System, the authorized roofing contractor shall complete and submit the FiberTite Project Completion Notice to FTCS.
  - 2. Upon receipt of the notice of completion, a FTCS representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with Seaman Corporation specifications and authorize the continuation of Quality Assurance Testing by either a water test or EVM testing per project requirements.
  - 3. Do not proceed with the installation of the vegetated garden roof components until all Quality Assurance Testing has been completed and the membrane roof system accepted by Seaman Corporation.
- B. Water tests are required on ALL projects requiring a standard FiberTite Commercial Roofing Warranty. FTCS must be present at all water tests.
  - 1. Plug all drains and flood the associated area to a minimum depth of 2". Let water stand for 24 hours.
  - 2. Remove all water from the test area and thoroughly inspect all the area for leaks or signs of water entry below the membrane roofing system. This shall include both and above and below the surface examination.
  - 3. The contractor shall be prepared to provide test cuts and the associated repairs if and when FTCS and/or the owner's representative request them.
  - 4. Any areas found to be wet or areas of water entry shall be opened, dried, repaired to Seaman Corporation standards, and retested as described in this section.
- C. EVM Testing is required for ALL FiberTite Green Single Source Warranties.
  - 1. Coordinate FiberTite Smartex electronic leak detection before installing the vegetated overburden and associated components.
  - 2. Ensure a roofing contractor representative is present and available to make immediate repairs in the event a breach in the membrane roof system is detected.
  - 3. Install the boundary cable directly on the FiberTite membrane 4" to 6" from the perimeter of the roof areas to be tested. The EVM Technician will determine the size and shape of the areas.
  - 4. Secure the boundary cable with duct tape to prevent movement or damage to the cable and so as not to create a tripping hazard.
  - 5. Wet the entire roofing membrane test area with water prior to the start of each test and maintain the wet condition for the duration of the testing. Ponding water is not necessary.

## Part Three - Execution (cont.)

### 15. Quality Assurance Testing (cont.)

#### C. EVM Testing (cont.)

6. Allow the testing technician to inspect the roof area. If a breach is detected the technician will report to the roofing contractor immediately.
7. Defects found shall be immediately repaired by the roofing contractor and retested by the technician.
8. The technician shall provide a test report documenting the initial status of the roofing membrane, testing procedures, daily activity and a schematic drawing indicating the location of defects and the stationary boundary cable.
9. Restrict construction traffic on the newly tested and accepted membrane system to only that which may be required to install the vegetated overburden components.

### 16. Protection Layer

- A. Inspect and verify that roofing membrane and components are complete and ready prior to installing the protection layer.
- B. Sweep the roof area with a broom and then blow remaining dust and debris from the membrane area to receive **FiberTite Green Vegetated Roofing System** components.
- C. The contractor shall loose lay the membrane protection layer over the finished membrane roofing system.
- D. All seams in the protection layer must be shingled and overlapped a minimum of 4".

### 17. Installation of Vegetated Roof Components

- A. The contractor shall limit traffic over the completed membrane roofing system.
- B. The contractor shall protect the completed membrane roofing system during the transport of rooftop garden components and growth medium.
- C. Install vegetated rooftop garden components in proper sequence and methodology as specified.
- D. **FiberTite Green Multi-Layer System**
  1. Place multilayer system directly over protection layer (if required)
    - a. Place drainage layer with attached filter layer parallel to roof slope.
  2. Butt seams and overlap with provided filter layer extension.
  3. Place retention layer over the drainage/filter layer composite perpendicular to roof slope.
  4. Promptly after placing multilayer on the roof, install growth media or ballast as necessary to prevent movement of multilayer due to weather and construction activities.
- E. **FiberTite Green Tray System**
  1. Place trays directly over protection layer..
  2. Position bottom troughs of trays perpendicular to roof slope, except at minor crickets.
  3. Orient and overlap edges to interlock and hold trays in place.
  4. Attach trays in place with standard plastic tray pin through the aligned holes in tray sidewalls.
  5. Secure trays together with plastic tray pin fasteners and install metal edger in place.
  6. If integral irrigation is being used, place hooks concurrently with trap pin in parallel direction of drip tube.

## Part Three - Execution (cont.)

### 17. Installation of Vegetated Roof Components (cont.)

#### E. FiberTite Green Tray System (cont.)

7. Promptly after placing trays on roof, install growth medium or ballast as necessary to prevent movement of trays due to weather or construction activities.
8. Irrigation System Placement
  - a. Layout and secure irrigation lines to trays using irrigation hook and plastic tray pin fastener system
  - b. Install poly-header at tray perimeter.
  - c. Connect drip tube to poly-header with supplied barb fittings.
  - d. Connect poly-header to water supply, including sub-mains, valves, and backflow prevention systems.

#### F. Metal Edge

1. For multilayer system:
  - a. Follow FiberTite Green details for interconnection of metal edge system.
  - b. Install trim flashing to conceal multilayer sides and/or to lock into metal counter flashing at building perimeter flashing systems as specified.
  - c. Install interlocking metal anchor flashing at openings between multilayer and perimeter roof edges to anchor multilayer, building perimeter flashing and counter flashing together.
1. For tray System:
  - a. Follow FiberTite Green details for installation of metal trim.
  - b. Install metal edge to conceal tray sides.
  - c. When using integrated irrigation system; place irrigation polyheader within irrigation edger.
  - d. Install interlocking metal edger at openings between trays and perimeter roof edges to anchor trays, building perimeter flashing and counter flashing together.

#### G. Growing Media

1. Transport bulk growing media to roof using stabilized hoisting equipment, blower truck or cranes.
2. Remove any and all debris within trays or on top of multilayer composite.
3. Distribute growing media evenly throughout tray system or across multilayer system.
4. Maintain a consistent finish grade.
5. Place media at required depth according to project specifications.

#### H. Planting

1. Install planting (plugs, tiles, mats, unrooted cuttings) conforming to landscape design and other requirements as specified.
2. Distribute differing plant species evenly for overall uniform appearance of overall installation.
3. Following installation of plant media, irrigate using potable water that is free of substances harmful to plant growth. Provide hoses in lengths reaching from water supply source to all plant material.

### 18. Walkways

- A. FiberTite walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic.
- B. Walkway Installation
  1. Roofing membrane to receive walkway material shall be clean and dry.

## Part Three - Execution (cont.)

### 18. Walkways (cont.)

#### B. Walkway Installation (cont.)

2. Cut and position the FiberTite walkway material as directed by the specifications or agreement.
3. Hot air weld the entire perimeter of the walk way to the previously cleaned FiberTite roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.

#### B. Hardscape Installation

1. Install Hardscape (ballast/pavers etc) walkways and borders according to project drawings and FiberTite Green details.

#### C. Protection Pad Installation

1. Roofing membrane to receive protection pad material shall be clean and dry.
2. Prior to installing the FiberTite protection pads (0.25" x 2' x 4'), weld a 6" x 6" strip of FiberTite membrane to each of the four corners of the back side of the pad. Position the strips in such a way that they overhang the edge of the pad a minimum of 2 inches around the 90° corner.
3. Position the FiberTite protection pads as directed by the specifications or agreement and weld the visible portion of the previously applied stripping to the FiberTite roofing membrane.

### 19. Lightning Protection

- A. The installation of lightning protection must be coordinated with the authorized FiberTite roofing contractor, certified lightning contractor and the building owner.
- B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of preapproved flashing details.
- C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of FiberTite membrane over the base plates and cables to the FiberTite roofing. Contact FTCS for specific adhesive recommendations.
- D. Recommendations regarding the selection of adhesives or alternative affixing of lightning protection systems to the FiberTite membrane does not in any way imply a warranty covering their performance or ability of the adhesives to remain affixed to the FiberTite membrane.

### 20. Completion

- A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
- B. Inspect all field welds, detailing and terminations to ensure a 100% watertight installation.

### 21. Final Inspection for Warranty

- A. Coordinate the final inspection of the completed FiberTite Green Vegetated Roof System with owner, architect, contractor and FTCS.
- B. Make adjustments and alignments of garden roof system components as necessary to give a uniform and finished appearance.
- C. Replace plant media that appears to be stressed or damaged.
- D. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty form.

**Part Three - Execution (cont.)****21. Final Inspection for Warranty (cont.)**

- E. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the approved [Seaman Corporation/FiberTite Preinstallation Notice](#) will be issued.

**22. Vegetated Garden Roof Maintenance**

- A. Maintain a uniform stand of succulent plants by watering and maintain vegetated system for a minimum period of **90 days** following installation and through substantial completion and occupancy by owner.
1. Include watering, spot weeding, fertilization and other measures as necessary to maintain health and propagation of plant materials and as necessary for stabilization.
  2. Instruct owner and furnish written maintenance instructions, following maintenance period, as necessary for planting materials to develop complete root structure and to become stabilized.
  3. Provide periodic hydration as needed, depending on precipitation.
  4. Follow horticultural/nursery recommended plant maintenance procedures.
- B. **Annual Maintenance Agreement**
1. Following initial construction maintenance, consult with owner to negotiate for the continuance of the maintenance of vegetated garden system as offered by contractor.
  2. Include watering for first year after installation to ensure proper root development.
  3. Continued watering should be done on an as needed basis.

**END of SECTION FTG VRS05/13**





# Material Safety Data Sheets



<b>FiberTite® Roofing Membranes</b>	<b>6.1</b>
<b>FiberTite® SBS Roofing Membranes</b>	<b>6.2</b>
<b>Style 80 Roofing Membranes</b>	<b>6.3</b>
<b>FiberTite® FTR-101 Sealant</b>	<b>6.4</b>
<b>FiberTite® FTR-190e Adhesive</b>	<b>6.5</b>
<b>FiberTite® FTR-201 Mastic</b>	<b>6.6</b>
<b>FiberTite® FTR-290 Adhesive</b>	<b>6.7</b>
<b>FiberTite® FTR-390 Adhesive</b>	<b>6.8</b>
<b>FiberTite® FTR-490 Adhesive</b>	<b>6.9</b>
<b>FiberTite® FTR-601A Adhesive</b>	<b>6.10</b>
<b>FiberTite® FTR-601B Adhesive</b>	<b>6.11</b>
<b>FiberTite® FTR-SLS Sealant</b>	<b>6.12</b>

## FIBERTITE® ROOFING SYSTEMS

## 2014 Technical Bulletin # 2014.001

RE: [Seaman Corporation/FiberTite Brand Products](#)  
Safety Data Sheet (SDS)  
and Material Safety Data Sheet (MSDS)

Issue Date: June 26, 2015

According to Federal Regulations, FiberTite Roofing Systems accessory products made available under the following brand references:

FiberTite Fasteners  
FiberTite Metal Stress Plates  
FiberTite Plastic Stress Plates  
FiberClad Metal

FiberTite Termination Bar  
FiberTite Boots and Corners  
FiberTite T-Joint Covers  
FiberTite Non-Reinforced 60-mil Film

...meet the OSHA definition of an "Article" under 29 CFR 1910.1200® and do not require a Safety Data Sheet as indicated under 29 CFR 1010.1200(b)(6)(v).

Articles of Manufacture are defined as:

*"...a manufactured item which is formed to a specific shape or design during manufacture, which has end use functions depending in whole or in part upon its shape or design during end use and which does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use."*

As the above referenced products fall under the definition of [Articles of Manufacture](#), there is no need for an SDS and subsequently, [Seaman Corporation](#) does not provide them for the products referenced.

If you have any concerns or questions regarding the Bulletin, please feel free to contact [FiberTite Technical Services](#) at: 1-800-927-8578.



## Material Safety Data Sheet

### FiberTite® Roofing Membranes

NOTE: This product meets the definition of "article" under the OSHA Hazard Communication Regulations in 29 CFR 1910.1200(c) and is exempt from the requirement to provide a Safety Data Sheet per 29 CFR 1910.1200(b)(6)(v). This MSDS is provided on a voluntary basis to provide additional information to customers.

Rev. Date: 10 Oct 2014

#### SECTION 1. IDENTIFICATION

**Product Name:** FiberTite® Roofing Membranes

**Trade Names:** FiberTite® FiberTite®-FB  
FiberTite®-XT FiberTite®-XT FB  
FiberTite®-SM FiberTite®-SM FB  
FiberTite®-Xtreme FiberTite®-Xtreme FB  
FiberTite®-Brite™ with Kynar®

**Recommended Use:** Roofing/waterproofing

**Manufacturer:** SEAMAN CORPORATION 1000 Venture Blvd.  
Wooster, OH 44691 USA

**PHONE:** (330) 262-1111  
**INTERNET:** www.seamancorp.com  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

This material does not meet any hazard classification under the HCS.

Under normal use and handling, the product is not expected to create any physical or health hazards.

Excessive heating may result in the generation of smoke or fumes containing hydrogen chloride, carbon dioxide, carbon monoxide, and trace amounts of organic compounds due to decomposition of the components. These fumes may be irritating to respiratory tract and eyes.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Exposure to individual components is not expected under normal conditions of use. Listing of major components and exposure limits are given for reference only.

<u>Regulated Components</u>	<u>CAS No.</u>	<u>Weight %</u>
Titanium Dioxide	13463-67-7	0-15%
Antimony Trioxide	1309-64-4	<5%
Folpet	133-07-3	<1%
<u>Major Components</u>	<u>CAS No.</u>	
Nylon or Polyester fabric	NA	
PVC Resin	9002-86-2	
Ketone Ethylene Ester copolymer	**	
Alkyl phthalate plasticizer	**	
Polyester non-woven fleece (FB products only)	NA	
Ethene, 1,1,-difluoro-, homopolymer (FiberTite-Brite only)	24937-79-9	

\*\* Specific chemical identity is withheld as a trade secret under 29 CFR 1910.1200(i).

# 6.1 FiberTite® Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® Roofing Membranes

Rev Date: 10 Oct 2014

### SECTION 4. FIRST AID MEASURES

<b>Inhalation:</b>	If exposed to fumes from overheating or combustion, move to fresh air. Seek medical attention if symptoms persist.
<b>Skin Contact:</b>	Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention.
<b>Eye Contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
<b>Ingestion:</b>	Not applicable

### SECTION 5. FIRE FIGHTING MEASURES

<b>Flammable Properties:</b>	Material will burn if exposed continuously to an external combustion source and yield hydrogen chloride, carbon monoxide, carbon dioxide, and small amounts of aliphatic and aromatic hydrocarbons.
<b>Suitable Extinguishing Media:</b>	Water fog, CO <sub>2</sub> , foam or dry chemical (CAUTION: CO <sub>2</sub> will displace air in confined spaces and may cause an oxygen deficient atmosphere.)
<b>Products of Combustion:</b>	Hydrogen chloride, carbon dioxide, carbon monoxide, trace amounts of aliphatic and aromatic organics
<b>Protection of Firefighters:</b>	Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8. Wash hands after repeated handling. When hot air or wedge welding, insure adequate local ventilation to prevent the buildup of fumes.  Unwinding, winding, and passage of the fabric through and over rollers can generate a strong electrostatic charge on the surface of the fabric. Static discharge devices should be used when handling in this way.
<b>Storage:</b>	Rolled goods should be kept dry and protected from moisture.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation for any thermal processing operations.
<b>Eye/Face:</b>	Wear safety glasses during processing
<b>Skin:</b>	Wear general purpose gloves during prolonged handling
<b>Respiratory:</b>	Provide adequate local ventilation. If exposure limits are exceeded, NIOSH approved respiratory protection must be provided.
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

# 6.1 FiberTite® Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® Roofing Membranes

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### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
PVC Resin (9002-86-2)	-	-	-	None established
Folpet (133-07-3)	-	-	-	None established
Titanium Dioxide (13463-67-7)	15 mg/m <sup>3</sup> TWA (total dust)	10 mg/m <sup>3</sup> TWA	-	
Antimony Trioxide (1309-64-4):	0.5 mg/m <sup>3</sup> TWA as Sb	0.5 mg/m <sup>3</sup> TWA as Sb	0.5 mg/m <sup>3</sup> TWA as Sb	

**NOTE:** Due to product form, exposure to dust or fume is not expected to occur; exposure limits are given for reference only.

### Potential byproducts from thermal processing/overheating:

	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Hydrogen Chloride (7647-01-0)	5 ppm (7 mg/m <sup>3</sup> ) Ceiling	2 ppm (2.98 mg/m <sup>3</sup> ) Ceiling	5 ppm (7 mg/m <sup>3</sup> ) Ceiling	The odor threshold for HCl is 0.25 ppm
Carbon Monoxide (630-08-0)	50 ppm (55 mg/m <sup>3</sup> ) TWA	25 ppm (29 mg/m <sup>3</sup> ) TWA	35 ppm (40 mg/m <sup>3</sup> ) TWA; 200 ppm (229 mg/m <sup>3</sup> ) Ceiling	

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Polymeric sheeting	<b>Odor:</b>	Characteristic
<b>Odor threshold:</b>	NA	<b>pH:</b>	NA
<b>Melting/Freezing Point:</b>	NA	<b>Boiling Point:</b>	NA
<b>Flash Point:</b>	NA	<b>Evaporation Rate:</b>	NA
<b>Flammability:</b>	NA	<b>LFL/UFL:</b>	NA
<b>Vapor Pressure:</b>	NA	<b>Vapor Density:</b>	NA
<b>Relative Density:</b>	NA	<b>Solubility:</b>	none
<b>Partition Coefficient K<sub>ow</sub>:</b>	NA	<b>Auto-Ignition Temp.:</b>	850°F
<b>Decomposition Temp.:</b>	Not determined	<b>Viscosity:</b>	NA

## SECTION 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Not reactive
<b>Chemical Stability:</b>	Stable at normal temperatures
<b>Hazardous Reactions:</b>	Will not occur
<b>Conditions to Avoid:</b>	Prolonged excessive heating
<b>Incompatible Materials:</b>	None known.
<b>Hazardous Decomposition:</b>	Thermal decomposition products: Hydrogen chloride, carbon dioxide, carbon monoxide, trace amounts of aliphatic and aromatic organics

## SECTION 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Smoke generated from heating or burning the product is the primary health effect.
<b>Inhalation:</b>	Irritation of the upper respiratory tract may occur from fumes and smoke generated during heating
<b>Skin Contact:</b>	Prolonged handling may cause mechanical irritation
<b>Eye Contact:</b>	Fumes from heating may cause irritation, redness, and burning
<b>Ingestion:</b>	Not an expected route of entry
<b>Target Organs:</b>	Lungs/respiratory tract, eyes

# 6.1 FiberTite® Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® Roofing Membranes

Rev Date: 10 Oct 2014

### ACUTE TOXICITY

#### General Information:

No data available for this product as a whole. Adverse health effects would not be anticipated with normal use. However, thermal processing can emit fumes which may cause eye and respiratory irritation.

#### Component Analysis:

Due to the physical form of the product, exposure to the chemical components of the fabric and coating is not expected. Contact manufacturer (contact information in Section 16) to obtain detailed information regarding component toxicity.

### CARCINOGENICITY

#### General Information:

This product has not been evaluated by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### Component Analysis:

PVC Resin (9002-86-2):

IARC: Group 3 – Not Classifiable (Vol. 19, Suppl. 7, 1987)

Antimony Trioxide (1309-64-4):

IARC: Group 2B – Possibly Carcinogenic to Humans (Vol. 47, 1989)

ACGIH: A2 – Suspected Human Carcinogen

Titanium Dioxide (13463-67-7):

IARC: Group 2B – Possibly Carcinogenic to Humans (Vol. 93, 2010)

ACGIH: A4 – Not Classifiable as a Human Carcinogen

NIOSH: Potential occupational carcinogen

Folpet (133-07-3):

EPA: B2 – Probable Human Carcinogen (sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies)

### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

## SECTION 12. ECOLOGICAL INFORMATION

No data is available on the adverse effects of this product on the environment. Toxicity is expected to be low based on insolubility in water.

## SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material is not hazardous in its manufactured form under the Resource Conservation and Recovery Act. (40 CFR 261)

## SECTION 14. TRANSPORTATION INFORMATION

This product is not classified as hazardous for transportation.

## SECTION 15. REGULATORY INFORMATION

#### SARA Title III:

Health:

Acute NO

Chronic NO

EHS NO

Physical:

Fire NO

Reactivity NO

Pressure NO

#### SARA 313 (TRI):

This product is considered an "article" under SARA Title III Section 313 and is not subject to reporting under normal conditions of use.

#### California Proposition 65:

**WARNING:** This material contains chemicals known to the State of California to cause cancer: Antimony Trioxide, Folpet.

#### WHMIS (Canada):

This product meets the definition of "manufactured article" under the Hazardous Products Act

# 6.1 FiberTite® Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® Roofing Membranes

Rev Date: 10 Oct 2014

### SECTION 16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

FiberTite® is a registered trademark of Seaman Corporation.

FiberTite®-Brite™ is a trademark of Seaman Corporation

Kynar® is a registered trademark of Arkema



*Innovative Customer Solutions through Fiber and Polymer Technology*

1000 VENTURE BLVD. • WOOSTER, OHIO 44691  
PHONE: (330) 262-1111 • FAX: (330) 263-6950 • [www.seamancorp.com](http://www.seamancorp.com)



# 6.2 FiberTite® SBS Roofing Membranes



## Material Safety Data Sheet

### FiberTite® - SBS Roofing Membranes

NOTE: This product meets the definition of "article" under the OSHA Hazard Communication Regulations in 29 CFR 1910.1200(c) and is exempt from the requirement to provide a Safety Data Sheet per 29 CFR 1910.1200(b)(6)(v). This MSDS is provided on a voluntary basis to provide additional information to customers.

Rev. Date: 10 Oct 2014

#### SECTION 1. IDENTIFICATION

**Product Name:** FiberTite®-SBS Roofing Membranes

**Trade Names:** FiberTite®-SBS Base  
FiberTite®-SBS TG Base  
FiberTite®-SBS 190 Base  
FiberTite®-SBS 190 TG Base

**Recommended Use:** Roofing/waterproofing

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY: (800) 424-9300 (Chemtrec)**

#### SECTION 2. HAZARDS IDENTIFICATION

This material does not meet any hazard classification under the HCS.

Under normal use and handling, the product is not expected to create any physical or health hazards.

Excessive heating may result in the generation of smoke or fumes containing hydrogen chloride, carbon dioxide, carbon monoxide, and trace amounts of organic compounds due to decomposition of the components. These fumes may be irritating to respiratory tract and eyes.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Exposure to individual components is not expected under normal conditions of use. Listing of major components and exposure limits are given for reference only.

	<b>CAS No.</b>
Asphalt	8052-42-4
Fiberglass reinforcement (SBS Base and SBS TG Base)	NA
Polyester non-woven scrim (SBS 190 Base and SBS 190 TG Base)	NA
Styrene-Butadiene polymer	9003-55-8
Calcium Carbonate	1317-65-3
Crystalline silica (sand – adhered to product – large particle size)	Not specified
Polypropylene film (TG products only)	9002-88-4

#### SECTION 4. FIRST AID MEASURES

**Inhalation:** If exposed to fumes from overheating or combustion, move to fresh air. Seek medical attention if symptoms persist.

**Skin Contact:** Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention.

# 6.2 FiberTite® SBS Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® - SBS Roofing Membranes

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**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Not applicable

### SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will burn if exposed continuously to an external combustion source.

**Suitable Extinguishing Media:** Water fog, CO<sub>2</sub>, foam or dry chemical (CAUTION: CO<sub>2</sub> will displace air in confined spaces and may cause an oxygen deficient atmosphere.)

**Products of Combustion:** Carbon dioxide, carbon monoxide, aliphatic and aromatic organic compounds

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

**Handling:** Use protective equipment recommended in Section 8. Wash hands after repeated handling.

**Storage:** Rolled goods should be kept dry and protected from moisture.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide local exhaust ventilation for any thermal processing operations.

**Eye/Face:** Wear safety glasses during processing

**Skin:** Wear general purpose gloves during prolonged handling

**Respiratory:** Provide adequate local ventilation. If exposure limits are exceeded, NIOSH approved respiratory protection must be provided.

**General Hygiene:** Wash hands with soap and water after handling material.

#### EXPOSURE GUIDELINES

Asphalt fume (8052-42-4):

ACGIH: 0.5 mg/m<sup>3</sup> TWA (fume, inhalable fraction, as benzene soluble aerosol)  
NIOSH: 5 mg/m<sup>3</sup> Ceiling (15-min)

Fiberglass reinforcement (SBS Base and SBS TG Base):

OSHA: 5 mg/m<sup>3</sup> TWA (respirable fraction); 15 mg/m<sup>3</sup> TWA (total dust)  
ACGIH: 5 mg/m<sup>3</sup> TWA; 1 f/cc (fiber length > 5 µm, aspect ratio ≥ 3:1)  
NIOSH: 5 mg/m<sup>3</sup> TWA total fibrous glass; 3 f/cc (fiber length ≥ 10 µm, diameter ≤ 3.5 µm)

Crystalline silica (sand):

OSHA: (30)/(%SiO<sub>2</sub>+2) mg/m<sup>3</sup> TWA (total dust)  
(250)/(%SiO<sub>2</sub>+5) mppcf TWA (respirable) or (10)/(%SiO<sub>2</sub>+2) mg/m<sup>3</sup> TWA (respirable)  
ACGIH: 0.025 mg/m<sup>3</sup> TWA (respirable fraction)  
NIOSH: 0.05 mg/m<sup>3</sup> TWA (respirable fraction)

# 6.2 FiberTite® SBS Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® - SBS Roofing Membranes

Rev Date: 10 Oct 2014

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Rolled sheeting	<b>Odor:</b>	Asphaltic
<b>Odor threshold:</b>	NA	<b>pH:</b>	NA
<b>Melting/Freezing Point:</b>	>95°C (>200°F)	<b>Boiling Point:</b>	Not determined
<b>Flash Point:</b>	NA	<b>Evaporation Rate:</b>	NA
<b>Flammability:</b>	Not determined	<b>LFL/UFL:</b>	Not determined
<b>Vapor Pressure:</b>	NA	<b>Vapor Density:</b>	NA
<b>Relative Density:</b>	NA	<b>Solubility:</b>	none
<b>Partition Coefficient K<sub>ow</sub>:</b>	NA	<b>Auto-Ignition Temp.:</b>	460°C (860°F)
<b>Decomposition Temp.:</b>	Not determined	<b>Viscosity:</b>	NA

### SECTION 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Not reactive
<b>Chemical Stability:</b>	Stable at normal temperatures
<b>Hazardous Reactions:</b>	Will not occur
<b>Conditions to Avoid:</b>	Prolonged excessive heating
<b>Incompatible Materials:</b>	None known.
<b>Hazardous Decomposition:</b>	Thermal decomposition products: carbon dioxide, carbon monoxide, trace amounts of aliphatic and aromatic organics

### SECTION 11. TOXICOLOGICAL INFORMATION

#### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Smoke generated from heating or burning the product is the primary health effect.
<b>Inhalation:</b>	Irritation of the upper respiratory tract may occur from fumes and smoke generated during heating
<b>Skin Contact:</b>	Prolonged handling may cause mechanical irritation
<b>Eye Contact:</b>	Fumes from heating may cause irritation, redness, and burning
<b>Ingestion:</b>	Not an expected route of entry
<b>Target Organs:</b>	Lungs/respiratory tract, eyes

#### ACUTE TOXICITY

<b>General Information:</b>	No data available for this product as a whole. Adverse health effects would not be anticipated with normal use. However, thermal processing can emit fumes which may cause eye and respiratory irritation.
<b>Component Analysis:</b>	Due to the physical form of the product, exposure to the chemical components of the fabric and coating is not expected. Contact manufacturer (contact information in Section 16) to obtain detailed information regarding component toxicity.

#### CARCINOGENICITY

<b>General Information:</b>	This product has not been evaluated by OSHA, NTP, ACGIH, or IARC. No specific data available.
<b>Component Analysis:</b>	Asphalt (8052-42-4): IARC: Group 3 – Not Classifiable (Vol. 35, Suppl. 7, 1987) ACGIH: A4 – Not Classifiable as a Human Carcinogen Continuous filament glass fiber (SBS Base and SBS TG Base): IARC: Group 3 – Not Classifiable (Vol. 81, 2002) ACGIH: A4 – Not Classifiable as a Human Carcinogen Crystalline silica (sand): IARC: Group 1 – Known human carcinogen (Vol. 68, 1997) NTP: Known Human Carcinogen ACGIH: A2 – Suspected Human Carcinogen Styrene-Butadiene polymer (9003-55-8): IARC: Group 3 – Not Classifiable (Vol. 19, Suppl. 7, 1987) ACGIH: A4 – Not Classifiable as a Human Carcinogen

# 6.2 FiberTite® SBS Roofing Membranes



## Seaman Corporation Material Safety Data Sheet FiberTite® - SBS Roofing Membranes

Rev Date: 10 Oct 2014

### CHRONIC TOXICITY

Excessive exposure to silica can cause silicosis, a non-cancerous lung disease.  
No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION

No data is available on the adverse effects of this product on the environment. Toxicity is expected to be low based on insolubility in water.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material is not hazardous in its manufactured form under the Resource Conservation and Recovery Act. (40 CFR 261)

### SECTION 14. TRANSPORTATION INFORMATION

This product is not classified as hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>NO</u>	Chronic <u>NO</u>	EHS <u>NO</u>
	Physical:	Fire <u>NO</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>
SARA 313 (TRI):	This product is considered an "article" under SARA Title III Section 313 and is not subject to reporting under normal conditions of use.			
California Proposition 65:	<b>WARNING:</b> This material contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.			
WHMIS (Canada):	This product meets the definition of "manufactured article" under the Hazardous Products Act			

### SECTION 16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

FiberTite® is a registered trademark of Seaman Corporation.



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1000 VENTURE BLVD. • WOOSTER, OHIO 44691  
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# 6.3 FiberTite® Style 80 Roofing Membranes



## Material Safety Data Sheet

### Style 80 Roofing Membranes

NOTE: This product meets the definition of "article" under the OSHA Hazard Communication Regulations in 29 CFR 1910.1200(c) and is exempt from the requirement to provide a Safety Data Sheet per 29 CFR 1910.1200(b)(6)(v). This MSDS is provided on a voluntary basis to provide additional information to customers.

Rev. Date: 10 Oct 2014

#### SECTION 1. IDENTIFICATION

**Product Name:** Style 80 Roofing Membranes  
**Trade Names:** Style 80, Style 80M, Style 80 FB, Style 80M FB  
**Recommended Use:** Roofing/waterproofing

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA  
**PHONE:** (330) 262-1111  
**INTERNET:** www.seamancorp.com  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

This material does not meet any hazard classification under the HCS.

Under normal use and handling, the product is not expected to create any physical or health hazards.

Excessive heating may result in the generation of smoke or fumes containing hydrogen chloride, carbon dioxide, carbon monoxide, and trace amounts of organic compounds due to decomposition of the components. These fumes may be irritating to respiratory tract and eyes.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Exposure to individual components is not expected under normal conditions of use. Listing of major components and exposure limits are given for reference only.

<u>Regulated Components</u>	<u>CAS No.</u>	<u>Weight %</u>
Titanium Dioxide	13463-67-7	0-15%
Antimony Trioxide	1309-64-4	<5%
Folpet	133-07-3	<1%
<u>Major Components</u>	<u>CAS No.</u>	
Nylon or Polyester fabric	NA	
PVC Resin	9002-86-2	
Ketone Ethylene Ester copolymer	**	
Alkyl phthalate plasticizer	**	
Polyester non-woven fleece (FB products only)	NA	

\*\* Specific chemical identity is withheld as a trade secret under 29 CFR 1910.1200(i).

#### SECTION 4. FIRST AID MEASURES

**Inhalation:** If exposed to fumes from overheating or combustion, move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.

# 6.3 FiberTite® Style 80 Roofing Membranes



## Seaman Corporation Material Safety Data Sheet Style 80 Roofing Membranes

Rev Date: 10 Oct 2014

Ingestion: Not applicable

### SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will burn if exposed continuously to an external combustion source and yield hydrogen chloride, carbon monoxide, carbon dioxide, and small amounts of aliphatic and aromatic hydrocarbons.

**Suitable Extinguishing Media:** Water fog, CO<sub>2</sub>, foam or dry chemical (CAUTION: CO<sub>2</sub> will displace air in confined spaces and may cause an oxygen deficient atmosphere.)

**Products of Combustion:** Hydrogen chloride, carbon dioxide, carbon monoxide, trace amounts of aliphatic and aromatic organics

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

**Handling:** Use protective equipment recommended in Section 8. Wash hands after repeated handling. When hot air or wedge welding, insure adequate local ventilation to prevent the buildup of fumes.

Unwinding, winding, and passage of the fabric through and over rollers can generate a strong electrostatic charge on the surface of the fabric. Static discharge devices should be used when handling in this way.

**Storage:** Rolled goods should be kept dry and protected from moisture.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide local exhaust ventilation for any thermal processing operations.

**Eye/Face:** Wear safety glasses during processing

**Skin:** Wear general purpose gloves during prolonged handling

**Respiratory:** Provide adequate local ventilation. If exposure limits are exceeded, NIOSH approved respiratory protection must be provided.

**General Hygiene:** Wash hands with soap and water after handling material.

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
PVC Resin (9002-86-2)	-	-	-	None established
Folpet (133-07-3)	-	-	-	None established
Titanium Dioxide (13463-67-7)	15 mg/m <sup>3</sup> TWA (total dust)	10 mg/m <sup>3</sup> TWA	-	
Antimony Trioxide (1309-64-4):	0.5 mg/m <sup>3</sup> TWA as Sb	0.5 mg/m <sup>3</sup> TWA as Sb	0.5 mg/m <sup>3</sup> TWA as Sb	

**NOTE:** Due to product form, exposure to dust or fume is not expected to occur; exposure limits are given for reference only.

# 6.3 FiberTite® Style 80 Roofing Membranes



## Seaman Corporation Material Safety Data Sheet Style 80 Roofing Membranes

Rev Date: 10 Oct 2014

### Potential byproducts from thermal processing/overheating:

	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Hydrogen Chloride (7647-01-0)	5 ppm (7 mg/m <sup>3</sup> ) Ceiling	2 ppm (2.98 mg/m <sup>3</sup> ) Ceiling	5 ppm (7 mg/m <sup>3</sup> ) Ceiling	The odor threshold for HCl is 0.25 ppm
Carbon Monoxide (630-08-0)	50 ppm (55 mg/m <sup>3</sup> ) TWA	25 ppm (29 mg/m <sup>3</sup> ) TWA	35 ppm (40 mg/m <sup>3</sup> ) TWA; 200 ppm (229 mg/m <sup>3</sup> ) Ceiling	

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Polymeric sheeting	<b>Odor:</b>	Characteristic
<b>Odor threshold:</b>	NA	<b>pH:</b>	NA
<b>Melting/Freezing Point:</b>	NA	<b>Boiling Point:</b>	NA
<b>Flash Point:</b>	NA	<b>Evaporation Rate:</b>	NA
<b>Flammability:</b>	NA	<b>LFL/UFL:</b>	NA
<b>Vapor Pressure:</b>	NA	<b>Vapor Density:</b>	NA
<b>Relative Density:</b>	NA	<b>Solubility:</b>	none
<b>Partition Coefficient K<sub>ow</sub>:</b>	NA	<b>Auto-Ignition Temp.:</b>	850°F
<b>Decomposition Temp.:</b>	Not determined	<b>Viscosity:</b>	NA

## SECTION 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Not reactive
<b>Chemical Stability:</b>	Stable at normal temperatures
<b>Hazardous Reactions:</b>	Will not occur
<b>Conditions to Avoid:</b>	Prolonged excessive heating
<b>Incompatible Materials:</b>	None known.
<b>Hazardous Decomposition:</b>	Thermal decomposition products: Hydrogen chloride, carbon dioxide, carbon monoxide, trace amounts of aliphatic and aromatic organics

## SECTION 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Smoke generated from heating or burning the product is the primary health effect.
<b>Inhalation:</b>	Irritation of the upper respiratory tract may occur from fumes and smoke generated during heating
<b>Skin Contact:</b>	Prolonged handling may cause mechanical irritation
<b>Eye Contact:</b>	Fumes from heating may cause irritation, redness, and burning
<b>Ingestion:</b>	Not an expected route of entry
<b>Target Organs:</b>	Lungs/respiratory tract, eyes

### ACUTE TOXICITY

<b>General Information:</b>	No data available for this product as a whole. Adverse health effects would not be anticipated with normal use. However, thermal processing can emit fumes which may cause eye and respiratory irritation.
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<b>Component Analysis:</b>	Due to the physical form of the product, exposure to the chemical components of the fabric and coating is not expected. Contact manufacturer (contact information in Section 16) to obtain detailed information regarding component toxicity.
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### CARCINOGENICITY

<b>General Information:</b>	This product has not been evaluated by OSHA, NTP, ACGIH, or IARC. No specific data available.
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<b>Component Analysis:</b>	PVC Resin (9002-86-2):
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# 6.3 FiberTite® Style 80 Roofing Membranes



## Seaman Corporation Material Safety Data Sheet Style 80 Roofing Membranes

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IARC: Group 3 – Not Classifiable (Vol. 19, Suppl. 7, 1987)  
Antimony Trioxide (1309-64-4):  
IARC: Group 2B – Possibly Carcinogenic to Humans (Vol. 47, 1989)  
ACGIH: A2 – Suspected Human Carcinogen  
Titanium Dioxide (13463-67-7):  
IARC: Group 2B – Possibly Carcinogenic to Humans (Vol. 93, 2010)  
ACGIH: A4 – Not Classifiable as a Human Carcinogen  
NIOSH: Potential occupational carcinogen  
Folpet (133-07-3):  
EPA: B2 – Probable Human Carcinogen (sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies)

### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

## SECTION 12. ECOLOGICAL INFORMATION

No data is available on the adverse effects of this product on the environment. Toxicity is expected to be low based on insolubility in water.

## SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material is not hazardous in its manufactured form under the Resource Conservation and Recovery Act. (40 CFR 261)

## SECTION 14. TRANSPORTATION INFORMATION

This product is not classified as hazardous for transportation.

## SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health: Acute <u>NO</u>	Chronic <u>NO</u>	EHS <u>NO</u>
	Physical: Fire <u>NO</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product is considered an "article" under SARA Title III Section 313 and is not subject to reporting under normal conditions of use.

California Proposition 65: **WARNING:** This material contains chemicals known to the State of California to cause cancer: Antimony Trioxide, Folpet.

## SECTION 16. OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111



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## SAFETY DATA SHEET

### FiberTite® FTR-101 Sealant

Rev. Date: 6 Nov 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-101 Sealant

**Recommended Use:** Moisture cure sealant

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

**GHS Classification:**

Eye Damage - Category 1  
Skin Sensitization - Category 1

**Hazard Statements:**

Causes serious eye damage  
May cause an allergic skin reaction

**Precautionary Statements:**

Avoid breathing dust/fume/gas/mist/vapors/spray.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.

**Storage:**

none

# 6.4 FiberTite® FTR-101 Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-101 Sealant

Rev. Date: 6 Nov 2014

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Amino silane	1760-24-3	1-5

## SECTION 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. Seek medical attention if symptoms persist.
<b>Skin Contact:</b>	Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.
<b>Eye Contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
<b>Ingestion:</b>	Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

<b>Flammable Properties:</b>	Material is not considered flammable.
<b>Suitable Extinguishing Media:</b>	alcohol resistant foam, CO2, powders, water spray
<b>Products of Combustion:</b>	Acrid fumes, carbon monoxide, carbon dioxide
<b>Protection of Firefighters:</b>	Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

## SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8.
<b>Storage:</b>	Store in a cool, dry area. This product will polymerize when in contact with moisture.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE GUIDELINES

None established

### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation
<b>Eye/Face:</b>	Wear safety glasses
<b>Skin:</b>	Wear chemical resistant protective gloves
<b>Respiratory:</b>	If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

# 6.4 FiberTite® FTR-101 Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-101 Sealant

Rev. Date: 6 Nov 2014

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Various	<b>Odor:</b>	Mild ester
<b>Odor threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	Not available
<b>Flash Point:</b>	Not applicable	<b>Evaporation Rate:</b>	Not applicable
<b>Flammability:</b>	Not applicable	<b>LFL/UFL:</b>	Not applicable
<b>Vapor Pressure:</b>	Not available	<b>Vapor Density:</b>	Greater than air
<b>Relative Density:</b>	~11.0 lb/gal	<b>Solubility:</b>	Insoluble in water
<b>Partition Coefficient K<sub>ow</sub>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	~700 000 cP

### SECTION 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at recommended storage and handling conditions
<b>Conditions to Avoid:</b>	None known
<b>Incompatible Materials:</b>	None known
<b>Hazardous Decomposition:</b>	None known
<b>Hazardous Reactions:</b>	Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Material can be irritating to eyes and skin
<b>Inhalation:</b>	Low volatility, not likely route of exposure
<b>Skin Contact:</b>	Drying of skin and dermatitis may occur
<b>Eye Contact:</b>	Can cause severe irritation
<b>Ingestion:</b>	May be harmful if ingested
<b>Target Organs:</b>	Skin, Eyes

#### ACUTE TOXICITY

Causes eye irritation. Causes skin irritation. Allergic reactions are possible. Repeated or prolonged contact with skin may cause sensitization.  
LD50 data based on aminosilane:  
Oral: LD50 > 2000 mg/kg (very low order of toxicity)  
Skin: LD50 > 2000 mg/kg (very low order of toxicity)

#### CARCINOGENICITY

This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### CHRONIC TOXICITY

Susceptible individuals may develop allergic reactions such as dermatitis on a single significant skin or respiratory exposure or may become sensitized to the material on repeated and prolonged contact. Hence all forms of exposure be kept to an absolute minimum.

### SECTION 12. ECOLOGICAL INFORMATION

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. If product as supplied becomes a waste, it will not meet the criteria of a hazardous waste under the Resource Conservation and Recovery Act (40 CFR 261).

This product becomes a firm synthetic rubber when cured. Please allow to cure before disposal.

# 6.4 FiberTite® FTR-101 Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-101 Sealant

Rev. Date: 6 Nov 2014

### SECTION 14. TRANSPORTATION INFORMATION

This product is not hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>YES</u>	EHS <u>NO</u>
	Physical:	Fire <u>NO</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):

<u>Component</u>	<u>% by weight</u>
NONE	

California Proposition 65: NONE

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111.

FiberTite® is a registered trademark of Seaman Corporation.



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## SAFETY DATA SHEET

### FiberTite® FTR-190e Adhesive

Rev. Date: 10 Oct 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-190e Roofing Adhesive

**Recommended Use:** Roofing adhesive (Low VOC)

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

**PHONE:** (330) 262-1111  
**INTERNET:** [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

**GHS Classification:**

Flammable Liquid – Category 2  
Eye Irritant – Category 2A  
Skin Irritant – Category 2  
Reproductive Toxicant – Category 2  
Aspiration Hazard – Category 1  
Specific Target Organ Toxicity (Single Exposure) – Category 3  
Specific Target Organ Toxicity (Repeated Exposure) – Category 2

**Hazard Statements:**

Highly flammable liquid and vapor  
May be fatal if swallowed and enters airways  
Causes skin irritation  
Causes serious eye irritation  
May cause respiratory irritation  
May cause drowsiness or dizziness  
Suspected of damaging fertility or the unborn child  
May cause damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure

**Precautionary Statements:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.

# 6.5 FiberTite® FTR-190e Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-190e Adhesive

Rev. Date: 10 Oct 2014

Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe vapor.  
Wash face, hands and any exposed skin thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.

### Response:

IN CASE OF FIRE: Use foam/CO2/powder/water spray for extinction.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of soap and water.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
If exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
If skin irritation occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
Take off contaminated clothing and wash before reuse.

### Storage:

Store in a well-ventilated place. Keep container tightly closed.  
Keep cool.  
Store locked up.

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Acetone	67-64-1	55-75
Nitrile Rubber/polymeric blend	n/a	25-40
Methyl Ethyl Ketone	78-93-3	3-10
Toluene	108-88-3	1-5
p-Chlorobenzotrifluoride	98-56-6	<1

## SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is highly flammable. Likely to catch fire from nearby spark. Static charge may accumulate.

**Suitable Extinguishing Media:** alcohol resistant foam, CO2, powders, water spray

**Products of Combustion:** Fire will produce dense black smoke. Carbon monoxide and carbon dioxide may be produced from decomposition.

# 6.5 FiberTite® FTR-190e Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-190e Adhesive

Rev. Date: 10 Oct 2014

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

**Handling:** Use protective equipment recommended in Section 8. Use only in well ventilated area. Eliminate any source of ignition. Ground and bond all equipment when handling. Any electrical equipment used around vapors should meet the applicable requirements of the local electrical code. Wash hands after contact.

**Storage:** Storage temperature 60°F to 95°F (15°C to 35°C). Shelf life one year from manufacture date. Keep away from oxidizing agents and strongly acid or strongly alkaline materials. Avoid heating or direct sunlight. Material will evaporate quickly.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Acetone (67-64-1)	1000 ppm (2400 mg/m <sup>3</sup> ) TWA	500 ppm (1187 mg/m <sup>3</sup> ) TWA; 750 ppm (1780 mg/m <sup>3</sup> ) STEL	-	
Methyl Ethyl Ketone (78-93-3)	200 ppm (590 mg/m <sup>3</sup> ) TWA	200 ppm (590 mg/m <sup>3</sup> ) TWA; 300 ppm (885 mg/m <sup>3</sup> ) STEL	200 ppm (590 mg/m <sup>3</sup> ) TWA; 300 ppm (885 mg/m <sup>3</sup> ) STEL	
Toluene (108-88-3)	200 ppm (590 mg/m <sup>3</sup> ) TWA; 300 ppm STEL	20 ppm TWA	-	
p-Chlorobenzotrifluoride (98-56-6)	-	-	-	None established

#### PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide local exhaust ventilation  
**Eye/Face:** Wear safety glasses  
**Skin:** Wear chemical resistant protective gloves  
**Respiratory:** If exposure limits are exceeded, NIOSH approved respiratory protection must be provided  
**General Hygiene:** Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b> Light amber liquid	<b>Odor:</b> Solvent (ketone)
<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting/Freezing Point:</b> -95°C	<b>Boiling Point:</b> 56°C (133°F)
<b>Flash Point:</b> -17°C (1.4°F)	<b>Evaporation Rate:</b> >1.0 (butyl acetate=1)
<b>Flammability:</b> Category 2	<b>LFL/UFL:</b> 1.0% / 12.8%

# 6.5 FiberTite® FTR-190e Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-190e Adhesive

Rev. Date: 10 Oct 2014

**Vapor Pressure:** Not determined  
**Relative Density:** 0.849 (7.081 lb/gal)  
**Partition Coefficient K<sub>ow</sub>:** Not available  
**Decomposition Temp.:** Not applicable

**Vapor Density:** Greater than air  
**Solubility:** Slight in water  
**Auto-Ignition Temp.:** 404°C (759°F)  
**Viscosity:** Not available

VOC Content: 199.4 g/L (EPA Method 24)

Photochemically reactive VOC: 53 g/L

### SECTION 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable at recommended storage and handling conditions  
**Conditions to Avoid:** Sources of ignition  
**Incompatible Materials:** Oxidizing agents, strong acids, strong bases  
**Hazardous Decomposition:** Carbon monoxide, carbon dioxide  
**Hazardous Reactions:** Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

**Summary:** Material is flammable, irritating to eyes and skin, can cause dizziness/drowsiness  
**Inhalation:** May cause dizziness and/or drowsiness, headaches, and irritation of the lungs  
**Skin Contact:** Drying of skin and dermatitis may occur  
**Eye Contact:** May cause irritation, redness, and burning; vapors may also cause irritation  
**Ingestion:** Irritation of gastrointestinal tract, large quantities may have toxic effects  
**Target Organs:** Central nervous system, skin, eyes, liver, kidneys

#### ACUTE TOXICITY

**General Information:** In high concentration the material is irritating to the mucous membranes, can induce a narcotic effect, and cause loss of coordination and reaction.

#### Component Analysis:

Acetone (67-64-1):  
Oral LD50 Rat: >5000 mg/kg  
Dermal LD50 Rabbit: >15700 mg/kg  
Inhalation (rat): 32000 mg/m<sup>3</sup> (4-hr dose)  
Methyl Ethyl Ketone (78-93-3):  
Oral LD50 Rat: >2737 mg/kg  
Dermal LD50 Rabbit: 5000 to 13000 mg/kg  
Inhalation (rat): 23500 mg/L (8-hr dose)  
Toluene (108-88-3):  
Oral LD50 Rat: 636 mg/kg  
Dermal LD50 Rabbit: 14100 mg/kg  
Inhalation (mouse): 440 mg/L (24-hr dose)  
p-Chlorobenzotrifluoride (98-56-6):  
Oral LD50 Rat: >6800 mg/kg  
Dermal LD50 Rabbit: >2700 mg/kg  
Inhalation (rat): 4479 ppm

#### CARCINOGENICITY

**General Information:** This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### Component Analysis:

Toluene (108-88-3):  
IARC: 3 – Unclassifiable as to Carcinogenicity in Humans  
ACGIH: A4 – Not classifiable as a Human Carcinogen

#### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION



# 6.5 FiberTite® FTR-190e Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-190e Adhesive

Rev. Date: 10 Oct 2014

This product contains components that will normally float on water. These components may be harmful to aquatic organisms and may cause long term effects in the aquatic environment.

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

### SECTION 14. TRANSPORTATION INFORMATION

This product is hazardous for transportation.

Shipping Name: Adhesives (contains toluene, acetone)

Class: 3 Packing Group: II

ID No.: NA1133

NAERG: 128

### SECTION 15. REGULATORY INFORMATION

SARA Title III:

Health: Acute YES

Chronic YES

EHS NO

Physical: Fire YES

Reactivity NO

Pressure NO

SARA 313 (TRI):

This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):

Component

% by weight

Toluene (CAS# 108-88-3)

1-5 %

California Proposition 65:

**WARNING:** This material contains a chemical known to the State of California to cause birth defects or other reproductive harm: Toluene (CAS# 108-88-3)

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

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## SAFETY DATA SHEET

### FiberTite® FTR-201 Mastic

Rev. Date: 6 Nov 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-201 Mastic

**Recommended Use:** Roofing sealant

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

##### Pictograms:



**Signal Word:** DANGER

##### GHS Classification:

Flammable Liquid – Category 3  
Aspiration Hazard – Category 1  
Germ Cell Mutagenicity - Category 1  
Carcinogenicity - Category 1

##### Hazard Statements:

Flammable liquid and vapor  
May be fatal if swallowed and enters airways  
May cause genetic defects  
May cause cancer

##### Precautionary Statements:

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat/sparks/open flames/hot surfaces - No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.

# 6.6 FiberTite® FTR-201 Mastic



## Seaman Corporation Safety Data Sheet FiberTite® FTR-201 Mastic

Rev. Date: 6 Nov 2014

### Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF exposed or concerned: Get medical advice/attention.  
In case of fire: Use foam/CO2/powder/water spray for extinction.

### Storage:

Store in a well-ventilated place. Keep cool.  
Store locked up.

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Aliphatic hydrocarbon	8032-32-4	23
Quartz	14808-60-7	<1

## SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is combustible. Containers can build up pressure if exposed to heat.  
**Suitable Extinguishing Media:** alcohol resistant foam, CO2, powders, water spray  
**Products of Combustion:** Acid fumes, carbon monoxide, carbon dioxide  
**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

## SECTION 7. HANDLING AND STORAGE

**Handling:** Use protective equipment recommended in Section 8. Use only in well ventilated area. Eliminate any source of ignition. Any electrical equipment used around vapors should meet the applicable requirements of the local electrical code. Wash hands after contact.  
**Storage:** Do not store near an ignition sources. Keep containers closed.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Seaman Corporation Safety Data Sheet FiberTite® FTR-201 Mastic

Rev. Date: 6 Nov 2014

### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Aliphatic Hydrocarbon (8032-32-4) (Ligroine, VM P Naphtha)	None	None	350 mg/m <sup>3</sup> TWA; 1800 mg/m <sup>3</sup> C (15 min)	
Quartz (14808-60-7) (crystalline silica)	See below	0.025 mg/m <sup>3</sup> TWA (respirable fraction)	0.05 mg/m <sup>3</sup> TWA (respirable fraction)	

OSHA PEL for Quartz: (30)/(%SiO<sub>2</sub>+2) mg/m<sup>3</sup> TWA (total dust)  
(250)/(%SiO<sub>2</sub>+5) mppcf TWA (respirable) or (10)/(%SiO<sub>2</sub>+2) mg/m<sup>3</sup> TWA (respirable)

Exposure to respirable quartz not possible under normal conditions of use.

### PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide local exhaust ventilation  
**Eye/Face:** Wear safety glasses  
**Skin:** Wear chemical resistant protective gloves  
**Respiratory:** If exposure limits are exceeded, NIOSH approved respiratory protection must be provided  
**General Hygiene:** Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b> black viscous liquid	<b>Odor:</b> Solvent
<b>Odor threshold:</b> Not available	<b>pH:</b> Not available
<b>Melting/Freezing Point:</b> Not available	<b>Boiling Point:</b> 178°C (352°F)
<b>Flash Point:</b> 41°C (106°F)	<b>Evaporation Rate:</b> >1.0 (butyl acetate=1)
<b>Flammability:</b> Category 3	<b>LFL/UFL:</b> 0.5% / 6.0%
<b>Vapor Pressure:</b> 5 mmHg @ 26°C	<b>Vapor Density:</b> 5.0 (air=1)
<b>Relative Density:</b> 1.26	<b>Solubility:</b> 0.5% in water
<b>Partition Coefficient K<sub>ow</sub>:</b> Not available	<b>Auto-Ignition Temp.:</b> Not available
<b>Decomposition Temp.:</b> Not applicable	<b>Viscosity:</b> Not available

### SECTION 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable at recommended storage and handling conditions  
**Conditions to Avoid:** Sources of ignition  
**Incompatible Materials:** Oxidizing agents, strong acids, strong bases  
**Hazardous Decomposition:** Carbon monoxide, carbon dioxide  
**Hazardous Reactions:** Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

**Summary:** Irritating to eyes, skin, respiratory tract  
**Inhalation:** Prolonged inhalation of vapors may cause irritation of the respiratory tract. Intentional misuse by deliberately concentrating and inhaling vapor may be harmful or fatal.  
**Skin Contact:** Redness, irritation  
**Eye Contact:** Irritation, redness, tearing, or blurred vision  
**Ingestion:** Irritation of gastrointestinal tract, nausea, vomiting, and diarrhea  
**Target Organs:** Lungs/respiratory tract, skin, eyes

# 6.6 FiberTite® FTR-201 Mastic



## Seaman Corporation Safety Data Sheet FiberTite® FTR-201 Mastic

Rev. Date: 6 Nov 2014

### ACUTE TOXICITY

General Information: Irritating to mouth, throat, and stomach. Causes eye irritation. Causes skin irritation. Harmful if inhaled.

#### Component Analysis:

VM & P Naphtha (8032-32-4):  
LC50 (rat) = 3400 ppm (4 hr)  
LD50 (intravenous, mouse) = 40 mg/kg  
Quartz (crystalline silica) (14808-60-7):  
LD50 (oral, rat) = 3160 mg/kg

### CARCINOGENICITY

General Information: This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### Component Analysis:

VM & P Naphtha (8032-32-4):  
ACGIH: A3 – Confirmed Animal Carcinogen with Unknown Relevance to Humans  
Crystalline silica (sand):  
IARC: Group 1 – Known human carcinogen (Vol. 68, 1997)  
NTP: Known Human Carcinogen  
ACGIH: A2 – Suspected Human Carcinogen

(Exposure to respirable quartz not possible under normal conditions of use.)

### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects. Susceptible individuals may develop allergic reactions such as dermatitis on single significant skin or respiratory exposure or may become sensitized to material on repeated and prolonged contact.

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## SECTION 12. ECOLOGICAL INFORMATION

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Do not empty into drains or waterways.

---

## SECTION 13. DISPOSAL CONSIDERATIONS

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Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

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## SECTION 14. TRANSPORTATION INFORMATION

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This product is considered a combustible liquid for transportation.

Shipping Name: Combustible liquid, n.o.s. (contains petroleum naphtha)  
Class: na Packing Group: na ID No.: NA1993

NAERG: 128

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## SECTION 15. REGULATORY INFORMATION

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SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>YES</u>	EHS <u>NO</u>
	Physical:	Fire <u>YES</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):

<u>Component</u>	<u>% by weight</u>
NONE	

# 6.6 FiberTite® FTR-201 Mastic



## Seaman Corporation Safety Data Sheet FiberTite® FTR-201 Mastic

Rev. Date: 6 Nov 2014

California Proposition 65: NONE

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

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## SAFETY DATA SHEET

### FiberTite® FTR-290 Adhesive

Rev. Date: 17 Oct 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-290 Roofing Adhesive

**Recommended Use:** Roofing adhesive

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

**PHONE:** (330) 262-1111  
**INTERNET:** [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

**GHS Classification:**

Flammable Liquid – Category 2  
Eye Irritant – Category 2A  
Skin Irritant – Category 2  
Reproductive Toxicant – Category 2  
Aspiration Hazard – Category 1  
Specific Target Organ Toxicity (Single Exposure) – Category 3  
Specific Target Organ Toxicity (Repeated Exposure) – Category 2

**Hazard Statements:**

Highly flammable liquid and vapor  
May be fatal if swallowed and enters airways  
Causes skin irritation  
Causes serious eye irritation  
Suspected of damaging fertility or the unborn  
May cause drowsiness or dizziness  
May cause damage to organs (central nervous system, kidneys, liver) through prolonged or repeated exposure

**Precautionary Statements:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.

# 6.7 FiberTite® FTR-290 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-290 Adhesive

Rev. Date: 17 Oct 2014

Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe vapor.  
Wash face, hands and any exposed skin thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.

### Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of soap and water.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
IF exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
If skin irritation occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
Take off contaminated clothing and wash before reuse.  
IN CASE OF FIRE: Use foam/CO2/powder/water spray for extinction..

### Storage:

Store in a well-ventilated place. Keep container tightly closed.  
Keep cool.  
Store locked up.

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Acetone	67-64-1	35-60
Nitrile Rubber/polymeric blend	n/a	25-40
Toluene	108-88-3	10-30

## SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is highly flammable. Likely to catch fire from nearby spark. Static charge may accumulate.

**Suitable Extinguishing Media:** alcohol resistant foam, CO2, powders, water spray

**Products of Combustion:** Fire will produce dense black smoke. Carbon monoxide and carbon dioxide may be produced from decomposition.

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.



# 6.7 FiberTite® FTR-290 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-290 Adhesive

Rev. Date: 17 Oct 2014

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8. Use only in well ventilated area. Eliminate any source of ignition. Ground and bond all equipment when handling. Any electrical equipment used around vapors should meet the applicable requirements of the local electrical code. Wash hands after contact.
<b>Storage:</b>	Storage temperature 60°F to 95°F (15°C to 35°C). Shelf life one year from manufacture date. Keep away from oxidizing agents and strongly acid or strongly alkaline materials. Avoid heating or direct sunlight. Material will evaporate quickly.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Acetone (67-64-1)	1000 ppm (2400 mg/m <sup>3</sup> ) TWA	500 ppm (1187 mg/m <sup>3</sup> ) TWA; 750 ppm (1780 mg/m <sup>3</sup> ) STEL	-	
Toluene (108-88-3)	200 ppm (590 mg/m <sup>3</sup> ) TWA; 300 ppm STEL	20 ppm TWA	-	

#### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation
<b>Eye/Face:</b>	Wear safety glasses
<b>Skin:</b>	Wear chemical resistant protective gloves
<b>Respiratory:</b>	If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear	<b>Odor:</b>	Solvent
<b>Odor threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	-95°C	<b>Boiling Point:</b>	56°C (133°F)
<b>Flash Point:</b>	-17°C (1.4°F)	<b>Evaporation Rate:</b>	>1.0 (butyl acetate=1)
<b>Flammability:</b>	Category 2	<b>LFL/UFL:</b>	1.2% / 12.8%
<b>Vapor Pressure:</b>	190 mmHg @ 20°C	<b>Vapor Density:</b>	Greater than air
<b>Relative Density:</b>	0.896	<b>Solubility:</b>	Solvent soluble in water
<b>Partition Coefficient K<sub>ow</sub>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	465-536°C (869-997°F)
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	Not available

VOC Content: 234.1 g/L (EPA Method 24)  
Photochemically reactive VOC: 127.7 g/L

# 6.7 FiberTite® FTR-290 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-290 Adhesive

Rev. Date: 17 Oct 2014

### SECTION 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at recommended storage and handling conditions
<b>Conditions to Avoid:</b>	Sources of ignition
<b>Incompatible Materials:</b>	Oxidizing agents, strong acids, strong bases
<b>Hazardous Decomposition:</b>	Carbon monoxide, carbon dioxide
<b>Hazardous Reactions:</b>	Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Material is flammable, irritating to eyes and skin, can cause dizziness/drowsiness
<b>Inhalation:</b>	May cause dizziness and/or drowsiness, headaches, and irritation of the lungs
<b>Skin Contact:</b>	Drying of skin and dermatitis may occur
<b>Eye Contact:</b>	May cause irritation, redness, and burning; vapors may also cause irritation
<b>Ingestion:</b>	Irritation of gastrointestinal tract, large quantities may have toxic effects
<b>Target Organs:</b>	Central nervous system, skin, eyes, liver, kidneys

#### ACUTE TOXICITY

General Information: In high concentration the material is irritating to the mucous membranes, can induce a narcotic effect, and cause loss of coordination and reaction.

Component Analysis:

Acetone (67-64-1):	
Oral LD50 Rat:	>5000 mg/kg
Dermal LD50 Rabbit:	>15700 mg/kg
Inhalation (rat):	32000 mg/m <sup>3</sup> (4-hr dose)
Toluene (108-88-3):	
Oral LD50 Rat:	636 mg/kg
Dermal LD50 Rabbit:	14100 mg/kg
Inhalation (mouse):	440 mg/L (24-hr dose)

#### CARCINOGENICITY

General Information: This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

Component Analysis:

Toluene (108-88-3):	
IARC:	3 – Unclassifiable as to Carcinogenicity in Humans
ACGIH:	A4 – Not classifiable as a Human Carcinogen

#### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION

This product contains components that will normally float on water. These components may be harmful to aquatic organisms and may cause long term effects in the aquatic environment.

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

### SECTION 14. TRANSPORTATION INFORMATION

This product is hazardous for transportation.

# 6.7 FiberTite® FTR-290 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-290 Adhesive

Rev. Date: 17 Oct 2014

Shipping Name: Adhesives (contains toluene, acetone)  
Class: 3 Packing Group: II ID No.: NA1133 NAERG: 128

### SECTION 15. REGULATORY INFORMATION

SARA Title III: Health: Acute YES Chronic YES EHS NO  
Physical: Fire YES Reactivity NO Pressure NO

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):  

Component	% by weight
Toluene (CAS# 108-88-3)	1-5 %

California Proposition 65: **WARNING:** This material contains a chemical known to the State of California to cause birth defects or other reproductive harm: Toluene (CAS# 108-88-3)

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111.

FiberTite® is a registered trademark of Seaman Corporation.



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## SAFETY DATA SHEET

### FiberTite® FTR-390 Adhesive

Rev. Date: 7 Dec 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-390 Roofing Adhesive

**Recommended Use:** Roofing adhesive

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** WARNING

**GHS Classification:**

Eye Irritation – Category 2A  
Skin Sensitization - Category 1

**Hazard Statements:**

Causes serious eye irritation  
May cause an allergic skin reaction

**Precautionary Statements:**

Avoid breathing dust/fume/gas/mist/vapors/spray.  
Wash face, hands and any exposed skin thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
If skin irritation or rash occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
Wash contaminated clothing before reuse.

**Storage:**

none

# 6.8 FiberTite® FTR-390 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-390 Adhesive

Rev. Date: 7 Dec 2014

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Petroleum asphalt	8052-42-4	40-70

## SECTION 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. Seek medical attention if symptoms persist.
<b>Skin Contact:</b>	Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.
<b>Eye Contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
<b>Ingestion:</b>	Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

<b>Flammable Properties:</b>	Thermal decomposition may release irritating, corrosive and/or toxic gases.
<b>Suitable Extinguishing Media:</b>	alcohol resistant foam, CO <sub>2</sub> , powders, water spray
<b>Products of Combustion:</b>	Fire will produce dense black smoke.
<b>Protection of Firefighters:</b>	Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

## SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8. Use only in well ventilated area. Eliminate any source of ignition. Wash hands after contact.
<b>Storage:</b>	Avoid extreme temperatures. KEEP FROM FREEZING. Shelf life one year from manufacture date. Keep away from oxidizing agents and strongly acid or strongly alkaline materials.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Petroleum asphalt (8052-42-4)		0.5 mg/m <sup>3</sup> TWA (respirable fraction- as benzene-soluble aerosol)		

# 6.8 FiberTite® FTR-390 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-390 Adhesive

Rev. Date: 7 Dec 2014

### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation
<b>Eye/Face:</b>	Wear safety glasses
<b>Skin:</b>	Wear chemical resistant protective gloves
<b>Respiratory:</b>	If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Black liquid	<b>Odor:</b>	Faint petroleum
<b>Odor threshold:</b>	Not available	<b>pH:</b>	10.2-11.2
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	100°C (212°F)
<b>Flash Point:</b>	>100°C (212°F)	<b>Evaporation Rate:</b>	<1.0 (butyl acetate=1)
<b>Flammability:</b>	n/a	<b>LFL/UFL:</b>	Not available
<b>Vapor Pressure:</b>	260 mmHg @ 100°C	<b>Vapor Density:</b>	Greater than air
<b>Relative Density:</b>	1.02	<b>Solubility:</b>	Dispersible
<b>Partition Coefficient <math>K_{ow}</math>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	Not available

### SECTION 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at recommended storage and handling conditions
<b>Conditions to Avoid:</b>	Sources of ignition
<b>Incompatible Materials:</b>	Oxidizing agents, strong acids, strong bases
<b>Hazardous Decomposition:</b>	Carbon monoxide, carbon dioxide
<b>Hazardous Reactions:</b>	Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Irritating to eyes and skin
<b>Inhalation:</b>	May cause irritation of the lungs
<b>Skin Contact:</b>	Drying of skin and dermatitis may occur
<b>Eye Contact:</b>	May cause irritation, redness, and burning; vapors may also cause irritation
<b>Ingestion:</b>	Irritation of gastrointestinal tract
<b>Target Organs:</b>	Skin, eyes, lungs

**ACUTE TOXICITY** Toxicological testing has not been conducted on this product.

**CARCINOGENICITY** This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. In addition, none of the components present at levels greater than 0.1% are classified as carcinogens.

**CHRONIC TOXICITY** No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

# 6.8 FiberTite® FTR-390 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-390 Adhesive

Rev. Date: 7 Dec 2014

### SECTION 14. TRANSPORTATION INFORMATION

This product is not hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>NO</u>	EHS <u>NO</u>
	Physical:	Fire <u>NO</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):

<u>Component</u>	<u>% by weight</u>
None	

California Proposition 65: **WARNING:** This material contains chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111.

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## SAFETY DATA SHEET

### FiberTite® FTR-490 Adhesive

Rev. Date: 22 Dec 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-490 Roofing Adhesive

**Recommended Use:** Roofing adhesive

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

**PHONE:** (330) 262-1111  
**INTERNET:** [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

#### GHS Classification:

Flammable Liquid – Category 4  
Acute Toxicity - Oral - Category 3  
Acute Toxicity - Dermal - Category 3  
Acute Toxicity - Inhalation - Category 3  
Aspiration Hazard – Category 1  
Skin Irritation – Category 2  
Toxic to Reproduction – Category 2  
Specific Target Organ Toxicity (Single Exposure) – Category 2  
Specific Target Organ Toxicity (Repeated Exposure) – Category 1

#### Hazard Statements:

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat/sparks/open flames/hot surfaces - No smoking.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash face, hands and any exposed skin thoroughly after handling.  
Do no eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

#### Precautionary Statements:

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat.



# 6.9 FiberTite® FTR-490 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-490 Adhesive

Rev. Date: 22 Dec 2014

Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe vapor.  
Wash face, hands and any exposed skin thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Use personal protective equipment as required.

### Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
IF ON SKIN: Wash with plenty of soap and water.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
IF exposed: Call a POISON CENTER or doctor/physician.  
IF exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor/physician.  
Get medical advice/attention if you feel unwell.  
Rinse mouth.  
Do NOT induce vomiting.  
If skin irritation occurs: Get medical advice/attention.  
Remove/Take off immediately all contaminated clothing.  
Take off contaminated clothing and wash before reuse.  
Wash contaminated clothing before reuse.  
In case of fire: Use foam/CO2/powder/water spray for extinction.

### Storage:

Store in a well-ventilated place. Keep cool.  
Store locked up.

### Disposal:

Disposal of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Toluene	108-88-3	3-10
Methanol	67-56-1	1-5

## SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is combustible.

**Suitable Extinguishing Media:** alcohol resistant foam, CO2, powders, water spray

**Products of Combustion:** Carbon monoxide and carbon dioxide

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

# 6.9 FiberTite® FTR-490 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-490 Adhesive

Rev. Date: 22 Dec 2014

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8. Use only in well ventilated area. Eliminate any source of ignition. Ground and bond all equipment when handling. Wash hands after contact.
<b>Storage:</b>	Storage temperature 60°F to 95°F (15°C to 35°C). Shelf life one year from manufacture date. Avoid heating or direct sunlight.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Toluene (108-88-3)	200 ppm (590 mg/m <sup>3</sup> ) TWA; 300 ppm STEL	20 ppm TWA	-	
Methanol (67-56-1)	200 ppm (260 mg/m <sup>3</sup> ) TWA	200 ppm (262 mg/m <sup>3</sup> ) TWA; 250 ppm (328 mg/m <sup>3</sup> ) STEL	200 ppm (260 mg/m <sup>3</sup> ) TWA; 250 ppm (325 mg/m <sup>3</sup> ) STEL	

#### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation
<b>Eye/Face:</b>	Wear safety glasses
<b>Skin:</b>	Wear chemical resistant protective gloves
<b>Respiratory:</b>	If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White liquid	<b>Odor:</b>	Solvent
<b>Odor threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	>100°C (212°F)
<b>Flash Point:</b>	91.1°C (196°F)	<b>Evaporation Rate:</b>	>1.0 (butyl acetate=1)
<b>Flammability:</b>	Category 4	<b>LFL/UFL:</b>	1.2% / 7.1% (toluene only)
<b>Vapor Pressure:</b>	Not determined	<b>Vapor Density:</b>	Greater than air
<b>Relative Density:</b>	1.078 (8.99 lb/gal)	<b>Solubility:</b>	Soluble
<b>Partition Coefficient K<sub>ow</sub>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	Not available

VOC Content: 179 g/L (EPA Method 24)

Photochemically reactive VOC: 109.7 g/L

### SECTION 10. STABILITY AND REACTIVITY

# 6.9 FiberTite® FTR-490 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-490 Adhesive

Rev. Date: 22 Dec 2014

<b>Chemical Stability:</b>	Stable at recommended storage and handling conditions
<b>Conditions to Avoid:</b>	Sources of ignition
<b>Incompatible Materials:</b>	Oxidizing agents, strong acids, strong bases
<b>Hazardous Decomposition:</b>	Carbon monoxide, carbon dioxide
<b>Hazardous Reactions:</b>	Will not occur

## SECTION 11. TOXICOLOGY INFORMATION

### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Eye and skin irritation
<b>Inhalation:</b>	Can cause severe CNS depression. May cause headaches and dizziness. Prolonged or repeated exposure may cause liver and kidney damage.
<b>Skin Contact:</b>	May cause moderate skin irritation. Prolonged or repeated contact can result in defatting and drying of the skin resulting in skin irritation and dermatitis.
<b>Eye Contact:</b>	Mildly irritating to the eyes
<b>Ingestion:</b>	Harmful or fatal if swallowed. Pulmonary respiration hazard. While ingesting or vomiting, may enter lungs and produce damage. May produce CNS effects, which include dizziness, loss of balance and coordination, or unconsciousness. Irritating to mouth, throat, and stomach.
<b>Target Organs:</b>	Central nervous system, skin, eyes, liver, kidneys

### ACUTE TOXICITY

<b>General Information:</b>	Water based material with small amounts of methanol and toluene, which can have toxic effects in large quantities.
<b>Component Analysis:</b>	<p>Toluene (108-88-3):</p> <p>Oral LD50 Rat: 636 mg/kg</p> <p>Dermal LD50 Rabbit: 14100 mg/kg</p> <p>Inhalation (mouse): 440 mg/L (24-hr dose)</p> <p>Methanol (67-56-1):</p> <p>Inhalation (rat): 64000 ppm (4-hr dose)</p>

### CARCINOGENICITY

<b>General Information:</b>	This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.
<b>Component Analysis:</b>	<p>Toluene (108-88-3):</p> <p>IARC: 3 – Unclassifiable as to Carcinogenicity in Humans</p> <p>ACGIH: A4 – Not classifiable as a Human Carcinogen</p>

### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

## SECTION 12. ECOLOGICAL INFORMATION

Components may be harmful to aquatic organisms and may cause long term effects in the aquatic environment.

Do not empty into drains or waterways.

## SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

## SECTION 14. TRANSPORTATION INFORMATION

This product is hazardous for transportation.

<b>Shipping Name:</b>	Combustible liquid, n.o.s. (contains toluene, methanol)
<b>Class:</b>	3
<b>Packing Group:</b>	III
<b>ID No.:</b>	NA1993
<b>NAERG:</b>	128

# 6.9 FiberTite® FTR-490 Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-490 Adhesive

Rev. Date: 22 Dec 2014

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>YES</u>	EHS <u>NO</u>
	Physical:	Fire <u>YES</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>
SARA 313 (TRI):	This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):			
		<u>Component</u>	<u>% by weight</u>	
		Toluene (CAS# 108-88-3)	1-5 %	
California Proposition 65:	<b>WARNING:</b> This material contains a chemical known to the State of California to cause birth defects or other reproductive harm: Toluene (CAS# 108-88-3)			

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

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## SAFETY DATA SHEET

### FiberTite® FTR-601A Adhesive, Part A

Rev. Date: 23 Dec 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-601A Adhesive, Part A

**Recommended Use:** Foamable adhesive

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

**GHS Classification:**

Acute Toxicity - Inhalation - Category 4  
Skin Irritation - Category 2  
Eye Irritation - Category 2A  
Respiratory Sensitization - Category 1  
Skin Sensitization - Category 1  
Carcinogenicity - Category 2  
Specific Target Organ Toxicity (Single Exposure) - Category 3 (Respiratory irritation)  
Specific Target Organ Toxicity (Repeated Exposure) - Category 2

**Hazard Statements:**

Harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
Suspected of causing cancer  
May cause respiratory irritation  
May cause damage to organs (respiratory system, eyes, skin) through prolonged or repeated exposure

**Precautionary Statements:**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash face, hands and any exposed skin thoroughly after handling.

# 6.10 FiberTite® FTR-601A Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601A Adhesive, Part A

Rev. Date: 23 Dec 2014

Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.  
In case of inadequate ventilation wear respiratory protection.

### Response:

IF ON SKIN: Wash with plenty of soap and water.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
If skin irritation or rash occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.  
Take off contaminated clothing and wash before reuse.

### Storage:

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Polymethylene polyphenyl isocyanate	9016-87-9	30-60
Methylene bisphenyl diisocyanate	101-68-8	20-40
Methylene diphenyl diisocyanate	26447-40-5	0-15

## SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.  
**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.  
**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.  
**Ingestion:** Rinse mouth thoroughly with water. Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** No unusual fire or explosion hazards  
**Suitable Extinguishing Media:** alcohol resistant foam, CO<sub>2</sub>, powders, water spray  
**Products of Combustion:** Carbon oxides, nitrogen oxides, hydrocarbons, cyanide compounds  
**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

# 6.10 FiberTite® FTR-601A Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601A Adhesive, Part A

Rev. Date: 23 Dec 2014

### SECTION 7. HANDLING AND STORAGE

- Handling:** Use protective equipment recommended in Section 8. Use only in well ventilated area. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid contact with water or moisture.
- Storage:** Keep container tightly closed and in a well ventilated area. Storage temperature 65°F to 85°F (18°C to 30°C). Store away from incompatible materials (see Section 10). Do not re-seal contaminated product as a hazardous build-up of pressure may result from liberation of CO<sub>2</sub> gas.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Methylene bisphenyl isocyanate (101-68-8) (MDI)	0.02 ppm (0.2 mg/m <sup>3</sup> ) CEILING	0.005 ppm (0.051 mg/m <sup>3</sup> ) TWA; 0.02 ppm (0.2 mg/m <sup>3</sup> ) CEILING	0.005 ppm (0.05 mg/m <sup>3</sup> ) TWA; 0.02 ppm (0.2 mg/m <sup>3</sup> ) C (10 min)	
Polymethylene polyphenyl isocyanate (9016-87-9)	-	-	-	None established

#### PERSONAL PROTECTIVE EQUIPMENT

- Engineering Controls:** Provide local exhaust ventilation
- Eye/Face:** Wear safety glasses
- Skin:** Wear chemical resistant protective gloves
- Respiratory:** If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
- General Hygiene:** Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Tan viscous liquid	<b>Odor:</b>	Faint aromatic
<b>Odor threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	Not available
<b>Flash Point:</b>	>176.7°C (350°F)	<b>Evaporation Rate:</b>	Not available
<b>Flammability:</b>	na	<b>LFL/UFL:</b>	Not available
<b>Vapor Pressure:</b>	Not determined	<b>Vapor Density:</b>	Not available
<b>Relative Density:</b>	1.12	<b>Solubility:</b>	Reacts with water
<b>Partition Coefficient K<sub>ow</sub>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	3200-11000 cP @75°F

### SECTION 10. STABILITY AND REACTIVITY

- Chemical Stability:** Stable at recommended storage and handling conditions
- Conditions to Avoid:** Elevated temperatures, moisture
- Incompatible Materials:** Strong oxidizing agents, strong acids, strong bases, alcohols, amines, water, brass, copper, tin, zinc, aluminum, galvanized metals
- Hazardous Decomposition:** Carbon oxides, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, hydrocarbons
- Hazardous Reactions:** Reacts with water and emits carbon dioxide gas.

# 6.10 FiberTite® FTR-601A Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601A Adhesive, Part A

Rev. Date: 23 Dec 2014

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

**Summary:** Causes skin, eye and respiratory tract irritation. May cause allergic respiratory and skin reactions. May polymerize.

**Inhalation:** Causes respiratory tract irritation. May cause allergic respiratory reaction.

**Skin Contact:** Causes skin irritation. May cause allergic skin reaction.

**Eye Contact:** Causes eye irritation.

**Ingestion:** Ingestion may cause vomiting, nausea, diarrhea, or other systemic effects.

**Target Organs:** Respiratory system, eyes, skin, lungs

#### ACUTE TOXICITY

**General Information:** May cause allergic respiratory and skin reactions. May cause discomfort if swallowed. May cause skin and eye irritation.

#### **Component Analysis:**

Methylene bisphenyl isocyanate (101-68-8):  
Inhalation LC50 (rat): 0.369 mg/L (4-hr dose)  
Polymethylene polyphenyl isocyanate (9016-87-9):  
Inhalation LC50 (rat): 0.369 mg/L (4-hr dose)

#### CARCINOGENICITY

**General Information:** This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### **Component Analysis:**

Methylene bisphenyl isocyanate (101-68-8):  
IARC: 3 – Unclassifiable as to Carcinogenicity in Humans  
Polymethylene polyphenyl isocyanate (9016-87-9):  
IARC: 3 – Unclassifiable as to Carcinogenicity in Humans

#### CHRONIC TOXICITY

No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

### SECTION 14. TRANSPORTATION INFORMATION

This product is not hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>YES</u>	EHS <u>NO</u>
	Physical:	Fire <u>NO</u>	Reactivity <u>YES</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):



# 6.10 FiberTite® FTR-601A Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601A Adhesive, Part A

Rev. Date: 23 Dec 2014

Component	% by weight
Polymethylene polyphenyl isocyanate	30-60
Methylene bisphenyl diisocyanate (see also Group N120 Diisocyanates)	20-40

California Proposition 65:

**WARNING:** This material contains chemicals known to the State of California to cause cancer.

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111

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## SAFETY DATA SHEET

### FiberTite® FTR-601B Adhesive, Part B

Rev. Date: 23 Dec 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-601B Adhesive, Part B

**Recommended Use:** Foamable adhesive

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY: (800) 424-9300 (Chemtrec)**

#### SECTION 2. HAZARDS IDENTIFICATION

This material does not meet any hazard classification under the Hazard Communication Standard. Under normal use and handling, the product is not expected to create any physical or health hazards.

**Pictograms:** none

**Signal Word:** none

**GHS Classification:** none

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Dipropylene glycol	25265-71-8	1-2.5

#### SECTION 4. FIRST AID MEASURES

**Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.

**Skin Contact:** Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.

**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.

**Ingestion:** Seek medical advice

#### SECTION 5. FIRE FIGHTING MEASURES

**Flammable Properties:** No unusual fire or explosion hazards

**Suitable Extinguishing Media:** alcohol resistant foam, CO<sub>2</sub>, powders, water spray

**Products of Combustion:** Carbon oxides, nitrogen oxides, organic acid vapors, cyanide compounds

**Protection of Firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

# 6.11 FiberTite® FTR-601B Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601B Adhesive, Part B

Rev. Date: 23 Dec 2014

**Personal Precautions:** Use personal protection recommended in Section 8.  
**Environmental Precautions:** No special procedures necessary  
**Methods for Containment:** No special procedures necessary  
**Methods for Clean-up:** No special procedures necessary

### SECTION 7. HANDLING AND STORAGE

**Handling:** Use protective equipment recommended in Section 8. Wash thoroughly after handling.  
**Storage:** Keep container closed. Store away from incompatible materials (see Section 10).

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

COMPONENT	OSHA (PEL)	ACGIH (TLV)	NIOSH (REL)	COMMENTS
Dipropylene glycol (25265-71-8)	-	-	-	None established

#### PERSONAL PROTECTIVE EQUIPMENT

**Engineering Controls:** Provide local exhaust ventilation  
**Eye/Face:** Wear safety glasses  
**Skin:** Wear chemical resistant protective gloves  
**Respiratory:** If exposure limits are exceeded, NIOSH approved respiratory protection must be provided  
**General Hygiene:** Wash hands with soap and water after handling material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Colorless viscous liquid	<b>Odor:</b>	Polyether
<b>Odor threshold:</b>	Not available	<b>pH:</b>	9-10
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	Not available
<b>Flash Point:</b>	>176.7°C (350°F)	<b>Evaporation Rate:</b>	Not available
<b>Flammability:</b>	na	<b>LFL/UFL:</b>	Not available
<b>Vapor Pressure:</b>	Not determined	<b>Vapor Density:</b>	Not available
<b>Relative Density:</b>	0.98	<b>Solubility:</b>	Not available
<b>Partition Coefficient <math>K_{ow}</math>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	3200-11800 cP

### SECTION 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable at recommended storage and handling conditions  
**Conditions to Avoid:** Elevated temperatures, moisture  
**Incompatible Materials:** Strong oxidizing agents, isocyanates, water, brass, copper, tin, zinc, aluminum, galvanized metals  
**Hazardous Decomposition:** None known  
**Hazardous Reactions:** Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

**Summary:** Direct contact with eyes may cause temporary irritation.  
**Inhalation:** None known  
**Skin Contact:** None known  
**Eye Contact:** Direct contact with eyes may cause temporary irritation.

# 6.11 FiberTite® FTR-601B Adhesive



## Seaman Corporation Safety Data Sheet FiberTite® FTR-601B Adhesive, Part B

Rev. Date: 23 Dec 2014

**Ingestion:** No harmful effects expected in amounts likely to be ingested by accident.  
**Target Organs:** Eyes

**ACUTE TOXICITY:** Direct contact with eyes may cause temporary irritation. No sensitizing effects known.

**CARCINOGENICITY** This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

**CHRONIC TOXICITY** No data is available on mutagenicity, reproductive effects, or developmental effects.

### SECTION 12. ECOLOGICAL INFORMATION

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. This material may be classified as hazardous under the Resource Conservation and Recovery Act. (40 CFR 261)

### SECTION 14. TRANSPORTATION INFORMATION

This product is not hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III: Health: Acute NO Chronic NO EHS NO  
Physical: Fire NO Reactivity NO Pressure NO

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):  
Component % by weight  
none

California Proposition 65: **WARNING:** This material contains chemicals known to the State of California to cause cancer.

### SECTION 16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. No warranty of merchantability or any other warranty, expressed or implied, is given. In no case shall the information provided herein be considered a part of the terms and conditions of sale. Seaman Corporation assumes no obligation or liability for the information given or results obtained. All materials may present unknown hazards and should be used with caution. Final determination of suitability of any material is the sole responsibility of the user.

For questions related to the safety of this product, e-mail [msds@seamancorp.com](mailto:msds@seamancorp.com) or call (330) 262-1111  
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# 6.12 FiberTite® FTR-SLS Sealant



## SAFETY DATA SHEET

### FiberTite® FTR-SLS Sealant

Rev. Date: 6 Nov 2014

#### SECTION 1. PRODUCT & COMPANY INFORMATION

**Product Name:** FTR-SLS Sealant

**Recommended Use:** Moisture cure sealant

**Manufacturer:** SEAMAN CORPORATION  
1000 Venture Blvd.  
Wooster, OH 44691 USA

PHONE: (330) 262-1111  
INTERNET: [www.seamancorp.com](http://www.seamancorp.com)  
**24-HR EMERGENCY:** (800) 424-9300 (Chemtrec)

#### SECTION 2. HAZARDS IDENTIFICATION

**Pictograms:**



**Signal Word:** DANGER

**GHS Classification:**

Eye Damage - Category 1  
Skin Sensitization - Category 1

**Hazard Statements:**

Causes serious eye damage  
May cause an allergic skin reaction

**Precautionary Statements:**

Avoid breathing dust/fume/gas/mist/vapors/spray.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.

**Storage:**

none

# 6.12 FiberTite® FTR-SLS Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-SLS Sealant

Rev. Date: 6 Nov 2014

### Disposal:

Dispose of contents/container in accordance with local/regional/national regulations

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS No.</u>	<u>% by weight</u>
Amino silane	1760-24-3	1-5

## SECTION 4. FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. Seek medical attention if symptoms persist.
<b>Skin Contact:</b>	Wash exposed skin with soap and water. Do not use solvents or thinners. If irritation develops or persists, seek medical attention.
<b>Eye Contact:</b>	Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
<b>Ingestion:</b>	Seek medical attention. Do not induce vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

<b>Flammable Properties:</b>	Material is not considered flammable.
<b>Suitable Extinguishing Media:</b>	alcohol resistant foam, CO2, powders, water spray
<b>Products of Combustion:</b>	Acrid fumes, carbon monoxide, carbon dioxide
<b>Protection of Firefighters:</b>	Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. No special procedures are expected to be necessary for this product.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	No special procedures necessary
<b>Methods for Containment:</b>	No special procedures necessary
<b>Methods for Clean-up:</b>	No special procedures necessary

## SECTION 7. HANDLING AND STORAGE

<b>Handling:</b>	Use protective equipment recommended in Section 8.
<b>Storage:</b>	Store in a cool, dry area. This product will polymerize when in contact with moisture.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE GUIDELINES

None established

### PERSONAL PROTECTIVE EQUIPMENT

<b>Engineering Controls:</b>	Provide local exhaust ventilation
<b>Eye/Face:</b>	Wear safety glasses
<b>Skin:</b>	Wear chemical resistant protective gloves
<b>Respiratory:</b>	If exposure limits are exceeded, NIOSH approved respiratory protection must be provided
<b>General Hygiene:</b>	Wash hands with soap and water after handling material.

# 6.12 FiberTite® FTR-SLS Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-SLS Sealant

Rev. Date: 6 Nov 2014

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Various	<b>Odor:</b>	Mild ester
<b>Odor threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	Not available
<b>Flash Point:</b>	Not applicable	<b>Evaporation Rate:</b>	Not applicable
<b>Flammability:</b>	Not applicable	<b>LFL/UFL:</b>	Not applicable
<b>Vapor Pressure:</b>	Not available	<b>Vapor Density:</b>	Greater than air
<b>Relative Density:</b>	~11.7 lb/gal	<b>Solubility:</b>	Insoluble in water
<b>Partition Coefficient K<sub>ow</sub>:</b>	Not available	<b>Auto-Ignition Temp.:</b>	Not available
<b>Decomposition Temp.:</b>	Not applicable	<b>Viscosity:</b>	~30,000 cP

### SECTION 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at recommended storage and handling conditions
<b>Conditions to Avoid:</b>	None known
<b>Incompatible Materials:</b>	None known
<b>Hazardous Decomposition:</b>	None known
<b>Hazardous Reactions:</b>	Will not occur

### SECTION 11. TOXICOLOGY INFORMATION

#### POTENTIAL HEALTH EFFECTS:

<b>Summary:</b>	Material can be irritating to eyes and skin
<b>Inhalation:</b>	Low volatility, not likely route of exposure
<b>Skin Contact:</b>	Drying of skin and dermatitis may occur
<b>Eye Contact:</b>	Can cause severe irritation
<b>Ingestion:</b>	May be harmful if ingested
<b>Target Organs:</b>	Skin, Eyes

#### ACUTE TOXICITY

Causes eye irritation. Causes skin irritation. Allergic reactions are possible. Repeated or prolonged contact with skin may cause sensitization.  
LD50 data based on aminosilane:  
Oral: LD50 > 2000 mg/kg (very low order of toxicity)  
Skin: LD50 > 2000 mg/kg (very low order of toxicity)

#### CARCINOGENICITY

This product is not classified as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC. No specific data available.

#### CHRONIC TOXICITY

Susceptible individuals may develop allergic reactions such as dermatitis on a single significant skin or respiratory exposure or may become sensitized to the material on repeated and prolonged contact. Hence all forms of exposure be kept to an absolute minimum.

### SECTION 12. ECOLOGICAL INFORMATION

Do not empty into drains or waterways.

### SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with Federal, State, and local environmental control regulations. If product as supplied becomes a waste, it will not meet the criteria of a hazardous waste under the Resource Conservation and Recovery Act (40 CFR 261).

This product becomes a firm synthetic rubber when cured. Please allow to cure before disposal.

# 6.12 FiberTite® FTR-SLS Sealant



## Seaman Corporation Safety Data Sheet FiberTite® FTR-SLS Sealant

Rev. Date: 6 Nov 2014

### SECTION 14. TRANSPORTATION INFORMATION

This product is not hazardous for transportation.

### SECTION 15. REGULATORY INFORMATION

SARA Title III:	Health:	Acute <u>YES</u>	Chronic <u>YES</u>	EHS <u>NO</u>
	Physical:	Fire <u>NO</u>	Reactivity <u>NO</u>	Pressure <u>NO</u>

SARA 313 (TRI): This product contains the following chemicals subject to reporting under Superfund Amendments Reauthorization Act, Title III, Section 313 (Toxic Release Inventory):

<u>Component</u>	<u>% by weight</u>
NONE	

California Proposition 65: NONE

### SECTION 16. OTHER INFORMATION

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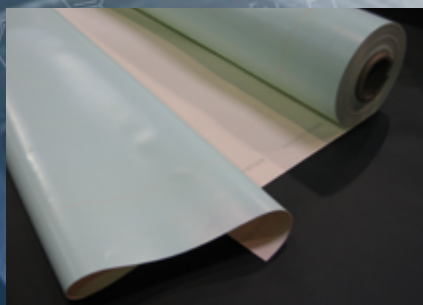
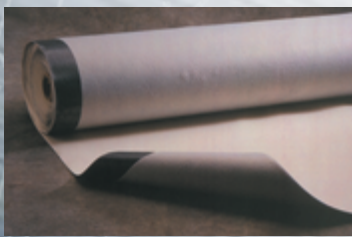




The background features a collage of translucent, overlapping shapes in shades of blue, green, and gold. Faint chemical formulas are visible in the background, including  $\text{Ca(OH)}_2 + \text{SiO}_2 + \text{H}_2\text{O} = \text{CaO} + \text{SiO}_2 + \text{H}_2\text{O}$ ,  $\text{Ca(OH)}_2 + \text{Al}_2\text{O}_3 + \text{H}_2\text{O} = \text{CaO} + \text{Al}_2\text{O}_3 + \text{H}_2\text{O}$ , and  $\text{Ca(OH)}_2 + \text{SiO}_2 + \text{H}_2\text{O} = \text{CaO} + \text{SiO}_2 + \text{H}_2\text{O}$ .

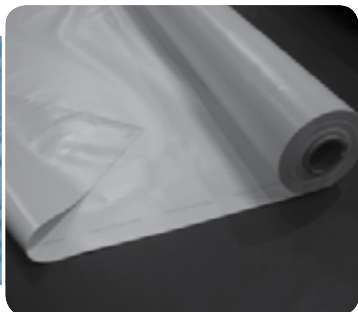
# Product Data

## Product Data



<b>FiberTite® Membranes</b>	<b>7.1</b>
<b>FiberTite® Base Sheets</b>	<b>7.2</b>
<b>FiberTite® Fasteners/Stress Plates</b>	<b>7.3</b>
<b>FiberTite® Insulation Materials</b>	<b>7.4</b>
<b>FiberTite® Sealants/Adhesives</b>	<b>7.5</b>
<b>FiberTite® Accessories</b>	<b>7.6</b>

# 7.1 FiberTite® Membranes



## 36 mil FiberTite

### Product Data

Seaman Corporation's 36 mil FiberTite membrane was introduced in 1979. Then, as now, the membrane features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

36 mil FiberTite is a 30-oz sq. yd./nominal 36-mil (0.9 mm) thick membrane and was used as the benchmark membrane for the development of ASTM D 6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing. In addition to exceeding the ASTM minimum standards, 36 mil FiberTite meets or exceeds the physical properties and performance characteristics of most competitive 60-mil membranes.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

36 mil FiberTite is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 36 mil FiberTite exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

36 mil FiberTite membrane is manufactured in conventional 74-in and 100-in wide by 100-ft roll goods. 36 mil FiberTite is also available in customized prefabricated roll widths and lengths that incorporate integrated fastening tabs, sealing tabs and also "no-tab" rolls of membrane up to 20-ft wide by 100-ft in length. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	36 mil Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	.91 (0.036 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.23 (0.009)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 170°/150 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-30
Low Temperature Bend ASTM D 2136 (°F)	-30	-30
Change in Weight after Exposure in Water D 471 158°F, 168 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	4.8 (700)
Static Puncture Resistance ASTM D 5602 (89 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	20



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fibertite.com

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[www.fibertite.com/document-library/product-data-sheets](http://www.fibertite.com/document-library/product-data-sheets)



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 3400, 4391, 9795.



DCI 96



CFFA CHEMICAL FABRICS & FILM ASSOCIATION, INC.



ESR-1456



# 7.1 FiberTite® Membranes

## 36 mil FiberTite

### Product Data

#### APPLICATION

36 mil FiberTite Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 36 mil FiberTite Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e bonding adhesive to pre-approved substrates. 36 mil FiberTite can also be installed in typical ballast configurations using conventional stone or paver ballast.

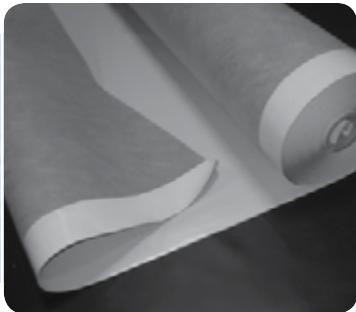
For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	36 mil Typical
Accelerated Weathering Practice G 155 / xenon	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering Practice G 154 / UVA	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungi Resistance Practice G 21, 28 days	no growth none	no growth none
Sustained Growth Discoloration		
Abrasion Test, cycles D 3389 H-18 wheel / 1,000 g load	1,500	1,500
<b>Additional Physical Properties</b>		
Tensile Strength (psi) ASTM D882		8500
Breaking Strength (lbs) ASTM D751, Grab Method		450
Puncture Resistance (lbs) ASTM D751, Bursting Strength		350
Water Vapor Transmission ASTM E96 proc. A (gm/m2/24hrs)		1.3
Shore A Hardness ASTM D2240		87
Flame Resistance MIL-C-20696C / Type II Class 2		pass
Oil Resistance, MIL-C-20696C No swelling, cracking or leaking		none
Hydrocarbon Resistance, MIL-C-20696C No swelling, cracking or leaking		none
High Temperature Dead Load ASTM D751 (50 lbs, 160°F, 4 hrs)		pass
<b>Energy Attributes (Color DC196 Off-White)</b>		
Solar Reflectance ASTM E803 ASTM E1918		79% 83%
Solar Reflectance (3 yr aged) ASTM C1549	Un-Cleaned 66%	Cleaned 78%
Solar Emittance ASTM E408 ASTM C1371		95% 85%
Solar Emittance (3 yr aged) ASTM C1371	Un-Cleaned 74%	Cleaned 81%
Energy Star		yes
Solar Reflective Index (SRI) ASTM E1980		98.54
LEED 2.2 - Heat Island Effect SS Credit 7.2		1 Credit



# 7.1 FiberTite® Membranes



## 36 mil FiberTite-FB

### Product Data

Seaman Corporation's 36 mil FiberTite-FB "fleece back" membrane features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

36 mil FiberTite-FB "fleece back" is a 30-oz sq. yd/nominal 36-mil (0.9 mm) thick membrane. In addition to exceeding the ASTM D 6754-02 Standard Specification for Ketone Ethylene Based Sheet Roofing's minimum standards, 36 mil FiberTite-FB meets or exceeds the physical properties and performance characteristics of most competitive 50-mil membranes.

The 36 mil FiberTite-FB membrane incorporates a 4-oz per sq. yd non-woven polyester felt, heat bonded to the back side of the membrane with a 3-in selvage edge for field welding. 36 mil FiberTite-FB is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

36 mil FiberTite-FB is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 36 mil FiberTite-FB exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	36 mil-FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	.91 (0.036 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.23 (0.009)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 120°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-30
Low Temperature Bend ASTM D 2136 (°)	-30	-30
Change in Weight after Exposure in Water D 471 158°/1, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	4.8 (700)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	20



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fiberlite.com

FiberTite® is a registered trademark of Seaman Corporation.

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As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 348L, 4390, 5179.



ICC196



CFFA - CHEMICAL FABRICS & FILM ASSOCIATION, INC.



ESR-1456



## 36 mil FiberTite-FB

### Product Data

#### APPLICATION

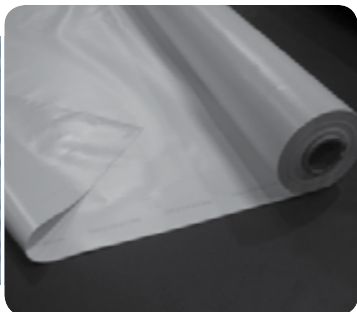
36 mil FiberTite-FB Roofing Systems are installed by adhering the "fleece back" membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02		Minimum Requirements	36 mil-FB Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Fungi Resistance <i>Practice G 21, 28 days</i>		Sustained Growth Discoloration	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>		1,500	1,500
Additional Physical Properties			
Tensile Strength (psi) <i>ASTM D882</i>		8500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>		450	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>		350	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>		1.3	
Shore A Hardness <i>ASTM D2240</i>		87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>		pass	
Oil Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>		none	
Hydrocarbon Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>		none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>		pass	
Energy Attributes (Color D196 Off-White)			
Solar Reflectance <i>ASTM E903</i> <i>ASTM E1918</i>		79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>		Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408</i> <i>ASTM C1371</i>		95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>		Un-Cleaned 74%	Cleaned 81%
Energy Star		yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>		98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>		1 Credit	

# 7.1 FiberTite® Membranes



## 45 mil FiberTite-SM

### Product Data

Seaman Corporation's 45 mil FiberTite-SM features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

45 mil FiberTite-SM is a 40-oz sq. yd/nominal 45-mil (1.1 mm) thick membrane. 45 mil FiberTite-SM not only meets or exceeds the minimum physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing, but exceeds the physical properties and performance characteristics of 60-mil competitive products.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

45 mil FiberTite-SM is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified (SM) economical version of Seaman Corporation's original KEE compound to control membrane costs while offering additional thickness and weather ability. Additionally, 45 mil FiberTite-SM exhibits excellent tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

45 mil FiberTite-SM membrane is manufactured in conventional, 74-in and 100-in wide by 100-ft roll goods. 45 mil FiberTite-SM is also available in customized prefabricated roll widths and lengths that incorporate integrated fastening tabs, sealing tabs and also "no-tab" rolls of membrane up to 20-ft wide by 100-ft in length. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

These specifications are current as of the date of printing. Revisions or additions may be issued periodically. For a listing, presentation, and download of the most recent data, visit:

[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	45 mil Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.14 (0.045 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.37 (0.0145)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 170°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°F)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.2 (750)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	25



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and U.S. roofing materials and systems directory 348L, 4890, 5179.



DC156



# 7.1 FiberTite® Membranes



## 45 mil FiberTite-SM

### Product Data

#### APPLICATION

45 mil FiberTite-SM Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 45 mil FiberTite-SM Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e bonding adhesive or FTR 490 bonding adhesive to pre-approved substrates. 45 mil FiberTite-SM can also be installed in typical ballast configurations using conventional stone or paver ballast.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

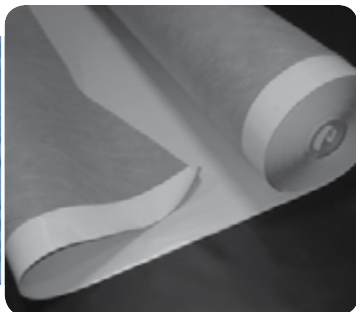
#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	45 mil Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungi Resistance <i>Practice G 21, 28 days</i>	no growth none	no growth none
Sustained Growth <i>Discoloration</i>		
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>	1,500	2,000+
Additional Physical Properties		
Tensile Strength (psi) <i>ASTM D882</i>	8500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>	450	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>	350	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m<sup>2</sup>/24hrs)</i>	1.3	
Shore A Hardness <i>ASTM D2240</i>	87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>	pass	
Oil Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
High Temperature Dead Load <i>ASTM D751 (30 lbs, 160°F; 4 hrs)</i>	pass	
Energy Attributes (Color DC196 Off-White)		
Solar Reflectance <i>ASTM E903 ASTM E1918</i>	79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>	Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408 ASTM C1371</i>	95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>	Un-Cleaned 74%	Cleaned 81%
Energy Star	yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>	98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>	1 Credit	





# 7.1 FiberTite® Membranes



## 45 mil FiberTite-SM-FB

### Product Data

Seaman Corporation's 45 mil FiberTite-SM-FB "fleece back" features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

45 mil FiberTite-SM-FB "fleece back" is a 40-oz sq. yd/nominal 45-mil (1.1 mm) thick membrane. 45 mil FiberTite-SM-FB not only meets or exceeds the minimum physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing, but exceeds the physical properties and performance characteristics of 60-mil competitive products.

The 45 mil FiberTite-SM-FB membrane incorporates a 4-oz per sq. yd non-woven polyesterfelt, heat bonded to the back side of the membrane with a 3-in selvage edge for field welding. 45 mil FiberTite-SM-FB fleece back is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

45 mil FiberTite-SM-FB is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified (SM) economical version of Seaman Corporation's original KEE compound to control membrane costs while offering additional thickness and weather ability. Additionally, 45 mil FiberTite-SM-FB exhibits excellent tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	45 mil-FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.14 (0.045 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.37 (0.0145)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 170°/150 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°F)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydraulic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.2 (750)
Static Puncture Resistance ASTM D 5602 (89 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	25



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

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Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 3405, 4390, 4395.



CHEMICAL FABRICS & FILM ASSOCIATION, INC.



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[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

## 45 mil FiberTite-SM-FB

### Product Data

#### APPLICATION

45 mil FiberTite-SM-FB Roofing Systems are installed by adhering the "fleece back" membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

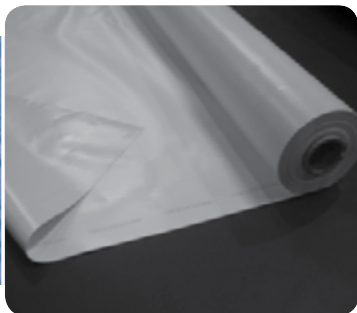
#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	45 mil-FB Typical
Accelerated Weathering Practice G 155 / xenon	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering Practice G 154 / UVA	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungal Resistance Practice G 21, 28 days	Sustained Growth Discoloration	no growth none
Abrasion Test, cycles D 3389 H-18 wheel / 1,000 g load	1,500	2,000+
Additional Physical Properties		
Tensile Strength (psi) ASTM D882	8500	
Breaking Strength (lbs) ASTM D751, Grab Method	450	
Puncture Resistance (lbs) ASTM D751, Bursting Strength	350	
Water Vapor Transmission ASTM E96 proc. A (gm/m2/24hrs)	1.3	
Shore A Hardness ASTM D2240	87	
Flame Resistance MIL-C-20696C / Type II Class 2	pass	
Oil Resistance, MIL-C 20696C No swelling, cracking or leaking	none	
Hydrocarbon Resistance, MIL-C-20696C No swelling, cracking or leaking	none	
High Temperature Dead Load ASTM D751 (50 lbs, 160°F; 4 hrs)	pass	
Energy Attributes (Color DC196 Off-White)		
Solar Reflectance ASTM E903 ASTM E1918	79% 83%	
Solar Reflectance (3 yr aged) ASTM C1549	Un-Cleaned 66%	Cleaned 78%
Solar Emittance ASTM E408 ASTM C1371	95% 85%	
Solar Emittance (3 yr aged) ASTM C1371	Un-Cleaned 74%	Cleaned 81%
Energy Star	yes	
Solar Reflective Index (SRI) ASTM E1980	98.54	
LEED 2.2 - Heat Island Effect SS Credit 7.2	1 Credit	



**INTELLIGENT**  
ROOFING SOLUTIONS

# 7.1 FiberTite® Membranes



## 60 mil FiberTite-SM

### Product Data

Seaman Corporation's 60 mil FiberTite-SM features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

60 mil FiberTite-SM is a 52-oz sq. yd./nominal 60-mil (1.5 mm) thick membrane. 60 mil FiberTite-SM exceeds all the minimum physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing and is manufactured by request.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

60 mil FiberTite-SM is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified (SM) economical version of Seaman Corporation's original KEE compound to control membrane costs while offering additional thickness and weather ability. 60 mil FiberTite-SM exhibits excellent tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

60 mil FiberTite-SM membrane is manufactured in conventional 74-in wide by 80-ft roll goods. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	60 mil Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.52 (0.060 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	0.56 (0.023)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 178°/150 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°F)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.5 (800)
Static Puncture Resistance ASTM D 5632 (30 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 25



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fiberlite.com

FiberTite® is a registered trademark of Seaman Corporation.

These specifications are current as of the date of printing. Revisions or additions may be issued periodically. For a listing, presentation, and download of the most recent data, visit:

[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 340, 420, 575.



CFFA CANADIAN FABRIC & FILM ASSOCIATION, INC.

DC196



## 60 mil FiberTite-SM

### Product Data

#### APPLICATION

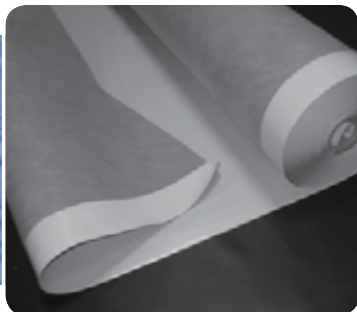
60 mil FiberTite-SM Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 60 mil FiberTite-SM Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e low VOC solvent borne bonding adhesive or FTR 490 water borne bonding adhesive to pre-approved substrates. 60 mil FiberTite-SM can also be installed in typical ballast configurations using conventional stone or paver ballast.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02		Minimum Requirements	60 mil Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Fungi Resistance <i>Practice G 21, 28 days</i>		Sustained Growth Discoloration	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>		1,500	2,000+
Additional Physical Properties			
Tensile Strength (psi) <i>ASTM D882</i>		8500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>		450	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>		350	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>		1.3	
Shore A Hardness <i>ASTM D2240</i>		87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>		pass	
Oil Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>		none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>		none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>		pass	
Energy Attributes (Color DC195 Off-White)			
Solar Reflectance <i>ASTM E903 ASTM E1918</i>		79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>		Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408 ASTM C1371</i>		95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>		Un-Cleaned 74%	Cleaned 81%
Energy Star		yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>		98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>		1 Credit	

# 7.1 FiberTite® Membranes



## 60 mil FiberTite-SM-FB

### Product Data

Seaman Corporation's 60 mil FiberTite-SM-FB "fleece back" features an 18 x 19 / 840 x 1,000 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating with a polyester felt heat bonded to the backside.

#### DESCRIPTION

60 mil FiberTite-SM-FB "fleece back" is a 52-oz sq. yd/nominal 60-mil (1.5 mm) thick membrane. 60 mil FiberTite-SM-FB surpasses all the physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing and is manufactured by request.

The 60 mil FiberTite-SM-FB membrane incorporates a 4-oz per sq. yd non-woven polyester felt, heat bonded to the back side of the membrane with a 3-in selvedge edge for field welding. 60 mil FiberTite-SM-FB fleece back is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

60 mil FiberTite-SM-FB is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified (SM) economical version of Seaman Corporation's original KEE compound to control membrane costs while offering additional thickness and weather ability. 60 mil FiberTite-SM-FB exhibits excellent tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

These specifications are current as of the date of printing. Revisions or additions may be issued periodically. For a listing, presentation, and download of the most recent data, visit:

[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	60 mil-FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.52 (0.060 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	0.56 (0.023)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1557 (350)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	445 (100)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.63
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 170°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°F)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.5 (800)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 25



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 3484, 4890, 5775.



CFFA CHEMICAL FABRICS & FILM ASSOCIATION, INC.

DC196



## 60 mil FiberTite-SM-FB

### Product Data

#### APPLICATION

60 mil FiberTite-SM-FB Roofing Systems are installed by adhering the “fleece back” membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates.

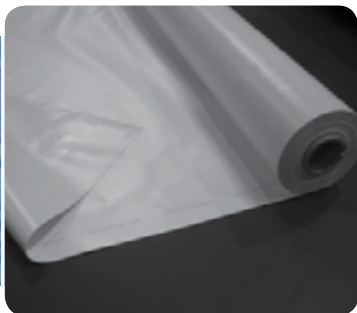
For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation’s Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	60 mil-FB Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungal Resistance <i>Practice G 21, 28 days</i>	Sustained Growth no growth none	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>	1,500	2,000+
Additional Physical Properties		
Tensile Strength (psi) <i>ASTM D682</i>	8500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>	450	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>	350	
Water Vapor Transmission <i>ASTM E96 proc. A (g/m/m2/24hrs)</i>	1.3	
Shore A Hardness <i>ASTM D2240</i>	87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>	pass	
Oil Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>	none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>	pass	
Energy Attributes (Color DC196 Off-White)		
Solar Reflectance <i>ASTM E903 ASTM E1918</i>	79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>	Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408 ASTM C1371</i>	95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>	Un-Cleaned 74%	Cleaned 81%
Energy Star	yes	
Solar Reflective Index (SRI) <i>ASTM E1890</i>	98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>	1 Credit	



# 7.1 FiberTite® Membranes



## 50 mil FiberTite-XT

### Product Data

Seaman Corporation's 50 mil FiberTite-XT membrane features an 18 x 18 / 1,100 x 1,300 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

50 mil FiberTite-XT is a 42-oz sq. yd./nominal 50-mil (1.27 mm) thick membrane and is an Xtra-Tough version of the FiberTite family of membranes. 50 mil FiberTite-XT not only exceeds all requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing, but exceeds the physical properties and performance characteristics of 90-mil competitive products.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

50 mil FiberTite-XT is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 50 mil FiberTite-XT exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

50 mil FiberTite-XT membrane is manufactured in conventional 74-in and 100-in wide by 100-ft roll goods. 50 mil FiberTite-XT is also available in customized prefabricated roll widths and lengths that incorporate integrated fastening tabs, sealing tabs and also "no-tab" rolls of membrane up to 20-ft wide by 100-ft in length. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	50 mil Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.27 (0.050 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.38 (0.015)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1779 (400)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	556 (125)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	.78
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 170°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.9 (850)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	30



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fiberlite.com

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[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 348L, 4390, 5779.



CFFA CHEMICAL FABRICS & FILM ASSOCIATION, INC.



# 7.1 FiberTite® Membranes

## 50 mil FiberTite-XT

### Product Data

#### APPLICATION

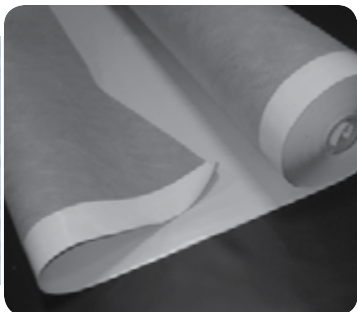
50 mil FiberTite-XT Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 50 mil FiberTite-XT Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e bonding adhesive to pre-approved substrates. 50 mil FiberTite-XT can also be installed in typical ballast configurations using conventional stone or paver ballast.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	50 mil Typical
Accelerated Weathering Practice G 155 / xenon	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering Practice G 154 / UVA	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungi Resistance Practice G 21, 28 days	no growth none	no growth none
Sustained Growth Discoloration		
Abrasion Test, cycles D 3389 H-18 wheel / 1,000 g load	1,500	2,000+
<b>Additional Physical Properties</b>		
Tensile Strength (psi) ASTM D882		> 9500
Breaking Strength (lbs) ASTM D751, Grab Method		600
Puncture Resistance (lbs) ASTM D751, Bursting Strength		700
Water Vapor Transmission ASTM E96 proc. A (gm/m <sup>2</sup> /24hrs)		1.3
Shore A Hardness ASTM D2240		87
Flame Resistance MIL-C-20696C / Type II Class 2		pass
Oil Resistance, MIL-C-20696C No swelling, cracking or leaking		none
Hydrocarbon Resistance, MIL-C-20696C No swelling, cracking or leaking		none
High Temperature Dead Load ASTM D751 (50 lbs, 160°F, 4 hrs)		pass
<b>Energy Attributes (Color DC196 Off-White)</b>		
Solar Reflectance ASTM E903 ASTM E1918		79% 83%
Solar Reflectance (3 yr aged) ASTM C1549	Un-Cleaned 66%	Cleaned 78%
Solar Emittance ASTM E408 ASTM C1371		95% 85%
Solar Emittance (3 yr aged) ASTM C1371	Un-Cleaned 74%	Cleaned 81%
Energy Star		yes
Solar Reflective Index (SRI) ASTM E1980		98.54
LEED 2.2 - Heat Island Effect SS Credit 7.2		1 Credit





## 50 mil FiberTite-XT-FB

## Product Data

Seaman Corporation's 50 mil FiberTite-XT-FB "fleece back" membrane features an 18 x 18 / 1,100 x 1,300 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

## DESCRIPTION

50 mil FiberTite-XT-FB "fleece back" is a 42-oz sq. yd/nominal 50-mil (1.27 mm) thick membrane and is an Xtra-Tough version of the FiberTite family of membranes. 50 mil FiberTite-XT-FB not only goes well beyond the requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing, but surpasses the physical properties and performance characteristics of 90-mil competitive products.

The 50 mil FiberTite-XT-FB membrane incorporates a 4-oz per sq. yd non-woven polyester felt, heat bonded to the back side of the membrane with a 3-in selvage edge for field welding. 50 mil FiberTite-XT-FB fleece back is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

50 mil FiberTite-XT-FB is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 50 mil FiberTite-XT-FB exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

## PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	50 mil FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.27 (0.050 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.38 (0.015)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1779 (400)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	556 (125)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.78
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 178°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°f)	-30	-40
Change in Weight after Exposure in Water D 471 158°f, 168 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	5.9 (850)
Static Puncture Resistance ASTM D 5602 (89 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	30



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fibertite.com

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 340L, 4890, 9793.



CFFA  
CHEMICAL FABRICS & FILM  
ASSOCIATION, INC.

DC196



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[www.fibertite.com/document-library/product-data-sheets](http://www.fibertite.com/document-library/product-data-sheets)

## 50 mil FiberTite-XT-FB

### Product Data

#### APPLICATION

50 mil FiberTite-XT-FB Roofing Systems are installed by adhering the "fleece back" membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

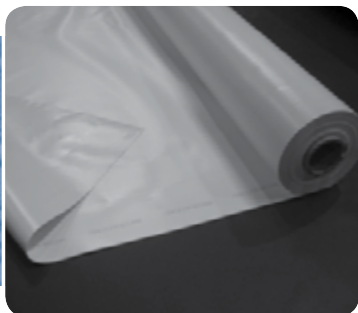
#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02	Minimum Requirements	50 mil-FB Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungi Resistance <i>Practice G 21, 28 days</i>	Sustained Growth Discoloration	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>	1,500	2,000+
Additional Physical Properties		
Tensile Strength (psi) <i>ASTM D882</i>	> 9500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>	600	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>	700	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>	1.3	
Shore A Hardness <i>ASTM D2240</i>	87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>	pass	
Oil Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>	none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>	pass	
Energy Attributes (Color D1196 Off-White)		
Solar Reflectance <i>ASTM E903 ASTM E1918</i>	79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>	Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408 ASTM C1371</i>	95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>	Un-Cleaned 74%	Cleaned 81%
Energy Star	yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>	98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>	1 Credit	



**INTELLIGENT**  
ROOFING SOLUTIONS

# 7.1 FiberTite® Membranes



## 60 mil FiberTite-XT

### Product Data

Seaman Corporation's 8155 FiberTite-XT membrane features an 18 x 18 / 1,100 x 1,300 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylen Ester (KEE) compound as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

8155 FiberTite-XT is a 55-oz sq. yd./nominal 60-mil (1.5 mm) thick membrane and is an Xtra-Tough and Xtra-Thick version of the FiberTite family of membranes. 8155 FiberTite-XT far exceeds all requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing and has unmatched performance vs. 100 mil competitive products. 8155 FiberTite-XT is a specialty membrane manufactured upon request.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

8155 FiberTite-XT is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 8155 FiberTite-XT exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

8155 FiberTite-XT membrane is manufactured in conventional and 74-in wide by 80-ft roll goods. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	8155 Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.52 (0.060 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.38 (> 0.015)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	1779 (400)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	556 (125)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	.78
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 178°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 ("f)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	6.2 (900)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 30



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 348L, 489D, 979S.



ICC



CRRC



CFFA



CHEMICAL INDUSTRY ASSOCIATION, INC.



ESR-1456



UL



SPRI

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[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

## 60 mil FiberTite-XT

### Product Data

#### APPLICATION

8155 FiberTite-XT Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 8155 FiberTite-XT Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e bonding adhesive to pre-approved substrates. 8155 FiberTite-XT can also be installed in typical ballast configurations using conventional stone or paver ballast.

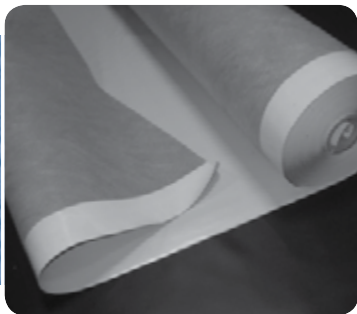
For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02		Minimum Requirements	8155 Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Fungi Resistance <i>Practice G 21, 28 days</i>		Sustained Growth Discoloration	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>		1,500	2,000+
Additional Physical Properties			
Tensile Strength (psi) <i>ASTM D882</i>		> 9500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>		600	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>		700	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>		1.3	
Shore A Hardness <i>ASTM D2240</i>		87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>		pass	
Oil Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>		none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>		none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>		pass	
Energy Attributes (Color DC196 Off-White)			
Solar Reflectance <i>ASTM E903</i> <i>ASTM E1918</i>		79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>		Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408</i> <i>ASTM C1371</i>		95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>		Un-Cleaned 74%	Cleaned 81%
Energy Star		yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>		98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>		1 Credit	



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## 60 mil FiberTite-XT-FB

### Product Data

Seaman Corporation's 8155 FiberTite-XT-FB "fleece back" membrane features an 18 x 18 / 1,100 x 1,300 denier weft reinforced polyester knit fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) compound as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

8155 FiberTite-XT-FB "fleece back" is a 55-oz sq. yd./nominal 60-mil (1.5 mm) thick membrane and is an Xtra-Tough and Xtra-Thick version of the FiberTite family of membranes. 8155 FiberTite-XT-FB far exceeds all requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing and has unmatched performance vs. 100 mil competitive products. 8155 FiberTite-XT-FB is a specialty membrane manufactured upon request.

The 8155 FiberTite-XT-FB membrane incorporates a 4-oz per sq. yd non-woven polyester felt, heat bonded to the back side of the membrane with a 3-in selvage edge for field welding. 8155 FiberTite-XT-FB fleece back is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

8155 FiberTite-XT-FB is coated face and back with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. Additionally, 8155 FiberTite-XT-FB exhibits superior tear, puncture, fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

These specifications are current as of the date of printing.

Revisions or additions may be issued periodically. For a listing, presentation, and download of the most recent data, visit:

[www.fibertite.com/document-library/product-data-sheets](http://www.fibertite.com/document-library/product-data-sheets)

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	8155-FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.52 (0.060 nom.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.38 (> 0.015)
Breaking Strength, N (lbf) ASTM D 751 Proc. B - strip	1175 (265)	1779 (400)
Elongation at Break, % ASTM D 751 - strip	15	18
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	556 (125)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	.78
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	no peel
Retention of Properties after Heat Aging ASTM D 3045 - 176°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 ("f)	-30	-40
Change in Weight after Exposure in Water D 471 158°f, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	> Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	6.2 (900)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 30



For more information on FiberTite Systems and accessories please call: Seaman Corporation (800) 927-8578 International (330) 262-1111 [www.fibertite.com](http://www.fibertite.com)

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and U.S. roofing materials and systems directory 344K, 4890, 9776.



ICC196



CHEMICAL LABELS & FILM ASSOCIATION, INC.



ESR-1456



## 60 mil FiberTite-XT-FB

### Product Data

#### APPLICATION

8155 FiberTite-XT-FB Roofing Systems are installed by adhering the "fleece back" membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates..

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

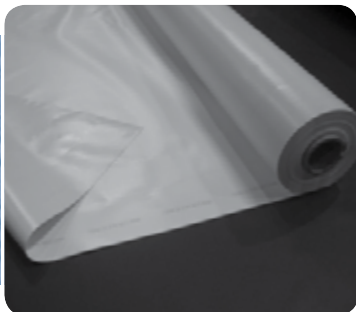
ASTM D6754-02	Minimum Requirements	8155-FB Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>	5000hr	>10000hr
cracking (7x magnification)	none	none
crazing (7x magnification)	none	none
Fungi Resistance <i>Practice G 21, 28 days</i>	no growth none	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>	1,500	2,000+
Additional Physical Properties		
Tensile Strength (psi) <i>ASTM D682</i>	> 9500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>	600	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>	700	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>	1.3	
Shore A Hardness <i>ASTM D2240</i>	87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>	pass	
Oil Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>	none	
High Temperature Dead Load <i>ASTM D751 (50 lbs, 160°F, 4 hrs)</i>	pass	
Energy Attributes (Color DC196 Off-White)		
Solar Reflectance <i>ASTM E903</i> <i>ASTM E1918</i>	79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>	Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408</i> <i>ASTM C1371</i>	95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>	Un-Cleaned 74%	Cleaned 81%
Energy Star	yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>	98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>	1 Credit	



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# 7.1 FiberTite® Membranes



## 60 mil FiberTite-XTreme

### Product Data

Seaman Corporation's 60 mil FiberTite-XTreme features a 46 x 44 / 1,000 x 1,000 denier woven polyester fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

60 mil FiberTite-XTreme is an 57-oz sq. yd/minimum 60-mil (1.5 mm) thick membrane. 60 mil FiberTite-XTreme is the most intense thermoplastic membrane available. 60 mil FiberTite-XTreme has no equal and surpasses the minimum physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

60 mil FiberTite-XTreme is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified version of Seaman Corporation's original KEE compound. Additionally, 60 mil FiberTite-XTreme exhibits extreme puncture and tear resistance for the most abusive roof areas as well as the historical fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

60 mil FiberTite-XTreme membrane is manufactured in conventional 74-in by 80-ft roll goods. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	60 mil Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.53 (0.060 min.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.76 (0.030)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	3078 (692)
Elongation at Break, % ASTM D 751 - strip	15	30
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	667 (150)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.5
Fabric Adhesion, N/m (lbf/in) ASTM D 751	225 (13)	260 (15)
Retention of Properties after Heat Aging ASTM D 3045 - 178°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°f)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	90% of Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	6.9 (1000)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 50



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fiberlite.com

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 3445, 4890, 5179.



CHEMICAL RESISTANCE & FLAME ASSOCIATION, INC.

DC196



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[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

## 60 mil FiberTite-XTreme

### Product Data

#### APPLICATION

60 mil FiberTite-XTreme Roofing Systems carry extensive FM Global and Underwriters Laboratories approvals. 60 mil FiberTite-XTreme Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or adhering the membrane in FTR 190e bonding adhesive or FTR 490 bonding adhesive to pre-approved substrates. 60 mil FiberTite-XTreme can also be installed in typical ballast configurations using conventional stone or paver ballast.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

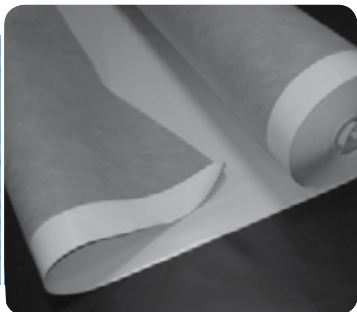
#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02		Minimum Requirements	60 mil Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Fungi Resistance <i>Practice G 21, 28 days</i>		Sustained Growth Discoloration	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>		1,500	2,000+
Additional Physical Properties			
Tensile Strength (psi) <i>ASTM D882</i>		> 9500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>		1096	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>		> 800	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>		1.3	
Shore A Hardness <i>ASTM D2240</i>		87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>		pass	
Oil Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>		none	
Hydrocarbon Resistance, MIL-C-20696C <i>No swelling, cracking or leaking</i>		none	
Energy Attributes (Color D195 Off-White)			
Solar Reflectance <i>ASTM E903</i> <i>ASTM E1918</i>		79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>		Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408</i> <i>ASTM C1371</i>		95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>		Un-Cleaned 74%	Cleaned 81%
Energy Star		yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>		98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>		1 Credit	



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## 60 mil FiberTite-XTreme FB

### Product Data

Seaman Corporation's 60 mil FiberTite-XTreme FB "fleece back" features a 46 x 44 / 1,000 x 1,000 denier woven polyester fabric, coated with a proprietary compound, utilizing DuPont's™ Elvaloy® Ketone Ethylene Ester (KEE) as the principle polymer in the hybrid vinyl alloy coating.

#### DESCRIPTION

60 mil FiberTite-XTreme FB "fleece back" is an 57-oz sq. yd/ minimum 60-mil (1.5 mm) thick membrane. 60 mil FiberTite-XTreme FB is the most intense thermoplastic membrane available. 60 mil FiberTite-XTreme FB has no equal and surpasses the minimum physical property requirements enumerated in ASTM D6754-02 Standard Specification for Ketone Ethylene Ester (KEE) Based Sheet Roofing.

The 60 mil FiberTite-XTreme FB membrane incorporates a 4-oz per sq. yd non-woven polyester felt, heat bonded to the back side of the membrane with a 3-in selvage edge for field welding. 60-mil FiberTite-XTreme FB is manufactured in conventional 72-in by 80-ft roll goods.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

All FiberTite Roofing Membranes are constructed using high tenacity/heavy weight yarns to create a base fabric reinforcement to impart superior puncture, tensile and tear resistance properties. The base polyester fabrics are primed with a unique and proprietary adhesive coat that lays the foundation to physically bond the KEE coatings to the "fiber" to maximize seam strength and overall membrane performance.

60 mil FiberTite-XTreme FB is coated on the face with Seaman Corporation's original "KEE" formulation to provide superior hot air welding characteristics, extreme UV resistance, broad chemical resistance and long-term flexibility and reparability for the installed roofing membrane system. The back side of the membrane is coated with a slightly modified version of Seaman Corporation's original KEE compound. Additionally, 60 mil FiberTite-XTreme FB exhibits extreme puncture and tear resistance for the most abusive roof areas as well as the historical fungus, algae and flame resistance that make FiberTite Roofing Systems some of the most sustainable roofing systems available.

60 mil FiberTite-XTreme FB membrane is manufactured in conventional 72-in by 80-ft roll goods. Field seaming of the membrane is accomplished by fusing the thermoplastic membrane with conventional hot air welding equipment.

#### PHYSICAL PROPERTIES

ASTM D6754-02	Minimum Requirements	60 mil XTreme FB Typical
Thickness, mm (in.) ASTM D 751	0.79 (0.031)	1.53 (0.060 min.)
Thickness over Fiber, mm (in) Optical method (inches)	0.15 (0.006)	.76 (0.030)
Breaking Strength, N (lbf) ASTM D 751 proc. B - strip	1175 (265)	3078 (692)
Elongation at Break, % ASTM D 751 - strip	15	30
Tear Strength, N (lbf) ASTM D 751 Proc. B. Tongue Tear	335 (75)	667 (150)
Linear Dimensional Change ASTM D 1204 max (%)	1.3	0.5
Fabric Adhesion, N/m (lb/in) ASTM D 751	225 (13)	260 (15)
Retention of Properties after Heat Aging ASTM D 3045 - 178°/156 days		
Breaking Strength, strip, % original	90	90
Elongation at Break, strip, % original	90	90
Low Temperature Bend after Heat Aging	-30	-40
Low Temperature Bend ASTM D 2136 (°f)	-30	-40
Change in Weight after Exposure in Water D 471 158°F, 166 h, one side only, max. (%)	0.0, +6.0	0.0, +3.7
Factory Seam Strength, N (lbf) ASTM D 751 Grab Method	1780 (400)	90% of Fabric Break
Hydrostatic Resistance, Mpa (psi) ASTM D751	3.5 (500)	6.9 (1000)
Static Puncture Resistance ASTM D 5602 (99 lbf)	pass	pass
Dynamic Puncture Resistance (J) ASTM D 5635	10	> 50



INTELLIGENT  
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As to an external fire exposure only. See UL directory of products certified for Canada and U.S. roofing materials and systems directory 346L, 490P, 579S.



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.

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[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

## 60 mil FiberTite-XTreme FB

### Product Data

#### APPLICATION

60 mil FiberTite-XTreme FB Roofing Systems can be installed by mechanically fastening the membrane with FiberTite Magnum Fasteners and Stress Plates or by adhering the “fleece back” membrane in FTR-290 low VOC solvent borne adhesive, FTR-390 water borne asphalt emulsion, FTR-490 water borne elastomeric adhesive, FTR CR-20, or hot asphalt to a variety of pre-approved substrates. 60 mil FiberTite-XTreme FB can also be installed in typical ballast configurations using conventional stone or paver ballast.

For specific installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES (cont.)

ASTM D6754-02		Minimum Requirements	60 mil XTreme FB Typical
Accelerated Weathering <i>Practice G 155 / xenon</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Accelerated Weathering <i>Practice G 154 / UVA</i>		5000hr	>10000hr
cracking (7x magnification)		none	none
crazing (7x magnification)		none	none
Fungi Resistance <i>Practice G 21, 28 days</i>	Sustained Growth Discoloration	no growth none	no growth none
Abrasion Test, cycles <i>D 3389 H-18 wheel / 1,000 g load</i>		1,500	2,000+
Additional Physical Properties			
Tensile Strength (psi) <i>ASTM D882</i>		> 9500	
Breaking Strength (lbs) <i>ASTM D751, Grab Method</i>		1096	
Puncture Resistance (lbs) <i>ASTM D751, Bursting Strength</i>		> 800	
Water Vapor Transmission <i>ASTM E96 proc. A (gm/m2/24hrs)</i>		1.3	
Shore A Hardness <i>ASTM D2240</i>		87	
Flame Resistance <i>MIL-C-20696C / Type II Class 2</i>		pass	
Oil Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>		none	
Hydrocarbon Resistance, MIL-C 20696C <i>No swelling, cracking or leaking</i>		none	
Energy Attributes (Color DC196 Off-White)			
Solar Reflectance <i>ASTM E903</i> <i>ASTM E1918</i>		79% 83%	
Solar Reflectance (3 yr aged) <i>ASTM C1549</i>		Un-Cleaned 66%	Cleaned 78%
Solar Emittance <i>ASTM E408</i> <i>ASTM C1371</i>		95% 85%	
Solar Emittance (3 yr aged) <i>ASTM C1371</i>		Un-Cleaned 74%	Cleaned 81%
Energy Star		yes	
Solar Reflective Index (SRI) <i>ASTM E1980</i>		98.54	
LEED 2.2 - Heat Island Effect <i>SS Credit 7.2</i>		1 Credit	

# 7.1 FiberTite® Membranes



## Product Data

**3842 FiberTite Brite™ with Kynar®** fluoropolymer top-finish is the pioneering roofing solution engineered specifically for unique, high-profile projects that require long-lasting aesthetics and tough protection. Custom solid colors and pattern designs are available.

### DESCRIPTION

The FiberTite Brite membrane features a 5-oz per square yard – 20 x 20 / 840 x 1000 denier woven reinforced polyester fabric coated with a proprietary high performance architectural grade vinyl compound and top finished with the unique Kynar fluoropolymer coating to repel dirt and promote unmatched color fastness that is unknown in any other thermoplastic roofing membrane. In addition to the FiberTite standard warranty, FiberTite Brite also has a 10-year, limited colorfast warranty.

FiberTite Brite is 45-mil (1.14mm) thick and is manufactured in 75" x 100' (1.83m x 30.48m) conventional roll goods with a nominal three (3) inch top finish miss for field welding. FiberTite Brite is available in these colors: White, Salem Blue, Desert Tan, Brownstone Red, Patina Green and Copper (metallic) as well as custom colors. FiberTite Brite is principally engineered for adhered membrane roofing applications. Field seaming is accomplished by fusing the thermoplastic vinyl membrane with conventional hot air welding equipment. For areas requiring field welding within the Kynar top finish; the Kynar must be removed. This is easily accomplished by masking the area and removing the Kynar with methyl ethyl ketone (MEK).

### Combining Proven Technologies

FiberTite Brite is the result of combining three leading technologies – FiberTite Roofing Systems, Seaman Corporation's architectural vinyl membrane technology, and the proven performance of Kynar, a fluoropolymer coating that has been the coating of choice for standing seam metal for over 45 years, and known for its long-lasting aesthetics.

FiberTite Roofing Systems revolutionized the roofing industry in 1979 by being the toughest, longest lasting roofing membrane on the market. FiberTite has been proven to last, with membranes still performing after more than 30 years.

Seaman Corporation is vertically integrated, which allows complete control over the manufacturing process from the selection of the yarns, to the engineering, knitting and weaving of the base fabrics to the final coating process. Today, FiberTite Roofing Membranes are the result of Seaman Corporation's 60 years of applied fabric engineering and coating technology.

### PHYSICAL PROPERTIES

ASTM D4434-06 Type III	Minimum Requirements	FiberTite Brite
Thickness, inches mm (in)	1.14 (.045)	1.18 (0.0465)
ASTM D751		
Thickness Over Fiber, mm (in)	.40 (.016)	.47 (0.0185)
ASTM D751		
Breaking Strength, kN, (lbf)	35 (200)	82 (466) MD 88 (503) XMD
ASTM D751, Grab		
Elongation at Break, %	15	18 MD 30 XMD
ASTM D751, Grab		
Seam Strength, min% of Breaking Strength	75	100
ASTM D 751		
Retention of Properties after Heat Aging		
Breaking Strength, strip, % original	90	Pass
Elongation at Break, strip, % original	90	Pass
Tear Strength, N (lbf)	200 (45)	311 (70) MD 316 (71) XMD
ASTM D751		
Low Temperature Bend (Minus 40°F)	Pass	Pass
ASTM D2136		
Accelerated Weathering Test:		
ASTM G154		
Cracking (7x Magnification)	None	None
Crazing (7x Magnification)	None	None
Linear Dimensional Change, max, %	0.5	Pass
ASTM D1204		
Change in Weight After Exposure in Water, max, %	±3	1.86
ASTM D570		
Static Puncture Resistance	Pass	Pass
ASTM D5602		
Dynamic Puncture Resistance	Pass	Pass
ASTM D5635		



For additional information on FiberTite Roofing Systems and Accessories, please call: Seaman Corporation (800) 927-8578 International (330) 263-6121

Or visit our Web Site at [www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.

Kynar® is a registered trademark of Arkema, Inc.

FiberTite® Brite™ is a registered trademark of Seaman Corporation.



As to an external fire exposure only. See UL directory of products certified for Canada and UL roofing materials and systems directory 34KL, 48P0, 97P9.



**CCFA** CHEMICAL FABRICS & FILM ASSOCIATION, INC.



# 7.2 FiberTite® Base Sheets



## VaporTite

### Product Data

Seaman Corporation / FiberTite® offer a self-adhered bitumen and SBS polymeric Class I Vapor Barrier under the Trade name VaporTite.

#### DESCRIPTION

##### GENERAL

VaporTite is a self-adhered vapor barrier membrane for steel decks composed of SBS-modified bitumen adhesive on the bottom surface and a tri-laminated woven polyethylene on the top surface. A silicone release film covers the adhesive under the surface. The material is installed with a 3-in (76 mm) side lap and 6-in (152 mm) end lap.

##### APPLICATION

VaporTite membrane may be installed on a steel deck, plywood, gypsum or concrete barrier boards, or structural concrete. Except for the steel deck, all substrates must be primed with Elastocool Stick. All surfaces must be clean and dry prior to application of the primer. The minimum application temperature for VaporTite is 32°F (0°C).

##### STORAGE

VaporTite is packaged in boxes with 16 per pallet. Store boxes/rolls of product on end on a clean and flat surface elevated above the deck. Do not store in a leaning or horizontal position as deformation may occur. All materials shall be stored in a dry place, out of direct exposure to the elements. VaporTite shall be handled in such a manner as to ensure that it remains dry prior to and during installation.

##### APPROVALS

VaporTite is FM Approved for specific FiberTite assemblies and listed in RoofNav. Note: FM does not permit self-adhered membranes to be installed direct to steel decks.

#### PHYSICAL PROPERTIES

Property (as manufactured)	Values/Units	Test Method
Thickness (average)	31 mils (.8 mm)	ASTM D 5147
Peak Load @ 73°F (average)	MD: 54 lb./in (9.5 kN/m) XMD: 74 lb./in (13.0 kN/m)	ASTM D 5147
Elongation @ Peak Load, 73°F (average)	MD: 33% XMD: 25%	ASTM D 1547
Tear Strength (average)	MD: 95 lb. (423 N) XMD: 103 lb. (458 N)	ASTM D 1970
Static Puncture	90 lb. (400 N)	ASTM D 5602
Water Vapor Permeance	0.06 perm (3.4 ng/Pa/s/m²)	ASTM E 96 procedure B
Air Permeability	.00021/sec/m²	ASTM E 283 (75 pa)
Lap Adhesion	68 lb./ft (1000 N/m)	ASTM D 876
Water Absorption	0.1%	ASTM D 5147
Cold Blend	-58°F (-50°C)	ASTM D 5147

Roll Width: 45 in (1.1m)

Roll Length: 134 ft (40.8 m)

Coverage: 468 ft² (43.5 m²)

Roll Weight: 80 lb (35.8 kg)



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fiberlite.com](http://www.fiberlite.com)

FiberTite® is a registered trademark of Seaman Corporation.



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



# 7.2 FiberTite® Base Sheets



## FiberTite® SBS Base

### Product Data

FiberTite® Hybrid™ multi-ply roofing systems are the fusion of proven technologies – time-tested FiberTite fleeceback cap sheet and a FiberTite SBS Modified Bitumen base. Together, this roofing system provides ultimate protection and acts as a redundant barrier against high UV light, heavy foot-traffic, harsh chemicals and ponding water. The modified bitumen base sheet is available in a fibrous glass or non-woven polyester mat for torch or hot asphalt application. See additional data sheets for information. The FiberTite fleeceback cap sheet can be applied by hot asphalt or cold adhered.\*

#### DESCRIPTION

FiberTite Hybrid roofing systems utilize a FiberTite SBS 190 Base sheet, which is a hot asphalt grade modified bitumen base ply designed for use with FiberTite Fleeceback roofing membranes as the cap sheet. FiberTite SBS 190 Base consists of a non-woven polyester mat impregnated and coated with styrene-butadiene-styrene (SBS) modified bitumen. The top and bottom surfaces are covered with a mineral parting agent.

Lines	Packaging	Pallet
Laying line is placed 3 in. (83 mm) from the edge of the material	Rolls are placed upright on ends on pallets. The palletized material is shrink-wrapped	48 in x 42 in (1.21 m x 1.06 m)
Average Roll Weight	Number of Pallets Per Truckload	Number of Rolls Per Pallet
92lb (41.7kg)	21-22	25

#### Storage and Handling

FiberTite SBS 190 Base roll roofing products should be stored on end on a clean flat surface. Rolls should not be dropped on ends or edges and should not be stored in a leaning position. Deformation resulting from improper storage and handling will make proper installation difficult. All roofing materials should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Ensure that material remains dry prior to and during installation.

#### PHYSICAL PROPERTIES

Property (as manufactured)	Values/Units	Test Method
Thickness (average)	120 mils ± 5% (3.0mm ± 5%)	ASTM D 5147 section 5
Peak Load @ 73°F (average)	50 lb./in (8.8 kN/m)	ASTM D 5147 section 6
Elongation @ Peak Load, 73°F (average)	35%	ASTM D 5147 section 6
Tear Strength (average)	85 lb. (0.38 kN)	ASTM D 5147 section 7
Water Absorption (maximum)	2.0%	ASTM D 5147 section 9
Dimensional Stability (maximum)	0.5%	ASTM D 5147 section 10
Low Temperature Flexibility (maximum)	-10°F (-23°C)	ASTM D 5147 section 11
Compound Stability (minimum)	225°F (107°C)	ASTM D 5147 section 15

FiberTite SBS 190 Base meets all requirements of ASTM D6164, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet materials Using Polyester Reinforcements", Type I Grade S

#### COMMERCIAL PRODUCT INFORMATION

Unit	Coverage Weight Per Square	Roll Length (Minimal)
Roll	Avg: 92lb (41.7kg)	33.5 ft (10.2m)
Roll Width (Average)	Thickness	Solveg Width (Average)
3.28 ft (1.0m)	120 mils ± 5% (3.0mm ± 5%)	3.0in (76mm)
Solveg Surfacing	Top Surfacing	Back Surfacing
N/A	Mineral parting agent	Mineral parting agent



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For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fibertite.com](http://www.fibertite.com)

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Hybrid™ is a trademark of Seaman Corporation

\*Refer to Roofnav for approvals

# 7.2 FiberTite® Base Sheets



## FiberTite® SBS Torch Base

### Product Data

FiberTite® Hybrid™ multi-ply roofing systems are the fusion of proven technologies – time-tested FiberTite fleeceback cap sheet and a FiberTite SBS Modified Bitumen base. Together, this roofing system provides ultimate protection and acts as a redundant barrier against high UV light, heavy foot-traffic, harsh chemicals and ponding water. The modified bitumen base sheet is available in a fibrous glass or non-woven polyester mat for torch or hot asphalt application. See additional data sheets for information. The FiberTite fleeceback cap sheet can be applied by hot asphalt or cold adhered.\*

#### DESCRIPTION

FiberTite Hybrid roofing systems utilize a FiberTite SBS Torch Base sheet, which is a torch grade modified bitumen base ply designed for use with FiberTite Fleeceback roofing membrane cap sheets. FiberTite SBS Torch Base consists of a lightweight random fibrous glass mat impregnated and coated with styrene-butadiene-styrene (SBS) modified bitumen. The top surface is covered with a mineral parting agent and the back surface is covered with a polyolefin burn-off film.

Lines	Packaging	Pallet
Laying lines are placed 3 in (76 mm) from each edge of the material	Rolls are placed upright on ends on pallets. The palletized material is shrink-wrapped	48 in x 42 in (1.21 m x 1.06 m)
Minimum Roll Weight	Number of Pallets Per Truckload	Number of Rolls Per Pallet
75 lb (34.0 kg)	20	28

#### Storage and Handling

FiberTite SBS Torch Base roll roofing products should be stored on end on a clean flat surface. Rolls should not be dropped on ends or edges and should not be stored in a leaning position. Deformation resulting from improper storage and handling will make proper installation difficult. All roofing materials should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Ensure that material remains dry prior to and during installation.

#### PHYSICAL PROPERTIES

Property (as manufactured)	Values/Units	Test Method
Thickness (average)	100 mils ± 5% (2.5 mm ± 5%)	ASTM D 5147 section 5
Peak Load @ 73°F (average)	30 lb./in (5.3 kN/m)	ASTM D 5147 section 6
Elongation @ Peak Load, 73°F (average)	3%	ASTM D 5147 section 6
Tear Strength (average)	40 lb. (0.18 kN)	ASTM D 5147 section 7
Water Absorption (maximum)	1%	ASTM D 5147 section 9
Dimensional Stability (maximum)	0.1%	ASTM D 5147 section 10
Low Temperature Flexibility (maximum)	-13°F (-25°C)	ASTM D 5147 section 11
Compound Stability (minimum)	250°F (121°C)	ASTM D 5147 section 15
Coating Thickness Back Surface (minimum)	40 mils (1 mm)	ASTM D 5147 section 16

FiberTite SBS TG Base meets all requirements of ASTM D6163, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet materials Using Glass Fiber Reinforcements", Type I Grade S

#### COMMERCIAL PRODUCT INFORMATION

Unit	Coverage Weight Per Square	Roll Length (Minimal)
Roll	Avg: 75 lb (34.0 kg)	33.3 ft (10.14 m)
Roll Width (Average)	Thickness	Solveg Width (Average)
3.28 ft (1.0 m)	100 mils ± 5% (2.5 mm ± 5%)	3.0 in (76 mm)
Solveg Surfacing	Top Surfacing	Back Surfacing
N/A	Mineral parting agent	Polyolefin film



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For more information on FiberTite Systems and accessories please call:  
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International (330) 262-1111  
[www.fibertite.com](http://www.fibertite.com)

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\*Refer to Roofnav for approvals



# 7.2 FiberTite® Base Sheets



## FiberTite® SBS 190 Base

### Product Data

FiberTite® Hybrid™ multi-ply roofing systems are the fusion of proven technologies – time-tested FiberTite fleeceback cap sheet and a FiberTite SBS Modified Bitumen base. Together, this roofing system provides ultimate protection and acts as a redundant barrier against high UV light, heavy foot-traffic, harsh chemicals and ponding water. The modified bitumen base sheet is available in a fibrous glass or non-woven polyester mat for torch or hot asphalt application. See additional data sheets for information. The FiberTite fleeceback cap sheet can be applied by hot asphalt or cold adhered.\*

#### DESCRIPTION

FiberTite Hybrid roofing systems utilize a FiberTite SBS 190 Base sheet, which is a hot asphalt grade modified bitumen base ply designed for use with FiberTite Fleeceback roofing membranes as the cap sheet. FiberTite SBS 190 Base consists of a non-woven polyester mat impregnated and coated with styrene-butadiene-styrene (SBS) modified bitumen. The top and bottom surfaces are covered with a mineral parting agent.

Lines	Packaging	Pallet
Laying line is placed 3 in. (83 mm) from the edge of the material	Rolls are placed upright on ends on pallets. The palletized material is shrink-wrapped	48 in x 42 in (1.21 m x 1.06 m)
Average Roll Weight	Number of Pallets Per Truckload	Number of Rolls Per Pallet
92lb (41.7kg)	21-22	25

#### Storage and Handling

FiberTite SBS 190 Base roll roofing products should be stored on end on a clean flat surface. Rolls should not be dropped on ends or edges and should not be stored in a leaning position. Deformation resulting from improper storage and handling will make proper installation difficult. All roofing materials should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Ensure that material remains dry prior to and during installation.

#### PHYSICAL PROPERTIES

Property (as manufactured)	Values/Units	Test Method
Thickness (average)	120 mils ± 5% (3.0mm ± 5%)	ASTM D 5147 section 5
Peak Load @ 73°F (average)	50 lb./in (8.8 kN/m)	ASTM D 5147 section 6
Elongation @ Peak Load, 73°F (average)	35%	ASTM D 5147 section 6
Tear Strength (average)	85 lb <sub>f</sub> (0.38 kN)	ASTM D 5147 section 7
Water Absorption (maximum)	2.0%	ASTM D 5147 section 9
Dimensional Stability (maximum)	0.5%	ASTM D 5147 section 10
Low Temperature Flexibility (maximum)	-10°F (-23°C)	ASTM D 5147 section 11
Compound Stability (minimum)	225°F (107°C)	ASTM D 5147 section 15

FiberTite SBS 190 Base meets all requirements of ASTM D6164, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet materials Using Polyester Reinforcements", Type I Grade S

#### COMMERCIAL PRODUCT INFORMATION

Unit	Coverage Weight Per Square	Roll Length (Minimal)
Roll	Avg: 92lb (41.7kg)	33.5 ft (10.2m)
Roll Width (Average)	Thickness	Selwage Width (Average)
3.28 ft (1.0m)	120 mils ± 5% (3.0mm ± 5%)	3.0in (76mm)
Selwage Surfacing	Top Surfacing	Back Surfacing
N/A	Mineral parting agent	Mineral parting agent



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fibertite.com

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\*Refer to Roofnav for approvals

# 7.2 FiberTite® Base Sheets



## FiberTite® SBS 190 Torch Base

### Product Data

FiberTite® Hybrid™ multi-ply roofing systems are the fusion of proven technologies – time-tested FiberTite fleeceback cap sheet and a FiberTite SBS Modified Bitumen base. Together, this roofing system provides ultimate protection and acts as a redundant barrier against high UV light, heavy foot-traffic, harsh chemicals and ponding water. The modified bitumen base sheet is available in a fibrous glass or non-woven polyester mat for torch or hot asphalt application. See additional data sheets for information. The FiberTite fleeceback cap sheet can be applied by hot asphalt or cold adhered.\*

#### DESCRIPTION

FiberTite Hybrid roofing systems utilize a FiberTite SBS 190 Torch Base sheet, which is a torch grade modified bitumen base ply designed for use with FiberTite Fleeceback roofing membranes as the cap sheet. FiberTite SBS 190 Torch Base consists of a non-woven polyester mat impregnated and coated with styrene-butadiene-styrene (SBS) modified bitumen. The top surface is covered with a mineral parting agent and the back surface is covered with a polyolefin burn-off film.

Lines	Packaging	Pallet
Laying line is placed 3 in. (76 mm) from the edge of the material	Rolls are placed upright on ends on pallets. The palletized material is shrink-wrapped	48 in x 42 in (1.21 m x 1.06 m)
Average Roll Weight	Number of Pallets Per Truckload	Number of Rolls Per Pallet
91lb (41.3 kg)	22	25

#### Storage and Handling

FiberTite SBS 190 Torch Base roll roofing products should be stored on end on a clean flat surface. Rolls should not be dropped on ends or edges and should not be stored in a leaning position. Deformation resulting from improper storage and handling will make proper installation difficult. All roofing materials should be stored in a dry place, out of direct exposure to the elements, and should not be double stacked. Ensure that material remains dry prior to and during installation.

#### PHYSICAL PROPERTIES

Property (as manufactured)	Values/Units	Test Method
Thickness (average)	150 mils ± 5% (3.8 mm ± 5%)	ASTM D 5147 section 5
Peak Load @ 73°F (average)	50 lb./in (8.8 kN/m)	ASTM D 5147 section 6
Elongation @ Peak Load, 73°F (average)	35%	ASTM D 5147 section 6
Tear Strength (average)	85 lb. (0.38 kN)	ASTM D 5147 section 7
Water Absorption (maximum)	2.0%	ASTM D 5147 section 9
Dimensional Stability (maximum)	0.5%	ASTM D 5147 section 10
Low Temperature Flexibility (maximum)	-10°F (-23°C)	ASTM D 5147 section 11
Compound Stability (minimum)	225°F (107°C)	ASTM D 5147 section 15
Coating Thickness Back Surface (minimum)	40 mils (1 mm)	ASTM D 5147 section 16

FiberTite SBS 190 TG Base meets all requirements of ASTM D6164, "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet materials Using Polyester Reinforcements", Type I Grade S

#### COMMERCIAL PRODUCT INFORMATION

Unit	Coverage Weight Per Square	Roll Length (Minimum)
Roll	Avg: 91lb (41.3kg)	33.5 ft (10.2m)
Roll Width (Average)	Thickness	Selvage Width (Average)
3.28 ft (1.0m)	150 mils ± 5% (3.8 mm ± 5%)	3.0 in (76 mm)
Selvage Surfacing	Top Surfacing	Back Surfacing
N/A	Mineral parting agent	Polyolefin film



#### INTELLIGENT ROOFING SOLUTIONS



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.

For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
www.fibertite.com

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\*Refer to Roofnav for approvals



# 7.3 FiberTite® Fasteners/ Stress Plates



## FTR Induction Weld Stress Plates

### Product Data

FiberTite Induction Weld (IW) plates are designed to secure roof insulation and roofing membranes in FiberTite Induction Welded Roofing System. Plates are 3 inches round, specially coated Galvalume Steel, installed with FTR Magnum Fasteners on steel, wood or structural concrete decks.

All FTR Induction Weld plates have a recessed center and raised flat bonding surface, and come in easy to handle weather-resistant packaging.

#### FEATURE & BENEFITS

FiberTite IW Roofing Systems are Factory Mutual Approved. FTR IW – RhinoBond® and IW isoweld® Plates meet FM 4470 criteria for corrosion resistance and feature a wide welding surface to promote a strong bond to FiberTite Roofing Membranes.

FTR-IW RhinoBond and IW isoweld Plates are packaged in weather-resistant pails for easy handling.

#### Additional Benefits

##### Induction Welding

- Fastening independent of seam
- One membrane width only
- One fastener type only
- No membrane penetration
- Reduced-width membrane overlap
- Fewer fastening points

#### APPLICATION

FTR-IW Systems are proprietary roof attachment systems. The system requires the use of FTR-IW RhinoBond or FTR-IW isoweld Plates and FTR Magnum Fasteners, as well as specialized welding tools specific to the individual plates. Predrilling is required on structural concrete roof decks.

FiberTite IW Roofing Systems are compatible with FTR-Value polyisocyanurate roof insulation and gypsum based coverboards. FiberTite IW Roofing Systems are not compatible with EPS, XPS or foil faced insulation materials.

#### PACKAGING

FTR-IW RhinoBond Plates are packaged in plastic weather-resistant pails of 500 pieces each.

FTR-IW isoweld Plates are packaged in plastic weather-resistant pails of 500 pieces each.

#### PHYSICAL PROPERTIES

SIZE	MATERIAL	COATING
3" Round	Coated Galvalume	Proprietary Polymeric



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isoweld® is a trademark of SFS intec.

# 7.3 FiberTite® Fasteners/Stress Plates



## FiberTite Magnum Fasteners and Magnum-Plus Stress Plates

### Product Data

FiberTite Magnum Fasteners and Magnum-Plus Stress Plates are designed and engineered to provide enhanced load distribution and superior wind resistance for all mechanically attached FiberTite Roofing Systems.

#### DESCRIPTION

FiberTite Magnum Fasteners provide superior withdrawal and back-out resistance. FTR Magnum Fasteners incorporate a reduced diameter drill point for exceptional drilling, buttress threads for increased back-out torque and a high performance epoxy E-coat for superior corrosion resistance.

FiberTite Magnum-Plus Stress Plates are manufactured from 0.47 in. (1.19 mm thick) AZ50 Galvalume coated steel, are rectangular in shape; with three-quarter inch (1.9 cm) radial corners, a 0.25 in (0.635 cm) hole in the center of the plate, a raised reinforcement area to resist deflection and twelve (12) barbs to enhance wind resistance.

All FiberTite Magnum Series Fasteners and Stress Plates exceed FM Global (FMG 4470) requirements for corrosion resistance and are FMG Approved for Class 1 Mechanically Attached FiberTite Roofing Systems.

#### APPLICATION

FiberTite Magnum Fasteners and Magnum-Plus Stress Plates are engineered for all mechanically fastened FiberTite Roofing Systems; including 100-in wide membranes.

For fastener and stress plate placement, installation instructions, and frequency and their correlation to specific approvals for wind resistance, consult the most current versions Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES

Material	Case hardened carbon steel
Drive	#3 Phillips
Thread Diameter	0.263 in (0.67 cm)
Shank Diameter	0.204 in (0.52 cm)
Head Diameter	0.438 in (1.10 cm)
Point Type	Drill
Coating	E-Coat
Withdrawal Load*	725 lb+ (329 kg+)

\*in 22 Ga. (0.91 thick) Grade 80 Steel



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 282-1111  
www.fibertite.com

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Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.

# 7.3 FiberTite® Fasteners/Stress Plates



## FiberTite Insulation Fasteners & Stress Plates

### Product Data

FiberTite Insulation Fasteners and Stress Plates are designed and engineered to provide enhanced load distribution for the attachment of insulation and cover-board.

#### DESCRIPTION

FiberTite Insulation Fasteners are engineered to secure approved insulation and cover-boards to steel, wood and concrete roof decks. FiberTite Insulation Fasteners have a heavy shank and deep thread diameter to provide high withdrawal resistance. The fasteners also include a deep #3 recess for ultimate bit engagement, a reduced drill point for quick cutting of steel and wood decks and a high quality E-coating for protection against corrosion.

FiberTite Insulation Stress Plates are available in either steel or plastic. FiberTite 3-in round steel insulation plates are finished with AZ50 galvalume and have a flat/flush profile for use on rigid board surfaces. FiberTite 3-in round "Sand-Dollar" insulation stress plates are manufactured from high impact resistant polypropylene, have a flat bottom profile and are designed to lock the FiberTite Insulation Fastener head into the plate.

All FiberTite Insulation Fasteners and Stress Plates exceed FM Global (FMG 4470) requirements for corrosion resistance and are FMG Approved for insulation and cover-board attachment in Class 1 Mechanically Fastened or Adhered FiberTite Roofing Systems.

#### APPLICATION

FiberTite Insulation Fasteners and Stress Plates are designed and used for the preliminary attachment of rigid insulation and cover-boards in mechanically fastened FiberTite Roofing Systems and for principle insulation and cover-board attachment in FiberTite Adhered Roofing Systems.

For fastener and stress plate placement, installation instructions, frequency and their correlation to specific approvals for wind resistance, consult the most current version of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES

Material	Case hardened Carbon Steel
Drive	#3 Phillips
Thread Diameter	0.238 in (0.61 cm)
Shank Diameter	0.180 in (0.46 cm)
Head Diameter	0.448 in (1.1 cm)
Point Type	Drill
Coating	E-coat
Withdrawal Load	540 lb+ (245 kg+) 22 ga. steel



For more information on FiberTite Systems and accessories please call:  
Seaman Corporation (800) 927-8578  
International (330) 262-1111  
[www.fibertite.com](http://www.fibertite.com)

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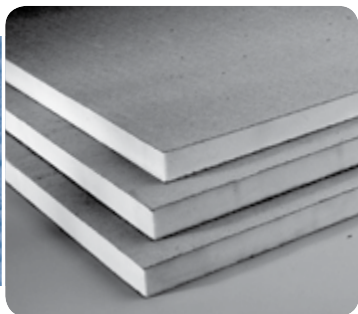
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CHEMICAL FABRICS & FILM ASSOCIATION, INC.



# 7.4 FiberTite® Insulation Materials



## FTR-Value

### Product Data

FTR-Value polyisocyanurate roof insulation consists of polyiso foam core with superior fire performance characteristics and the ability to retain its high R-values over time.

#### DESCRIPTION

FTR-Value polyisocyanurate roof insulation is manufactured to meet and/or exceed Federal Specifications: ASTM C1289-06 Type II, Class I, Grade 2.

FTR-VALUE is offered in a variety of thicknesses for single, multi-layer and tapered installations. The closed-cell polyiso foam core is integrally laminated to fiber reinforced or fiberglass facers. The composition of FTR-VALUE provides an excellent substrate for mechanically attached and adhered FiberTite Roofing Systems.

FTR-VALUE is available in 4' x 4' or 4' x 8' boards and has a long-term thermal resistance (LTTR) of approximately 6.0 per inch.

Underwriters Laboratories and FM-Global have classified/ approved FTR-VALUE, as a component of our FiberTite Roofing Systems(s), respectively as Class A (UL 790) and Class 1A (FM 4470). FTR-VALUE is also accepted by building code jurisdictions.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Use proper handling and storage methods for FTR-Value insulation, keeping it dry at all times. Tightly butt all roof insulation board edges and stagger adjacent joints. Install no more insulation than can be effectively covered/completed during the same day.

Except for loose laid/ballast applications, FTR-Value roof insulation must be secured to the roof deck. Approved securement methods include mechanical attachment using FTR fasteners and insulation stress plates appropriate for the deck type. Alternatively, FTR-Value roof insulation may be attached with FTR-601 adhesive, hot asphalt or other approved adhesives appropriate to the deck type. For adhered insulation attachment, insulation boards shall not exceed 4ft x 4ft.

#### PHYSICAL PROPERTIES

Dimensional Stability	ASTM D 2126	<2%
Compressive Strength	ASTM D 1621	20psi*
Water Absorption	ASTM C 209	<1% by volume
Moisture Vapor Transmission	ASTM E 96	<1 Perm
Product Density	ASTM D 1622	Nominal 2.0 pcf
Flame Spread	ASTM E 84	50 or less
Smoke Density	ASTM E 84	450 or less

\*FTR-VALUE is also available in 25 psi compressive strength (Grade 3)

#### FTR - VALUE THERMAL VALUES

Thickness	LTTR R-Value*	Flute Spanability
1.00" (25 mm)	5.70	2 5/8"
1.50" (38 mm)	8.60	4 3/8"
1.60" (41 mm)	9.10	4 3/8"
1.70" (43 mm)	9.60	4 3/8"
1.80" (46 mm)	10.30	4 3/8"
2.00" (51 mm)	11.40	4 3/8"
2.50" (64 mm)	14.40	4 3/8"
2.60" (66 mm)	15.00	4 3/8"
2.70" (69 mm)	15.60	4 3/8"
3.00" (76 mm)	17.40	4 3/8"
3.10" (79 mm)	18.00	4 3/8"
3.30" (84 mm)	19.20	4 3/8"
3.50" (89 mm)	20.50	4 3/8"
3.60" (91 mm)	21.10	4 3/8"
3.70" (94 mm)	21.70	4 3/8"
4.00" (102 mm)	23.60	4 3/8"



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\*Long Term Thermal Resistance Foam Core Values are based on ASTM C1289-06 and CAN/ULC S770 which provides for a 15-year time weighted average. All PMA members have adopted this advanced standard for R-Value measurement as of 1/1/03. Values listed are as of 12/1/2015.



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As to an external fire exposure only See UL directory of products certified for Canada and UL roofing materials and systems directory 348L, 489D, 979P.



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**SPRI**

ESR-1456

# 7.5 FiberTite® Sealants/Adhesives



## FTR 101

### Product Data

FTR 101 is a general purpose, one component, extremely elastic, moisture curing polyether sealant. It typically requires no priming to bond to many materials including FiberTite, metal, masonry, concrete, wood and fluoropolymer coatings.

#### DESCRIPTION

FTR 101 is designed for use with FiberTite membranes in conjunction with terminations, drain seals and metal flashing. It exhibits excellent resistance to weather, stress, movement, water and many environmental chemicals while maintaining adhesion, cohesion and elasticity.

Seaman Corporation supplies FiberTite FTR 101 in cases of twelve (12) standard 10 fl. oz. (.33 liter) cartridges. See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

FTR 101 is an easy flowing, moisture cure polyether sealant, applied with an industrial caulking gun and produces a flexible joint/seal with good adhesion to a variety of construction surfaces including sheet metal, masonry, aluminum, brick, wood and concrete.

Surfaces to receive FTR 101 must be structurally sound, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, paint, wax, rust, waterproofing or curing and parting compounds. In cool weather, store cartridges at room temperatures for at least 24 hours before using.

#### APPLICATIONS

**Caution:** Avoid prolonged contact with skin. Uncured adhesive irritates eyes. In case of contact with eyes, immediately flush with water. Call a physician. Please refer to the MSDS for First Aid information. Most current MSDS can be found at [www.fibertite.com](http://www.fibertite.com). KEEP OUT OF REACH OF CHILDREN

**Shelf Life:** One year from date of manufacture when stored in normal environments. High temperature and high relative humidity may significantly reduce shelf life.

**Storage:** Store original, unopened cartridges in a cool, dry area. Protect cartridges from water, heat and direct sunlight. Elevated temperatures will reduce shelf life. FTR 101 will not freeze.

**Clean-Up:** Wet sealant can be removed using a solvent such as alcohol. Cured FTR 101 can be removed by abrading or scraping the substrate.

#### PHYSICAL PROPERTIES

Color	White
Viscosity	Medium weight paste
Coverage	Appr. 20 lf per cartridge/3/8-in joint
VOC	< 19 g/l
Application	Apply by professional caulking gun/ tool sealant for maximum adhesion
Open / Cure Time	Skins within 1/2-hr / Full cure within 1-week
Shelf Life	1 year un-opened cartridge
Storage	Un-opened cartridge/away from heat and direct sunshine
Elongation	750 to 800%
Tensile Strength	150 psi
Shore A Hardness	20 +/- 3
Working Temp. Range	40°F to 90°F

#### ADVANTAGES

- 100% solids content.
- Does not contain any solvent.
- Cannot shrink
- Odor free
- 30 minute skin time at 70 F.
- Paintable in 24 hours
- +/- 50% joint movement
- Won't outgas on damp surfaces
- Bonds to Kynar coated metal
- Non-slump
- Bonds well to KEE membrane
- 1 year shelf life
- Easy to gun and tool
- Will not stain limestone wall panels or copings
- Service temperature -40 F – 200 F
- Shear strength 150 psi
- Elongation > 700%



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# 7.5 FiberTite® Sealants/Adhesives



## FTR 201

### Product Data

FiberTite FTR 201 is a trowel grade polymeric sealant, one side application (SUBSTRATE ONLY), designed to adhere FiberTite membrane to clean, dry, pre-approved vertical surfaces and/or to create temporary seal around penetrations.

#### DESCRIPTION

FTR 201 is a medium weight, high solid, solvent release (mineral spirits) mastic, containing synthetic rubber and resin as base products. This provides excellent water resistance and good green strength and excellent adhesion.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/03) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Approved substrates include wood and masonry and shall be clean, dry and non-asphaltic. Mastic is to be applied using a minimum 1/8 inch saw toothed trowel, and in sufficient quantity to cover the entire vertical surface for flashing applications. A standard trowel can be used for temporary seals around penetrations.

Curing and open time will vary according to the climate. The mastic must be "wet" in order to ensure adhesion to the FiberTite membrane. Do not allow the mastic to begin to cure or "skin" over prior to installing the FiberTite membrane. Once the mastic has been properly applied, install the FiberTite membrane and thoroughly rub the membrane into the mastic to insure 100% contact and adhesion. Sufficient quantity can be checked by pressing a finger against the membrane/flashing. The proper application will leave a dimple at the point of pressure.

Clean up is accomplished with mineral spirits. Do not get mastic in seams to be hot air welded. If seam area becomes contaminated, the mastic must first be removed with mineral spirits and then wipe the area with acetone. (Acetone will not remove mastic).

#### PHYSICAL PROPERTIES

Color	Off white
Viscosity	Medium weight mastic
Solid Wt.	77%
Coverage	Nominally 35 ft <sup>2</sup> per gallon
V.O.C.	325 g/l
Application	Saw tooth (notched) trowel
Open / Cure Time	15 to 30 minutes depending on weather conditions
Shelf Life	1 year/closed container
Storage	Closed container/between 40°F (4.4°C) and 90°F (27°C)
Wt. Gal.	11.8 lb (1.4 kg/l) shipped in 5 gal. pails
Working Temp. Range	40°F and rising to 90°F



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# 7.5 FiberTite® Sealants/Adhesives



## FTR 190e

### Product Data

FTR 190e is a low VOC solvent borne contact adhesive, designed for bonding non-fleece back FiberTite membranes to pre-approved horizontal and vertical surfaces.

#### DESCRIPTION

FTR 190e is compliant with all air quality districts in the state of California and other regulated areas in the USA, making it the most environmentally friendly "solvent" borne adhesive available.

FTR 190e is a Nitrile/PVC polymeric adhesive. The adhesive is quick drying but has an extended "open-time" so proper planning, placement and care to insure appropriate adhesion, especially during periods of high humidity, is necessary.

FTR 190e is listed/approved for use with specific FiberTite Roofing Systems by FM-Global and Underwriters Laboratories.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Surfaces/substrate must be clean, dry and free of dirt, oil, grease or similar contaminants that could interfere with the bonding process.

Compatible substrates include: masonry, wood and metal for flashing applications as well as pre-approved polyisocyanurate insulation, approved gypsum based cover-boards and approved base sheets for horizontal roofing applications.

FTR 190e can be applied by either rolling or spraying at a coverage of approximately 50 ft<sup>2</sup> net per gallon (1.2 m<sup>2</sup>/ liter), 45 ft<sup>2</sup> per 1/2 gallon to the substrate (1.1m<sup>2</sup>/ 1/2 liter), 55 ft<sup>2</sup> per 1/2 gallon (1.3 m<sup>2</sup>/1/2 liter) to the membrane. Actual coverage depends upon the porosity and smoothness of the surface to be bonded.

To ensure proper application and curing of the adhesive, the outside air temperature must be 40° F (4.4°C) and rising. Spray or roll a smooth, even coat of adhesive over the exposed, pre-positioned bottom of the FiberTite membrane and a mirrored symmetrical area of the substrate, insuring 100% coverage. Allow the solvents in the adhesive to dissipate to the point that the adhesive is "sticky" but not stringy to the touch. When sufficiently cured/dry, carefully maneuver the glued portion of the FiberTite membrane onto the glued substrate.

#### PHYSICAL PROPERTIES

Color	Amber
Viscosity	18,000 - 24,000 cps
Solid Weight	20% ± 2%
Coverage	50 ft <sup>2</sup> /gal. (1.2 m <sup>2</sup> ) of bonded surface
V.O.C.	199 gm/L
Application	Brush, roller or spray
Open/Cure Time	10 - 30 min./complete cure in 28 days
Shelf Life	1 Year
Storage	Closed container/between 50° and 80°F
Wt. Gal.	7.4 lbs (0.9 kg/liter) shipped in 5 gal. pails
Working Temp. Range	40°F and rising/up to 90°F



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CHEMICAL FABRICS & FILM ASSOCIATION, INC.



# 7.5 FiberTite® Sealants/Adhesives



## FTR 290

### Product Data

FTR 290 is a solvent borne bonding adhesive, one side application (SUBSTRATE ONLY), designed specifically for adhering FiberTite-FB “Fleece Back” membrane(s) to a variety of compatible and pre-approved surfaces.

#### DESCRIPTION

FTR 290 is hydrolytically stable and water repellent. It is self-curing, quick drying and has excellent green strength. Proper planning and application of the adhesive and FiberTite-FB membrane is required to obtain uniform and consistent adhesion. Properly applied, the resulting bond to FiberTite-FB membrane is superior.

FTR 290 is listed/approved for use with FiberTite-FB membranes in specific roofing systems by FM-Global and Underwriters Laboratories.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Surfaces and substrate must be clean, dry and free of dirt, oil, grease or similar contaminants that could interfere with the bonding process. Compatible substrates include pre-approved polyisocyanurate insulation, pre-approved gypsum-based coverboards, approved base sheets and “dry” and sealed cellular lightweight insulating concrete.

FTR 290 can be applied by either roller or spray at a coverage of approximately 90 to 100 ft² per gallon (2.2 m²/liter), depending on the porosity and smoothness of the surface to be bonded.

To ensure proper application and curing of the adhesive, outside air temperature shall be 40°F (4.4°C) and rising. Roll a smooth, even coat of the adhesive over the substrate, ensuring 100% coverage. Allow the solvents in the adhesive to dissipate to the point that the adhesive is still wet yet sticky to the touch. Do not allow the adhesive to “over cure” or dry out before rolling in the FiberTite-FB membrane.

#### PHYSICAL PROPERTIES

Color	Amber
Viscosity	2300 ± 300 cps
Solid Weight	45% ± 2%
Coverage	90-100 ft²/gal. (2.2 m²/liter) of bonded surface
V.O.C.	234 gm/L
Application	Roller, spray
Open/Cure Time	2 hr. Complete cure in 2-3 weeks
Shelf Life	1 year un-opened container
Storage	Closed container/between 40° and 80°F
Wt. Gal.	7.4 ± 0.1 lbs (0.9 kg/liter) shipped in 5 gal. pails
Working Temp. Range	40°F and rising/up to 90°F



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# 7.5 FiberTite® Sealants/Adhesives



## FTR 390

### Product Data

FTR 390 is a water borne, environmentally friendly, rubberized asphalt adhesive designed specifically for adhering FiberTite-FB “Fleece Back” membrane(s) to a variety of compatible substrates.

#### DESCRIPTION

FTR 390 is characterized by a high degree of workability unique for adhesives of the water borne type. The adhesive exhibits a degree of pressure sensitivity uncommon in rubber asphalt-based adhesives. There are no fire or toxicity hazards. Temperature and water resistance factors of the cured adhesive are excellent.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Compatible substrates include approved polyisocyanurate insulation, gypsum-based cover-boards, approved base sheets and “dry” and sealed cellular lightweight insulating concrete. Application of FTR 390 is made by brush or heavy roller at a coverage of approximately 60 ft<sup>2</sup> per gallon (1.5 m<sup>2</sup> per liter), depending on the porosity and smoothness of the surface to be bonded.

As a water vehicle material, the cleaning of tools and equipment is easier than with solvent-based adhesives. Properly prepared substrates shall be smooth, dry, free of debris and/or any other irregularities. Roll a smooth, even coat of the adhesive over the substrate, insuring 100% coverage. Allow adhesive to become tacky or “sticky” (do not allow a film to develop on the adhesive or dry out). Roll the FiberTite-FB membrane into the adhesive. Outside air temperature shall be 40°F (4.4°C) and rising during application of the adhesive.

#### PHYSICAL PROPERTIES

Color	Black
Viscosity	18,000 cps
Solid Weight	Appr. 72.0%
Coverage	60 ft <sup>2</sup> /gal. (1.5 m <sup>2</sup> /liter)
V.O.C.	3 g/l
Application	Brush or heavy roller
Open/Cure Time	10 to 30 minutes depending on weather conditions
Shelf Life	6 months
Storage	Closed container/between 50° and 80°F
Wt. Gal.	9 lb. (1.1 kg/l) shipped in 5 gal. pails
Working Temp. Range	40°F and rising/up to 90°F



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ESR-1456

# 7.5 FiberTite® Sealants/Adhesives



## FTR 490

### Product Data

FTR 490 is a high performance, polymeric water borne adhesive specially engineered for adhering FiberTite-FB “Fleece Back” membranes and “SM” style membranes to a variety of compatible substrates.

#### DESCRIPTION

FTR 490 is a single surface (substrate only), VOC compliant and environmentally safe adhesive. The adhesive provides very high initial tack strength unlike many other water borne adhesives.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Compatible substrates include approved polyisocyanurate insulation, gypsum-based cover-board, approved base sheets and “dry” and sealed cellular lightweight insulating concrete.

FTR 490 adhesive is applied by roller. Coverage rates will vary depending on membranes to be bonded and the porosity and smoothness of the surface to be bonded.

As a water borne material, the cleaning of tools and equipment is generally easier than with solvent borne adhesives. Properly prepared substrates shall be smooth, dry, free of debris and/or any other irregularities. Roll a smooth, even coating of the adhesive over the substrate, insuring 100% coverage. Roll the FiberTite-FB or FiberTite-SM membrane(s) into the wet adhesive. Broom the membranes in place, then apply firm pressure by means of a weighted roller. Outside air temperature shall be 40°F (4.4°C) and rising during application of the adhesive.

#### PHYSICAL PROPERTIES

Color	White
Viscosity	10,000 cps
Solid Weight	50%
Coverage FB Membranes	110 ft <sup>2</sup> /gal. (2.7 m <sup>2</sup> /liter)
Coverage SM Membranes	90 ft <sup>2</sup> /gal. (2.2 m <sup>2</sup> /liter)
V.O.C.	153 g/l
Application	Brush or roller
Open/Cure Time	10 to 30 minutes depending on weather conditions
Shelf Life	1 year
Storage	Closed container/between 50 and 80°F
Wt. Gal.	8.86 lb. (1 kg/l) shipped in 5 gal. pails
Working Temp. Range	40°F and rising/up to 90°F



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ESR-1456



# 7.5 FiberTite® Sealants/Adhesives



## FTR-SLS

### Product Data

Seaman Corporation emphasizes that every reasonable effort should be made to eliminate the need for pitch pans including the removal of existing pitch pans. In the event that a viable alternate is not found; Seaman Corporation offers our FTR-SLS (self-leveling sealant) as an approved pitch pan sealant.

#### DESCRIPTION

FTR-SLS is a moisture curing, pourable, polyether sealant designed for use in pitch pans. The sealant is suitable for application in all climates. FTR-SLS is solvent free, contains no isocyanates and will not shrink upon curing. FTR-SLS has resilient elastomeric properties and excellent adhesion to most construction materials. FTR-SLS's low durometer accommodates greater movement in penetration seals than typical urethane sealants.

Follow FiberTite Specifications and Details for proper pitch pan installation.

#### STORAGE

Store original, unopened containers in a cool, dry area. Protect unopened containers from water, heat and direct sunlight. Elevated temperatures will reduce FTR-SLS's shelf life.

#### SHELF LIFE

One year from date of manufacturer when stored in normal environments. High temperature and high relative humidity may significantly reduce shelf life.

#### PACKAGING

28-oz cartridge / 12 cartridges per carton

#### COLOR

Gray

#### PRECAUTIONARY DATA

- Do not store in elevated temperatures
- Do not apply at temperatures below 30°F
- Do not use petroleum-based solvents such as mineral spirits or xylene for cleaning purposes
- Maintain FTR-SLS at room temperature before applying to ensure easy gunning and leveling

#### CURE TIME

FTR-SLS is a moisture cure sealant. Rate of cure is dependent on atmospheric conditions. Curing proceeds at a rate of ¼" a week at 70°F and 50% Relative Humidity. Lower temperature and humidity will inhibit the rate of cure. Higher temperature and humidity will accelerate rate of cure. Depths greater than 2" will cure through in 2 to 3 months.

#### CLEAN UP

Wet adhesive can be removed using a solvent such as alcohol. Cured FTR-SLS can be removed by abrading or scraping the substrate.



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ESR-1456

# 7.5 FiberTite® Sealants/Adhesives



## FTR 601

### Product Data

FTR 601 is a two part, one step, VOC compliant, general purpose, foamable insulation adhesive that contains no solvents, sets in minutes and is used to bond approved insulation and cover-boards to pre-approved substrates.

#### DESCRIPTION

FTR 601 utilizes a one step application process that eliminates error due to poor mixing. FTR 601 Foamable Adhesive is designed for use as an adhesive for bonding approved roof insulations to a building's structural roof deck, base sheets, other insulation board and smooth built-up roof surfaces.

FTR 601 insulation adhesive is shipped with 4 ea. 1500ml "dual" Cartridges/Case.

#### APPLICATION

See Seaman Corporation Guide Specification (GS 04/08) and Addendums as well as Seaman Corporation/FiberTite Material Safety Data Sheets (MSDS) for additional and specific application, design parameters and material precautions.

Approved Insulations include: FTR-Value polyisocyanurate insulation and gypsum based cover-boards. Pre-Approved substrates include: Concrete, Gypsum, Cementitious Wood Fiber, Lightweight Insulating Concrete, Wood and/or Steel.

All work surfaces shall be clean, dry, free of dirt, dust, oils, gravel, unadhered coating, deteriorated membrane and other contaminants that may result in an un-sound or irregular surface that will impede performance and subsequent bond of the adhesive. Do not apply adhesive to damp or wet surface.

Insulation boards shall not exceed 4 ft x 4 ft (4 ft x 8 ft gypsum based cover-boards may be utilized).

With a utility knife, carefully remove the molded tips at the groove from the mixing head. Attach a mixing tip to the threaded mixing head. Place the cartridge into the (single bead or multi-bead) applicator. Apply FTR 601 Foamable Adhesive directly to the substrate, using a ribbon pattern. Space 1/2-in wide beads, 12-in o.c., to achieve proper coverage rates for insulation attachment. Perimeter and corner areas of the roof will require tighter ribbon spacing to meet enhanced uplift.

As adhesive is applied, immediately place insulation board into wet adhesive. Do not allow the adhesive to skin over. Eliminate uneven surfaces to ensure positive and continuous contact between insulation board and substrate.

Coverage rates will vary when used over irregular surfaces. Unused material can be applied at a later date by simply replacing the mixing tip.

#### PHYSICAL PROPERTIES

Color	Off White to Amber
Physical State	Viscous Liquid / Catalyzed to Cellular Foam
Solid Weight	NA / High Solid Content
V.O.C.	< 17% Volatiles
Application	2-component cartridges/yielding approx. 600 ft <sup>2</sup> per case at 1/2-in x 12-in ribbons
Open/Cure Time	3-5 minutes/apply insulation boards immediately
Shelf Life	12 months un-opened containers
Storage	Store material between 65° - 85°F (18° - 29°C) 24 hours before use. Do not store in direct sunlight or high temperatures (90° F/32° C and up)
Wt. Gal.	NA
Working Temperature Range	40°F and rising/up to 90°F



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ROOFING SOLUTIONS

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**SPRI**



## FiberTite CR-20 Polyurethane Foam Adhesive

### Product Data

FiberTite CR20 is a Polyurethane Foam Insulation and Fleece Back Membrane Adhesive. FTR- CR20 is a two component elastomeric polyurethane froth adhesive. FTR-CR20 is specifically designed to provide outstanding adhesive properties. The “A” and “B” components are dispersed from two pre-pressurized disposal cylinders utilizing a disposal foam applicator.

#### DESCRIPTION

FTR-CR20 is specifically designed to adhere a variety of insulation board stock to various approved substrates in both new and recover applications.

FTR-CR20 can also be used to adhere FiberTite Fleece Back membranes to a variety of approved substrates including polyisocyanurate insulation board, gypsum based coverboards, structural concrete and smooth bituminous roofs.

#### APPLICATION

**Substrate Preparation:** All surfaces to be bonded must be clean, dry and free of any debris that would interfere with the proper application of the insulation and/or fleece back membrane.

**For Insulation:** FTR-CR20 is applied in rows spaced a maximum 12" o.c. Insulation boards are to be placed immediately on the wet adhesive but not walked into place or compressed into the adhesive until the FTR-CR20 has begun to thicken and starting to develop its initial bond.

After the adhesive has attained its initial bond strength, the boards can be “walked-in” and will be compressed to the deck or substrate exhibiting minimal slippage or movement. The boards should be exposed to minimum traffic for at least 10 to 20-minutes depending on temperature after they have been walked in place to avoid breaking the freshly formed bond.

The time involved in the process is contingent on the ambient as well as the substrate temperature. The chart below illustrates the approximate time required prior to walking in the boards.

Ambient / Substrate Temperature	Time Before Walking In
40° - 60°F	6 – 10 minutes
60° - 80°F	3 – 6 minutes
80° - 100°F	1 – 3 minutes

**For Fleece Back Membrane:** FTR-CR20 is a single surface adhesive. It is spray applied in a “Spatter Pattern” onto the roof, insulation or coverboard by dispensing the adhesive in a spray pattern similar to the action required when hand watering a flower bed. The spatter pattern should yield a heavily textured coating of approximately 1/4" to 1/2" nominal thickness height on the peaks of the spatter.

The seams of the membrane and factory selvage edge must be protected from overspray of the FTR-CR20. If overspray does contaminate the seam area(s), immediately clean the seam area with acetone while the FTR-CR20 is still wet.

The bonding range for the FTR-CR20 is approximately 1-10 minutes from the start of spraying and will vary according to ambient as well as substrate temperature. The amount of substrate area that the FTR-CR20 is applied to ahead of the membrane should be monitored to prevent installing the membrane in dry adhesive. Care must be taken, particularly in high temperature environments, (90°F and above) to insure that the FTR-CR20 has not dried or skinned over prior to embedding the fleece back membrane.

Refer to FiberTite Specifications for additional instruction in the use of FTR-CR20 as either an insulation adhesive or fleece back membrane adhesive.

**Storage and Handling:** The “A” and “B” containers shall be stored between 45°F and 95°F. The shelf life, at these temperatures is 18 months from the date of production.

The product temperature prior to application shall be between 70°F and 90°F. The minimum ambient and surface temperature shall be 40°F and rising.

Temperatures outside the stated ranges may affect the bonding range, dispensability and overall performance of the product.

**Cylinder Disposal:** Disposable Cylinders shall be disposed of in accordance with local, state and federal regulations. Consult MSDS for more information.



**INTELLIGENT ROOFING SOLUTIONS**



Subject to the conditions of Approval for a roof covering when installed as described in the current edition of the Approval Guide.



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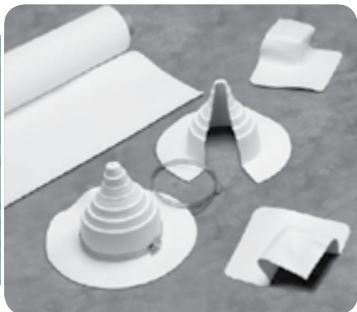
These specifications are current as of the date of printing.

Revisions or additions may be issued periodically.

For a listing, presentation, and download of the most recent data, visit:

[www.fiberlite.com/document-library/product-data-sheets](http://www.fiberlite.com/document-library/product-data-sheets)

# 7.6 FiberTite® Accessories



## Flashing Accessories

### Product Data

Seaman Corporation provides pre-molded and sheet form non-reinforced accessories to complement the flashing needs for FiberTite Roofing Systems.

#### DESCRIPTION

These flashing components are manufactured from Seaman Corporation's proprietary compound, utilizing DuPont's™ Elvaloy® KEE (Ketone Ethylene Ester) compound as the principle polymer.

Pre molded KEE pipe flashings are injection molded and designed to accommodate cylindrical penetrations from 1-in up to 6-in in diameter.

Pre-molded universal inside/outside corner flashings are injection molded and designed to accommodate 90° inside or outside wall, curb and other rectangular penetration corners.

The use of pre-molded pipe and corner flashings significantly improves installation consistency and reduces field labor.

Seaman Corporation also provides a 60-mil, non-reinforced KEE membrane to use in roofing applications where the pre-molded components do not accommodate the penetration.

#### APPLICATION

Seaman Corporation's FiberTite accessory components are formed and/or sealed in place using conventional hot air welding techniques. Consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems and Installation Details for installation requirements, cautions and parameters.

#### PHYSICAL PROPERTIES

Pre-Molded Pipe Flashing	
Material	KEE
Thickness	0.55 in
Packaging	8 ea. per carton
Pre-Molded Inside/Outside Corner	
Material	KEE
Thickness	.080 in
Packaging	20 ea. per carton
Non-Reinforced Sheet	
Material	KEE
Thickness	.060 in
Packaging	4-ft x 24-ft rolls

\*Colors: FiberTite non-reinforced accessory components are stocked in our standard DC196 "off white." Also, most accessory components can be made available in the following additional colors: DC6/white, DC901/energy gray, DC903/patina green and DC261/thermal tan.



For more information on FiberTite Systems and accessories please call:  
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International (330) 262-1111  
[www.fibertite.com](http://www.fibertite.com)

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## FTR Termination Bar

### Product Data

FTR Termination Bar is designed and intended for attaching and sealing FiberTite membrane and flashing terminations.

#### DESCRIPTION

FTR Termination Bar is designed and intended for use with FiberTite Roofing Systems (FTR). FTR Termination Bar is made of corrosion-resistant extruded 6063 T5 aluminum with a mill type finish.

Bars are pre-punched with slotted holes measuring 0.28 in x 0.38 in (0.66 cm x 0.97 cm) at 7.8 in (2.0 cm) intervals. Each FTR Termination bar measures 10 ft (3m) in length. There are no minimum quantities required for packaging.

Fasteners with metal, neoprene backed sealing washers are to be used when bars are going to be exposed to the weather. Seaman Corporation offers a variety of fasteners for use with FTR Termination Bars as substrates dictate.

#### APPLICATION

Seaman Corporation's FTR Termination Bar is designed for mechanical attachment to either provide linear restraint at flashing transitions or compression seals at flashing termination points. Consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems and Installation Details for installation requirements, cautions and parameters.

#### PHYSICAL PROPERTIES

T-Bar with Lip	
Thickness	0.125 in (0.32 cm)
Width	1.0 in (2.5 cm)
Lip Width	0.25 in (0.64 cm)
Lip Angle	45°
Flat Bar	
Thickness	0.125 in (0.32 cm)
Width	1.0 in (2.5 cm)

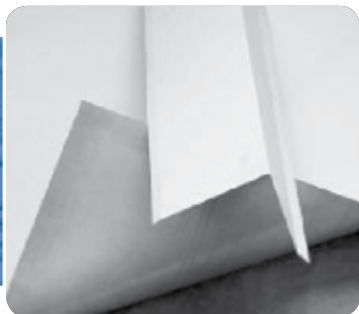


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# 7.6 FiberTite® Accessories



## FiberClad Coated Metal

### Product Data

FiberClad is a heat weldable, polymeric coated sheet metal flashing for use with all FiberTite Roofing Systems.

#### DESCRIPTION

The polymeric coating helps extend the monolithic nature of the membrane roofing system to the metal flashing profiles. In addition to providing a hot air weldable surface to the metal flashing, the polymeric coating protects the steel or aluminum sheet metal from environmental elements and accents the aesthetics of the finished roof system.

FiberClad is sold only as flat sheet stock to allow the roofing contractor to customize individual metal profiles and is included in Seaman Corporation's Commercial Warranty for FiberTite Roofing Systems.

#### APPLICATION

FiberClad metal flashing is cut and formed to meet desired flashing profiles on standard (10-ft) sheet metal equipment. FiberClad metal flashing profiles are fastened in accordance with project requirements and current Seaman Corporation Guide Specifications and Details. Metal flashing profiles are sealed using nominal 6-in strips of FiberTite membrane hot air welded to the metal profile and the membrane roof system and/or flashing.

#### PHYSICAL PROPERTIES

##### 24 ga. Hot dipped G-90 Steel

Film Thickness	.020 in (0.5 mm)
Sheet Dimensions	48-in x 120-in (1.2 m x 3.0 m)

##### \*0.040 in thick 3003H14 Aluminum

Film Thickness	.020 in (0.5 mm)
Sheet Dimensions	47.5-in x 120-in (1.2 m x 3.0 m)

Available colors: DC196-off white, bronze, gray & white.

\*Aluminum FiberClad available in DC196 off white only.



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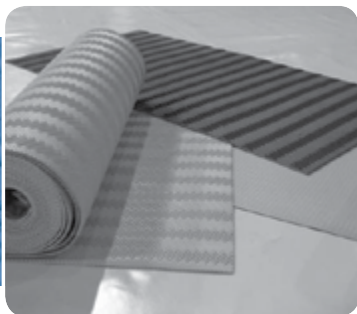


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# 7.6 FiberTite® Accessories



## FiberTite Walkway & Protection Materials

### Product Data

Seaman Corporation offers three distinct products to enhance roof traffic safety and optimize membrane protection in roof areas where frequent HVAC maintenance is required.

#### DESCRIPTION

FiberTite Mellow Yellow walkway material is manufactured from a proprietary Seaman Corporation KEE modified vinyl formulation with UV stable yellow pigment and deep herring bone ribbed texture to improve footing on wet surfaces.

FiberTite Tuff-Trac protection material features our FiberTite-XTreme membrane's 46 x 44/1,000 x 1,000 denier woven polyester fabric reinforcement, is coated with a proprietary yellow Seaman Corporation KEE formulation and embossed with a low profile diamond plate design.

FiberTite Grey protection pads are manufactured from high grade vinyl and incorporate a deep herring bone ribbed embossed surface texture.

#### APPLICATION

Walkway and protection materials are used to provide defined paths to facilitate common rooftop traffic and traffic involved in regular servicing, maintenance and repairs. FiberTite walkway and protection materials are designed to improve slip resistance, promote positive traction and offer protection from potential damage caused by dropped tools or mishandled equipment.

FiberTite walkway and protection materials are to be maintained in specific areas around roof access points (ladders, hatches, doorways, etc.), around mechanical equipment requiring periodic maintenance and as a walkway system on roof areas subject to frequent foot traffic.

Mellow Yellow walkway and Tuff-Trac protection material: Rolls of walkway and/or protection material can easily be cut to various shapes or sizes to facilitate most applications. FiberTite Mellow Yellow walkway and Tuff-Trac protection material is designed to be continuously hot air welded directly to the FiberTite Roof membrane.

Grey protection pad: Attach these pads by using hot air to weld 6 in x 6 in (15 cm x 15 cm) strips of FiberTite membrane at the four corners on the back of the pads. Then "tack" weld the strips to the FiberTite Roofing System. Do not weld Grey protection pads directly to the roofing membrane.

For additional recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems.

#### PHYSICAL PROPERTIES

<i>Mellow Yellow Walk-Way Material</i>	
Thickness	5/32 in (4 cm)
Roll Size	30 in x 50 ft (76 cm x 15.2 m)
Breaking Strength (lbs)	56
Dimensional Stability (%)	-1.6 MD / +.63 XMD
Elongation (%)	205
Tear Strength	NA
Puncture Resistance	NA
<i>Tuff-Trac Protection Material</i>	
Thickness	.090 in nominal
Roll Size	28 in x 43 ft (71 cm x 13.1 m)
Breaking Strength (lbs)	1,200
Dimensional Stability (%)	0.5 MD / .5 XMD
Elongation (%)	15%
Tear Strength	350 lbs
Puncture Resistance	850 lbs
<i>Grey Protection Pad</i>	
Thickness	.25 in (0.6 cm)
Pad Size	2 ft x 4 ft (0.6 m x 1.2 m)
Breaking Strength	NA
Dimensional Stability (%)	0.2
Elongation (%)	100%
Tear Strength	NA
Puncture Resistance	NA



For more information on FiberTite Systems and accessories please call:  
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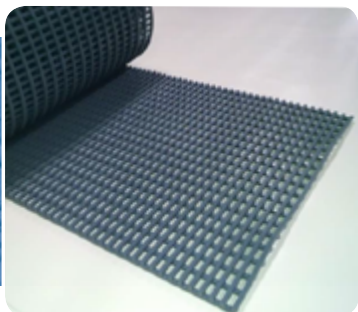
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# 7.6 FiberTite® Accessories



## FTR CROSSGRIP

### Product Data

The FTR CROSSGRIP walkway is an open grid PVC material with cross directional top ribs that provides positive traction with a slip resistant design.

#### DESCRIPTION

The FTR CROSSGRIP walkway is an open grid PVC material with cross directional top ribs that provides positive traction with a slip resistant design. The walkway material is available in 2-ft wide by 9/16-in high by 33-ft long rolls.

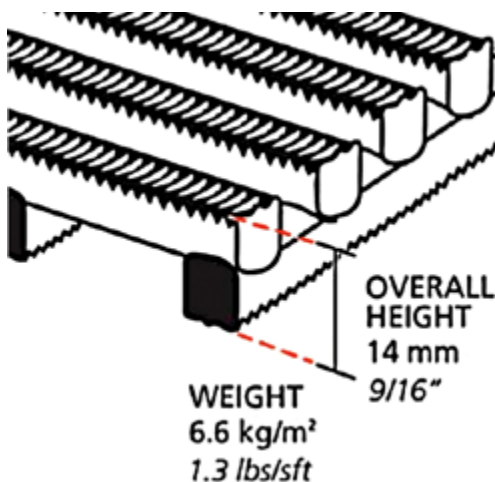
The walkway is loose laid on the roofing membrane for ease of installation and has been tested to withstand wind speeds up to 90-mph without any additional attachment. For high wind areas the walkway can be secured to the FiberTite roofing membrane with welded loops / strips of FiberTite.

FTR CROSSGRIP walkway is available in light grey. It is also available in 3-ft and 4-ft widths with special order and lead times.

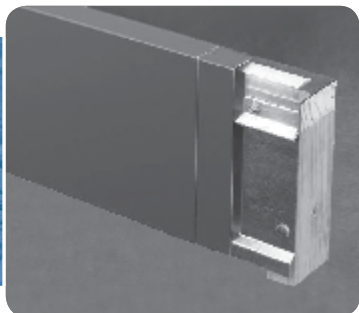
Composition: Flexible Plasticized Polyvinyl Chloride (PVC)

Warranty: 5-Years

#### DETAIL



# 7.6 FiberTite® Accessories



## FiberTite Architectural Metal Edge Systems

### Product Data

FiberTite offers a complete line of pre-engineered Architectural Metal edge flashing systems.

#### DESCRIPTION

FiberTite Architectural Metal Edge Systems are engineered and tested to withstand the harshest of conditions and are specifically designed to complement FiberTite Roofing Systems.

FiberTite AT Fascia consists of a heavy duty extruded aluminum anchor bar that secures the FiberTite membrane to the perimeter nailer. The anchor bar also functions as a receiver for the snap-on steel or aluminum metal fascia cover.

FiberTite 200 Fascia consists of a two piece 24-ga steel water dam and either aluminum or steel fascia combination.

FiberTite Architectural Metal Edge Systems are available in a variety of exterior finishes (natural mill, clear or anodized) and standard Kynar 500 colors.

Pre-finished and factory fabricated accessories including miters, spill outs for downspouts and scuppers are available for either the FiberTite AT or FiberTite 200 edge systems.

#### APPLICATION

Verify the edge systems profile and accuracy to fit the edge assembly prior to ordering/fabrication. FiberTite Architectural Metal Edge Systems shall be installed true and straight to substrates that are clean, dry and free of foreign matter.

For additional installation recommendations and requirements, please consult the most current versions of Seaman Corporation's Guide Specifications for the Installation of FiberTite Roofing Systems and FiberTite Construction Details.

#### PHYSICAL PROPERTIES

FiberTite AT Fascia	
Anchor Bar	6063-T6 alloy aluminum
Fascia	24 ga. Steel, 0.040, 0.050 or 0.063 in aluminum
Lengths	12 ft typical anchor bar and fascia
FiberTite 200 Fascia	
Water Dam	24 ga. Steel
Fascia	24 ga. Steel, 0.040, 0.050 or 0.063 in aluminum
Lengths	12 ft typical anchor bar and fascia



For more information on FiberTite Systems and accessories please call:  
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# 7.6 FiberTite® Accessories



## FiberTite® Simulated Metal Roof Profile

### Product Data

Metal roofs look great and tend to have long life, but their reputation to be leak free is less than brilliant – particularly for complex roofing designs such as changes in roof direction, valleys, wall seams and conduit or vent penetrations. FiberTite's patent-pending Simulated Metal Roofs provide the look of metal with a proven long-term track record and heat-sealed seams for superior long-term leak protection.

#### DESCRIPTION

FiberTite's patent-pending Simulated Metal Roof Profile (SMRP) is manufactured from Seaman Corporation's proprietary compound including a coextruded, thermally-activated, KEE adhesive strip on the bottom for flawless installation.

The SMRP profile is designed for installation over FiberTite Fleece Back membranes. (Follow most current FiberTite Guide Specification – SMRPO6-12 and Detail Drawings for the installation of Fleece Back Membranes with the Simulated Metal Roof Profile)

The FiberTite SMRP is available in flexible coils that are 100' (30.5 m) in length.

FiberTite SMRP may be secured to pre-approved FiberTite membranes at specified intervals to simulate the aesthetics of a metal roof system.

The coextruded, thermally-activated, KEE adhesive strip on the bottom of the profile ensures complete compatibility with FiberTite membranes and the durability expected from a FiberTite Roofing System. The SMRP is adhered to FiberTite membranes using conventional hot air equipment.

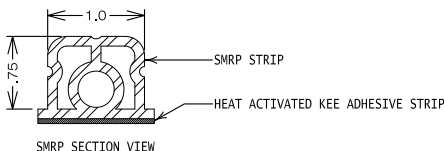
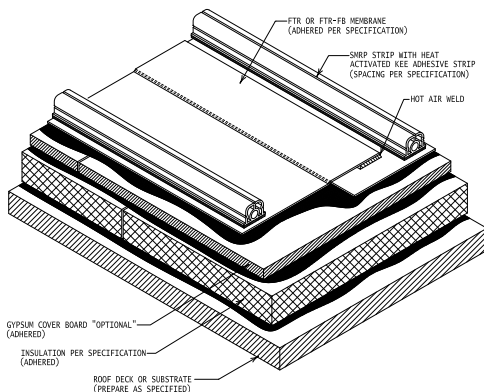
Seaman Corporation offers a "wheel kit" to modify Leister Hot Air Equipment to automate the installation of the SMRP.

#### STANDARD COLORS

DC - 6 White  
DC - 953 Terra Cotta  
DC - 510 Slate Gray  
DC - 261 Thermal Tan

DC - 624 Colonial Red  
DC - 903 Patina Green  
DC - 901 Energy Gray

#### CONSTRUCTION DETAIL

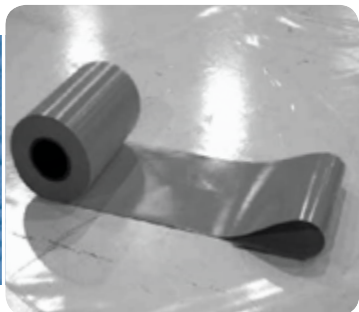


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# 7.6 FiberTite® Accessories



## FiberTite Roof Perimeter Caution Strip

### Product Data

FiberTite® Roof Perimeter Caution Strip provides a highly visible warning for service personnel.

#### DESCRIPTION

FiberTite Roof Perimeter Caution Stripping is available in rolls measuring either 5-in or 10-in by 100-ft. The strips are designed to provide a highly visible warning to service personnel that they are nearing the most hazardous area of the roof: the roof edge.

The caution strip is constructed of a knitted 7.5 oz/yd. polyester fabric, coated with a pigment rich "safety yellow" thermoplastic PVC compound. The durability of the caution strip is further enhanced with a proprietary acrylic-urethane top finish to resist UV, improve color fastness and heighten overall visibility by repelling dirt.

#### APPLICATION

The caution stripping is compatible with all vinyl based roof membrane systems and can be welded directly to the thermoplastic vinyl membrane roofing with conventional hot air welding equipment and techniques.

#### PHYSICAL PROPERTIES

Perimeter Caution Strip	Type Weight	Polyester 7.5 oz/yd <sup>2</sup>
Thickness	ASTM D751	30 mil.
Tongue Tear	ASTM D751	275 lbf
Grab Tensile	ASTM D751	700 lbf
Adhesion	ASTM D751	10 lbf/in
Low Temp.	ASTM D2136	Pass -40°F
Flame Resistance	UL 214	2 second flameout



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