BlazeMaster® Fire Protection Systems
Sample Specifications – North America

PART 1 - GENERAL

1.0 PRODUCT DESCRIPTION

CPVC fire sprinkler pipe and fittings shall be extruded/molded from BlazeMaster® CPVC compounds manufactured by Lubrizol Advanced Materials. The pipe compound shall meet cell class 23547 and the fittings compound shall meet cell class 24447 as defined by ASTM D1784. Both pipe and fittings compounds shall be certified by NSF International for use with potable water and shall be pressure rated by Plastics Pipe Institute (PPI).

1.1 PIPE AND FITTINGS

A. Pipe shall meet or exceed the requirements of ASTM F442 material designation CPVC 4120-06 in standard dimension ratio (SDR) 13.5. Additionally, the pipe must be marked with the following pressure ratings: “320 PSI @ 73° F”, “175 PSI @ 150° F” and “100 PSI @ 180° F”.

B. Fittings shall meet or exceed the requirements of ASTM F437 (schedule 80 threaded), ASTM F438 (schedule 40 socket) or ASTM F439 (schedule 80 socket).

C. Both pipe and fittings shall be Listed by Underwriters Laboratories for use in automatic fire sprinkler systems and shall bear the logo of the Listing Agency. See UL Fire Protection Equipment Directory, categories VIWT and HFYH.

D. Both pipe and fittings shall be certified by NSF International for use with potable water.

E. Ancillary products (including, but not limited to fire stops, thread sealants, leak detectors, etc.) coming into contact with pipe and fittings must be chemically compatible with BlazeMaster® CPVC pipe and fittings (reference the Lubrizol FBC™ System Compatible Program).

1.2 SOLVENT WELDING

All socket type joints shall be assembled with solvent cements that meet or exceed the requirements of ASTM F493. Safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement shall be certified by NSF International for use with potable water, and approved by the manufacturers. The solvent cements shall be approved for use with BlazeMaster® CPVC pipe and fittings.

1.3 BASIC USE

BlazeMaster® CPVC pipe and fittings shall be listed by UL and also either ULC or C-UL for use in:

A. Light Hazard occupancies as defined in NFPA 13, “Standard for the Installation of Sprinkler Systems.”

B. Residential occupancies as defined in NFPA 13R, “Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.”

C. Residential occupancies as defined in NFPA 13D, “Standard for the Installation of Sprinkler Systems in One- and Two- Family Dwellings and Manufactured Homes.”

D. Underground water pressure service as defined by NFPA 24.

E. Air plenums per the requirements of UL 1887, as defined by NFPA 90A, the International Mechanical Code and the Uniform Mechanical Code.

F. BlazeMaster® pipe and fittings shall be permitted to protect ordinary hazard rooms of otherwise light hazard occupancies where the room does not exceed 400 square feet (i.e. Laundry room) as defined in NFPA 13 and NFPA 13.

PART 2 - PRODUCTS

2.0 MATERIALS

CPVC fire sprinkler pipe and fittings shall be extruded/molded from BlazeMaster® CPVC compounds manufactured by Lubrizol Advanced Materials.

2.1 MANUFACTURERS

Georg Fischer Harvel, LLC.	**NIBCO INC.**	**Tyco Fire Protection Products**	**The Viking Corporation**	**IPEX INC.**
(PIPE)	***(FITTINGS)***	***(PIPE & FITTINGS)***	***(PIPE)***	***(PIPE & FITTINGS)***
300 Kuebler Rd Easton, PA 18040	Middlebury Street Elkhart, IN 46516	1400 Pennbrook Pkwy, Lansdale, PA 19446	210 N. Industrial Pkwy Dr. Hastings, MI 49058	1425 North Service Road E., unit 3, Oakville, L6H 1A7
Phone: (610) 252-7355	Phone: (574) 295-3000	Phone: (215) 3620700	Phone: (269) 9459501	Phone: (800) 4639572

PART 3 – EXECUTION

3.0 SYSTEM DESIGN

A. System design shall be in accordance with standard industry practices and standards for fire sprinkler systems and the manufacturer's design/installation instructions. The design shall take into consideration the pressure and flow requirements, friction loss, operating temperatures, support spacing, joining methods, and thermal expansion and contraction.

B. The fire sprinkler piping system shall be hydraulically calculated using a Hazen-Williams C Factor of 150, and designed in accordance with the Standard for Installation of Sprinkler Systems (NFPA 13), the Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies (NFPA 13R) or the Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes (NFPA 13D).

C. The maximum design temperature/pressure rating shall not exceed 175 psi at 150°F.

3.1 INSTALLATION PROCEDURES

A. Installation practices such as pipe support spacing, bracing, allowance for thermal expansion/contraction, solvent welding and handling and storage shall be in accordance with the manufacturer's instructions and the UL Listing which includes installation limitations.

B. Refer to 3.2 below for submittal of installer training documentation.

3.2 QUALITY ASSURANCE

Installer Qualifications:

Fire Sprinkler Contractor must submit to the Contracting Officer documentation that verifies personnel assigned to this project prior to beginning construction who have successfully completed formal CPVC fire sprinkler systems training conducted by an authorized BlazeMaster® fire sprinkler systems trainer. The Contractor Training documentation shall be specific to BlazeMaster® pipe and fittings. Personnel's training documentation must be current and have been updated within the past two (2) years. (Note: this training does not imply compliance with any local or state contractor certification or licensing laws.)

3.3 TECHNICAL DATA

A. APPLICABLE STANDARDS

1. NSF/ANSI Standard 14 Plastic Piping Components and Related Materials.
2. NSF/ANSI Standard 61 Drinking Water System Components – Health Effects.
3. ASTM D1784 Specification for Rigid Poly(Vinyl Chloride)(PVC) Compounds and Chlorinated Poly(Vinyl Chloride)(CPVC) Compounds.
4. ASTM F402 Practice for Safe Handling of Solvent Cements, Primers and Cleaners Used for Joining Thermoplastics Pipe and Fittings.
5. ASTM F437 Specification for Threaded Chlorinated Poly(Vinyl Chloride) CPVC Plastic Pipe Fittings, Schedule 80.

6. ASTM F438 Specification Socket-Type Chlorinated Poly(Vinyl Chloride) CPVC Plastic Pipe Fittings, Schedule 40.
7. ASTM F439 Specification Socket-Type Chlorinated Poly(Vinyl Chloride) CPVC Plastic Pipe Fittings, Schedule 80.
8. ASTM F442 Specification Chlorinated Poly (Vinyl Chloride) CPVC Plastic Pipe (SDR-PR).
9. ASTM F493 Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) CPVC Plastic Pipe and Fittings.
10. NFPA 13 Standard for the Installation of Sprinkler Systems.
11. NFPA 24 Installation of Private Fire Service Mains and Their Appurtenances.
12. NFPA 25 Standard for the Inspection, Testing and Maintenance of Water Based Extinguishing Systems.
13. NFPA 13R Standard for the Installation of Sprinklers in Residential Occupancies up to Four Stories in Height.
14. NFPA 13D Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings.
15. NFPA 90A Standard for the Installation of Air Conditioning and Ventilating Systems.
16. UL 1887 Fire Test of Plastic Sprinkler Pipe for Flame and Smoke Characterization.
17. UL 1821 Outline of Proposed Investigation for Thermoplastic Sprinkler Pipe and Fittings for Fire Protection Service.
18. Piping compound has a 180ºF Hydrostatic Design Basis (HDB) of 1250 psi as listed by the Plastic Pipe Institute.
19. Fitting compound has a 180ºF Hydrostatic Design Basis (HDB) of 1000 psi as listed by the Plastic Pipe Institute.

B. APPLICABLE CODES

1. ICC, International Building, Mechanical and Plumbing Codes.
2. IAPMO, Uniform Mechanical and Plumbing Codes.
3. NBC, National Building Code of Canada.

3.4 TESTING

After the system is installed and solvent-welded joints have cured per the manufacturer's installation instructions, the system shall be hydrostatically tested per the manufacturer's installation instructions and the requirements of the applicable NFPA Standard (NFPA 13, 13R or 13D) and per the local Codes/Rules/Regulations for the jurisdiction installed in.

Maintenance shall be in accordance with the Standard for Inspection, Testing and Maintenance of Water Based Extinguishing Systems as defined by NFPA 25.

3.5 WARRANTY

Consult the manufacturer for specific warranty information.