

Quantum AMC® 8590-12CFH

Sheet Molding Compound

PRODUCT DESCRIPTION

Carbon Fiber and E-glass reinforced hybrid vinyl ester molding compound

GENERAL

Material Status	• Commercial: Active		
Availability	• North America	• Europe	• Asia Pacific
Filler/Reinforcement	• 12K PAN Carbon Fiber • E-glass Fiber	• Nominal 21% w/w • Nominal 30% w/w	• Nominal 1" (25 mm) Length • Nominal 1" (25 mm) Length
Features	• Fatigue resistance • High strength	• High stiffness • Shelf Life 2 months @ 75°F	• Black or Natural Color
Processing Method	• AMC® 8590 can be molded at temperatures in the range of 260-310°F, with 280°F suggested as a starting point. Cure times will be dependent on molding temperature and part thickness and will typically be 3-5 minutes. Detailed molding suggestions are available on request. Cool molded parts at ambient temperature. A cooling fixture may be needed depending on part thickness and geometry. Matched metal die molds.		
Resin	• VE Hybrid Composite		

PHYSICAL

	Typical	Unit	Test Method
Density	1.57	g/cm ³	ASTM D792
Shrinkage	<0.001	in/in	cold mold to cold part
CLTE, X-Y plane	18	ppm/°C	ASTM E831
CLTE, Z plane	55	ppm/°C	ASTM E831
Poisson's Ratio	0.30	psi (MPa)	ASTM D638

MECHANICAL (Machined)

	Typical	Unit	Test Method
Tensile Modulus	3.1E+6 (21,300)	psi (MPa)	ASTM D3039
Tensile Stress (Break)	26,000 (179)	psi (MPa)	ASTM D3039
Flexural Modulus	2.5E+6 (17,200)	psi (MPa)	ASTM D790
Flexural Stress (Break)	51,000 (352)	psi (MPa)	ASTM D790
Short Beam Shear	7,000 (48.3)	psi (MPa)	ASTM D2344

Machined Properties are determined using specimen machined from molded 12"x12" panels with 80% mold coverage, 1000 psi pressure, 280-300°F mold temperature for 3-5 minutes

Quantum AMC[®] 8590-12CFH

Sheet Molding Compound

MECHANICAL (As molded)	Typical	Unit	Test Method
Tensile Modulus	5.0E+6 (34,500)	psi (GPa)	ASTM D638
Tensile Strength	40,000 (276)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	3.4E+6 (23,400)	psi (GPa)	ASTM D790
Flexural Strength	70,000 (483)	psi (MPa)	ASTM D790
IMPACT			
Izod Notched Impact Strength	26 (1338)	ft-lb/in (J/m)	ASTM D256
THERMAL			
Glass Transition T _i , TanDelta	142	(°C)	ASTM D7028
Glass Transition T _g , Storage Modulus	118	(°C)	ASTM D7028

For additional information, please contact:

A. Schulman Inc., Engineered Composites
Quantum Composites, Inc.
1310 South Valley Center Drive
Bay City, MI 48604
p: 989-922-3863
f: 989-922-3915
www.aschulman.com

The information and recommendations contained in this document are based upon data collected by A. Schulman and are believed to be reliable; however, because A. Schulman cannot anticipate or control the many different conditions under which this information and/or product may be used, no representation is made and no warranty is given of any kind, express or implied, for completeness, accuracy, availability, suitability, usefulness, commercial value, or non-violation of intellectual property rights of information, recommendation, and products and services directly or indirectly provided. A. Schulman assumes no responsibility for the results of the use of products and processes described herein and expressly disclaims the implied warranties of merchantability and fitness for a particular use.