

# Quantum AMC® 8590-12CFH

## Sheet Molding Compound

### PRODUCT DESCRIPTION

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

#### GENERAL

<b>Material Status</b>	• Commercial: Active		
<b>Availability</b>	• North America	• Europe	• Asia Pacific
<b>Filler/Reinforcement</b>	• 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
<b>Features</b>	• Fatigue resistance • High strength	• High stiffness • Shelf Life 2 months @ 75°F	• Black or Natural Color
<b>Processing Method</b>	• <b>AMC® 8590</b> 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.		
<b>Resin</b>	• VE Hybrid Composite		

#### PHYSICAL

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

#### MECHANICAL (Machined)

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

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## Sheet Molding Compound

<b>MECHANICAL (As molded)</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Modulus	5.0E+6 (34,500)	psi (MPa)	ASTM D638
Tensile Strength	40,000 (276)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	3.4E+6 (23,400)	psi (MPa)	ASTM D790
Flexural Strength	70,000 (483)	psi (MPa)	ASTM D790

  

<b>IMPACT</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Izod Notched Impact Strength	26 (1338)	ft-lb/in (J/m)	ASTM D256

  

<b>THERMAL</b>	<b>Typical</b>	<b>Unit</b>	<b>Test Method</b>
Glass Transition T <sub>i</sub> , TanDelta	142	(°C)	ASTM D7028
Glass Transition T <sub>g</sub> , Storage Modulus	118	(°C)	ASTM D7028

For additional information, please contact:

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