

Quantum AMC[®] 2593

Sheet Molding Compound

PRODUCT DESCRIPTION

Carbon Fiber reinforced phenolic molding compound

GENERAL

Material Status	• Commercial: Active		
Availability	• North America	• Europe	• Asia Pacific
Filler/Reinforcement	• 3K PAN Carbon Fiber	• Nominal 45% w/w	• Nominal 1" (25 mm) Length
Features	• Fatigue resistance • High strength	• High stiffness • Shelf Life 6 months @ 10°F or below	• Natural Color
Processing Method	• AMC[®] 2593 can be molded at temperatures in the range of 260-320°F, with 300°F suggested as a starting point. Cure times will be dependent on molding temperature and part thickness and will typically be 10 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	• Phenolic Composite		

PHYSICAL	Typical	Unit	Test Method
Density	1.55	g/cm ³	ASTM D792
Shrinkage	<0.0015	in/in	cold mold to cold part
CLTE, X-Y plane		ppm/°C	ASTM E831
CLTE, Z plane		ppm/°C	ASTM E831
Poisson's Ratio	0.33		ASTM D638

MECHANICAL (Machined)	Typical	Unit	Test Method
Tensile Modulus	5.1E+6 (35,200)	psi (MPa)	ASTM D3039
Tensile Stress (Break)	24,000 (165)	psi (MPa)	ASTM D3039
Flexural Modulus	4.2E+6 (29,000)	psi (MPa)	ASTM D790
Flexural Stress (Break)	56,000 (386)	psi (MPa)	ASTM D790
Short Beam Shear	3,500 (24.1)	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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MECHANICAL (As molded)	Typical	Unit	Test Method
Tensile Modulus	9.0E+6 (62,100)	psi (MPa)	ASTM D638
Tensile Strength	36,000 (248)	psi (MPa)	ASTM D638
Flexural Modulus (RT)	6.5E+6 (44,800)	psi (MPa)	ASTM D790
Flexural Strength	72,000 (496)	psi (MPa)	ASTM D790

IMPACT	Typical	Unit	Test Method
Izod Notched Impact Strength	24 (1281)	ft-lb/in (J/m)	ASTM D256

THERMAL	Typical	Unit	Test Method
Glass Transition T _i , TanDelta	251	(°C)	ASTM D7028
Glass Transition T _g , Storage Modulus	200	(°C)	ASTM D7028

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