

Product Data Sheet

AMC™ 8590 BK

Engineered Structural Composite (ESC) Molding Compound

AMC™ 8590 BK is a vinyl ester, chopped carbon fiber reinforced ESC molding compound. It is easily moldable and provides parts that are high strength, fatigue resistant, with high heat resistance and a low density. The carbon fiber is PAN based 12K tow.

TYPICAL PROPERTIES – UNCURED

Form and Color Sheet, Black Fiber Length Nominal 1.0 inch
Carbon Fiber Content Nominal 53% Shelf Life: @ 75°F 2 months

TYPICAL PROPERTIES -- CURED

<u>Test</u>	<u>Procedure</u>	<u>Value</u>
Specific Gravity	ASTM D-792	1.48
Molding Shrinkage, inch/inch (mm/mm)	ASTM D-955	<0.000 (<0.000)
Flexural Strength, psi (MPa) ¹	ASTM D-790	88,000 (606)
Flexural Modulus, psi (GPa) ¹	ASTM D-790	5.6 x10 ⁶ (38.5)
Tensile Strength, psi (MPa) ¹	ASTM D-638	41,000 (282)
Tensile Modulus, psi (GPa) ¹	ASTM D-638	8.0x10 ⁶ (55)
Compression Strength, psi (MPa)	ASTM D-695	41,500 (286)
Compression Modulus, psi (GPa)	ASTM D-695	4.9x10 ⁶ (33.8)
Poisson's Ratio	ASTM D-638	0.305
Heat Deflection Temp. °F (°C)	ASTM D-648	>550 (287)
Glass Transition Temp. °F (°C)	ASTM D-4065	245 (118)

Molding Suggestions – AMC™ 8590 BK 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 5-10 minutes. Detailed molding suggestions are available on request.

Precautions – AMC™ 8590 BK contains carbon fibers and should be handled carefully in order to minimize skin contact. Molding areas should be well ventilated to minimize exposure to fumes. Presses must be provided with local exhaust to remove vapors from work areas. If adequate ventilation is not available, a respirator approved for removing organic vapor must be used. Care must be taken to prevent contact of carbon fibers with electrical equipment.

WARRANTY – The above information is offered for your consideration, investigation, and verification. No warranty, expressed or implied, is given, nor is freedom from any patents owned by Quantum Composites® inc. or others implied. Final determination of the suitability of this material is the sole responsibility of the buyer. Contact our sales representative for assistance in developing procedures to fit individual requirements.

¹ Tensile and Flexural Properties are determined using net shape molded specimens. Values obtained on cut specimens will typically be lower.

This ESC product is generally intended to be compression molded in matched-metal die molds. Strength values may be affected by the molding process. **The values presented in this data sheet are typical values and are not to be interpreted as product specifications.**