

sheet molding compounds

> smc

Thermoset sheet molding compound (SMC) from IDI Composites International is predominantly used in compression molding — often of larger parts — where higher mechanical strengths need to be achieved. Unlike bulk molding compound (BMC), glass reinforcement is between 30% and 60% in SMC, and glass length is slightly longer — between 1/2-inch (12.7 mm) and 1-inch (25.4 mm).

SMC from IDI can be formulated in a wide variety of colors and properties. They exhibit outstanding physical, chemical and thermal characteristics, even following prolonged exposure to high temperatures and highly corrosive environments. SMC can be molded into complex shapes. Excellent mechanical properties make SMC appropriate for high-strength electrical parts, safety components, military, and various structural components. Its superior dielectric properties make it an ideal choice for large electrical enclosures as well.

Similar to BMC, SMC is a mixture of polymer resin, inert fillers, fiber reinforcement, catalysts,

pigments and stabilizers, release agents, and thickeners. Manufacture of SMC is a continuous in-line process. The material is sheathed both top and bottom with a polyethylene or nylon plastic film to prevent auto-adhesion. The paste is spread uniformly onto the bottom film. Chopped glass fibers are randomly deposited onto the paste. The top film is introduced and the sandwich is rolled into a pre-determined thickness. The sheet is allowed to mature for 48 hours before shipment.

Heat represents one of the most difficult environments for a polymer. The cross-link reaction of covalent bonds that takes place when polyester thermoset is molded gives SMC compounds a distinct structural advantage over alternative materials, such as thermoplastics, at elevated temperatures. Relaxation or creep failure is far less in a chemically reacted thermoset composite than a “cooled to form” thermoplastic material.



SMC has many beneficial properties including outstanding physical, chemical and thermal characteristics even following prolonged exposure to high temperatures and highly corrosive environments

engineered for performance

Over Forty-Five Years of Leadership in Thermoset Composites

IDI Composites International (IDI) is the premier global formulator and manufacturer of thermoset molding compounds for custom molders and OEMs. The company provides customized polyester/vinylester-based **bulk molding compounds (BMC)**, **sheet molding compounds (SMC)**, and a new line of **Structural Thermoset Compounds** that are manufactured in both sheet and bulk formats for the most demanding applications in markets such as Military & Aerospace, Transportation, Safety, Medical, Electrical, Oil & Gas, Alternative Energy, and Marine.

Headquartered in a 120,000 square foot manufacturing facility and research center in Noblesville, IN (USA), IDI has a strong presence in the international thermoset composites market. With more than 45 years of leadership experience, IDI works closely with customers to identify the optimal thermoset molding compound for each application. The company has substantial R&D resources, plus excellent chemical engineering, ISO-certified manufacturing, and comprehensive quality control.

To support a growing customer base worldwide, the company operates multiple, wholly owned manufacturing facilities in North America, Puerto Rico, the UK, France, and China.



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