

agriculture market



agriculture

To meet the demanding requirements of the agricultural market, equipment designers and manufacturers in growing numbers are switching from metals to thermoset composite materials. Today, thermoset bulk molding compound (BMC) and sheet molding compound (SMC) are used to make a variety of products used in the agricultural industry. For example, SMC is commonly chosen for the body panels on agricultural vehicles. In addition, thermoset composites are often the choice for engine components, control panels, sprinkler systems, seed plates for planters, and fertilizer container covers.

Consisting of fiber reinforcement in a polymer resin, BMC and SMC are becoming popular in the agricultural market in part because of their relatively low cost and low maintenance requirements.

Other key reasons that make thermoset composites ideal for agricultural applications include:

- **Endurance in harsh environments:** Offering excellent resistance to corrosion and UV deterioration, thermoset composites can withstand extended exposure to the elements, which is crucial in all types of agricultural applications.
- **An edge over metal:** Thanks to the high strength-to-weight ratio of thermoset composites, BMC and SMC components are up to 35 percent lighter than steel parts of equal strength. These fiberglass-filled materials are also more effective than metal at dampening sound when chosen for roof panels and other components of cabs in agricultural vehicles. In addition, thermoset composites can be molded into more intricate designs than stamped metal parts.
- **Aesthetic appeal:** BMC and SMC offer outstanding paintability or can have molded-in color for agricultural equipment.

engineered for performance

Property	Unit	Test Method	48-50	46-16	A-205	C-206
Physical and Mechanical Properties						
Impact Strength	FT-LBS/IN	ASTM D 256	4-5	14	15	20
Flexural Strength	PSI	ASTM D 790	14-16,000	18,000	28,000	33,000
Flexural Modulus	10 ⁶ PSI	ASTM D 790	2.0	--	1.8	2.0
Tensile Strength	PSI	ASTM D 638	6,000	8,000	13,000	14,000
Compressive Strength	PSI	ASTM D 695	24,000	26,000	28,000	30,000
Water Absorption	%	ASTM D 570	0.11	0.15	0.10	0.09
Specific Gravity	G/CM ³	ASTM D 792	1.93	1.80	1.78	1.70
Shrinkage	IN/IN	ASTM D 955	0.001-0.003	--	0.001	0.001
Hardness	Barcol	ASTM D 2583	40-50	45-55	35-45	40-50
Bulk Factor App.	--	ASTM D 1895	1	1	1	1
Electrical Properties						
Dielectric Strength	KV/IN	ASTM D 149	320	290	380	390
Arc Resistance	Seconds	ASTM D 495	190	187	--	--
Thermal and Flame Retardant Properties						
Heat Deflection Temperature @264PSI	°F	ASTM D 648	>500	>500	>500	>500
Flame Resistance	--	UL 94	--	--	--	--
	@1/16"	--	94V-0	--	94-HB	94-HB
	@1/8"	--	94V-0	--	94-HB	94-HB
	@1/4"	--	94V-0	--	94-HB	94-HB

IDI Composites International 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) and sheet molding compounds (SMC) for the world's most demanding markets, including automotive/truck, electrical, food service, alternate energy, and appliance.

Headquartered in a 200,000 square foot facility in Noblesville, IN (USA), IDI has a strong presence in the international thermoset composites market. To support a growing customer base world-wide, the company operates multiple wholly-owned manufacturing facilities in Europe, Asia, and The Americas.

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