

# w a s t e w a t e r   m a r k e t



## wastewater treatment

Many manufacturers in the wastewater industry have made the switch from aluminum and other metals to thermoset composite materials. Consisting of fiber reinforcement in a polymer resin, thermoset bulk molding compound (BMC) and sheet molding compound (SMC) are well suited to meet the unique needs of the wastewater treatment market. For components such as lids, weir plates, control valves, plumbing flanges, and covers for tanks and manholes, BMC and SMC have proven to be effective replacements for metals in the most demanding wastewater environments.

What factors give BMC and SMC the decisive edge in wastewater applications?

- **Thermoset properties:** BMC and SMC feature cross-linked molecules that provide the structural rigidity required by many components in wastewater systems. In addition, thermosets offer excellent corrosion resistance, which is crucial for components exposed to water and other corrosive substances for long periods of time.
- **Economic benefits:** Many products in the wastewater market are made of die-cast aluminum that must be machined and welded into required shapes. By using BMC and SMC, manufacturers can mold complex parts in a single step, which shortens both design and production time. In addition, BMC and SMC are relatively low-cost materials that require little or no maintenance in wastewater applications.
- **Custom formulations:** Manufacturers and molders can request custom thermoset formulations to meet the unique requirements of specific applications. For example, suppliers of BMC and SMC can develop special versions of their materials to help components withstand exposure to corrosive chemicals or harmful UV rays.

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Property	Unit	Test Method	C-105	M-106	E-205	M-209
<b>Physical and Mechanical Properties</b>						
Impact Strength	FT-LBS/IN	ASTM D 256	10	10	15	23
Flexural Strength	PSI	ASTM D 790	22,000	28,000	16,000	38,000
Flexural Modulus	10 <sup>6</sup> PSI	ASTM D 790	1.8	1.7	1.8	2.0
Tensile Strength	PSI	ASTM D 638	10,000	14,000	14,000	19,000
Compressive Strength	PSI	ASTM D 695	27,000	28,000	30,000	36,000
Water Absorption	%	ASTM D 570	0.07	0.12	0.11	0.15
Specific Gravity	G/CM <sup>3</sup>	ASTM D 792	1.90	1.78	1.75	1.62
Shrinkage	IN/IN	ASTM D 955	0.002	0.001	0.001	0.001
Hardness	Barcol	ASTM D 2583	30-40	--	--	45-55
Bulk Factor App.	--	ASTM D 1895	1	1	1	1
<b>Electrical Properties</b>						
Dielectric Strength	KV/IN	ASTM D 149	--	260	160	300
Arc Resistance	Seconds	ASTM D 495	--	--	130	--
<b>Thermal and Flame Retardant Properties</b>						
Heat Deflection Temperature @264PSI	°F	ASTM D 648	--	>450	>500	>500
Flame Resistance	--	UL 94	--	--	--	--
	@1/16"	--	94-HB	94-HB	94V-0	94-HB
	@1/8"	--	94-HB	94V-2	94V-0	94-HB
	@1/4"	--	94-HB	94V-0	94V-0	94V-0

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.

[www.idicomposites.com](http://www.idicomposites.com)

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