



audio market

> audio

Manufacturers in the commercial audio market need high-performance materials for both residential and commercial speaker systems. The challenge is to streamline manufacturing to ensure accurate sound reproduction, boost aesthetic appeal, and, in some cases, survive long periods of exposure to harsh conditions.

In many cases, however, these requirements are not met by conventional metal and wood housings. Many manufacturers in the audio industry are switching to thermoset composite bulk molding compound (BMC). Consisting of fiber reinforcement in a polymer resin, BMC provides excellent performance properties and a pleasing appearance that helps attract potential buyers.

BMC also offers a number of key advantages to makers of audio equipment:

- **Easier manufacturing:** Back-panel electrical connections can be molded into speaker housings, eliminating secondary operations. As a result, all design intricacies can be incorporated into one molded piece that is UL-approved.
- **An edge over wood:** Like other thermoset composites, BMC features cross-linked molecules that provide the superior structural rigidity necessary to banish “boom,” the industry term for resonance and movement of speaker sidewalls that distorts sound. Boom is a notorious problem for traditional wood assemblies, which are also usually more expensive and labor intensive to produce than those made from BMC.
- **Endurance in outdoor environments:** Unlike metal, which is highly susceptible to deterioration, BMC offers excellent UV, moisture, and corrosion resistance, thereby lengthening the life of outdoor speakers.

engineered for performance

Property	Unit	Test Method	44-10	46-12	M-204	E-206
Physical and Mechanical Properties						
Impact Strength	FT-LBS/IN	ASTM D 256	4-5	8-10	10	16
Flexural Strength	PSI	ASTM D 790	15-17,000	19-22,000	24,000	30,000
Flexural Modulus	10 ⁶ PSI	ASTM D 790	--	--	1.7	2.0
Tensile Strength	PSI	ASTM D 638	6,000	7-9,000	11,000	16,000
Compressive Strength	PSI	ASTM D 695	21,000	23,000	26,000	32,000
Water Absorption	%	ASTM D 570	0.15	0.15	0.10	0.13
Specific Gravity	G/CM ³	ASTM D 792	1.96	1.78	1.81	1.72
Shrinkage	IN/IN	ASTM D 955	0.001-0.003	0.001-0.003	0.001	0.001
Hardness	Barcol	ASTM D 2583	40-50	30-50	--	40-45
Bulk Factor App.	--	ASTM D 1895	1	1	1	1
Electrical Properties						
Dielectric Strength	KV/IN	ASTM D 149	--	290	340	340
Arc Resistance	Seconds	ASTM D 495	180+	180+	--	180+
Thermal and Flame Retardant Properties						
Heat Deflection Temperature @264PSI	°F	ASTM D 648	>500	>500	>500	>500
Flame Resistance	--	UL 94	--	--	--	--
	@1/16"	--	94-HB	V-0	HB	94V-0
	@1/8"	--	94-5V	V-0	HB	94V-0
	@1/4"	--	94-5V	V-0	V-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.

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