BAYBLEND®

Product Data

BAYBLEND® MTR Sheet

Mass Transportation Rail Low FST

BAYBLEND MTR Sheet is an opaque, flame retardant polycarbonate blend. It offers a unique combination of flammability characteristics, robust mechanical properties, and ease of fabrication. BAYBLEND MTR complies with the flammability and smoke emission requirements for transit materials established by the US Federal Railroad Administration, listed in DOT: 49 CFR 238, Appendix B, and meets the criteria in the Bombardier Transportation Standard SMP 800-C for Toxic Gas Generation.

BAYBLEND MTR has a lower specific gravity, coupled with higher stiffness, strength and toughness compared to typical non-metallic materials used for mass transportation interior components. This allows for design of thinner and lighter parts, not requiring secondary reinforcement or stiffeners after fabrication. BAYBLEND MTR is resistant to a variety of commercially available cleaners. It can be laminated with protective and decorative films, and is available in multiple textures and colors.

Applications

Thermoformed rail interior parts such as structural seating components, wall cladding, window reveals and ceiling panels

Typical Properties

Properties	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D792	-	1.3
Moisture Absorption, 24 hrs	ASTM D570	%	0.1
MECHANICAL			
Tensile Strength, Yield	ASTM D638	psi	8,000
Tensile Elongation	ASTM D638	%	20
Tensile Modulus	ASTM D638	psi	575,000
Izod Impact Strength, Notched @ 0.125"	ASTM D256	ft-lbs/in	1.4
Instrumented Impact @ 0.125"	ASTM D3763	ft-lbs	16
Rockwell Hardness	ASTM D785	-	M53/R115
THERMAL			
Coefficient of Thermal Expansion	ASTM D696	in/in/ºF	2.60×10^{-5}
Heat Deflection Temperature @ 66 psi	ASTM D648	ºF	221
Heat Deflection Temperature @ 264 psi	ASTM D648	ºF	206
Vicat Softening Temperature	ASTM D1525	ºF	226
ELECTRICAL			
Dielectric Constant	ASTM D150	-	3.1
Volume Resistivity	ASTM D257	Ohm-cm	5×10^{15}
Dissipation Factor	ASTM D150	-	0.005
Dielectric Strength	ASTM D149	V/mil	500
FLAMMABILITY			
Smoke Density, 4 min	ASTM E662	-	50
Flame Spread Index	ASTM E162	-	15
Burning Dripping	ASTM E162		None
Bombardier Toxic Gas Generation	SMP 800-C	-	Pass
Boeing Toxic Gas Generation	BSS7239	-	Pass

Regulatory Code Compliance and Certifications

Complies with requirements of Department of Transportation, Federal Railroad Administration: 49 CFR 238, Appendix B

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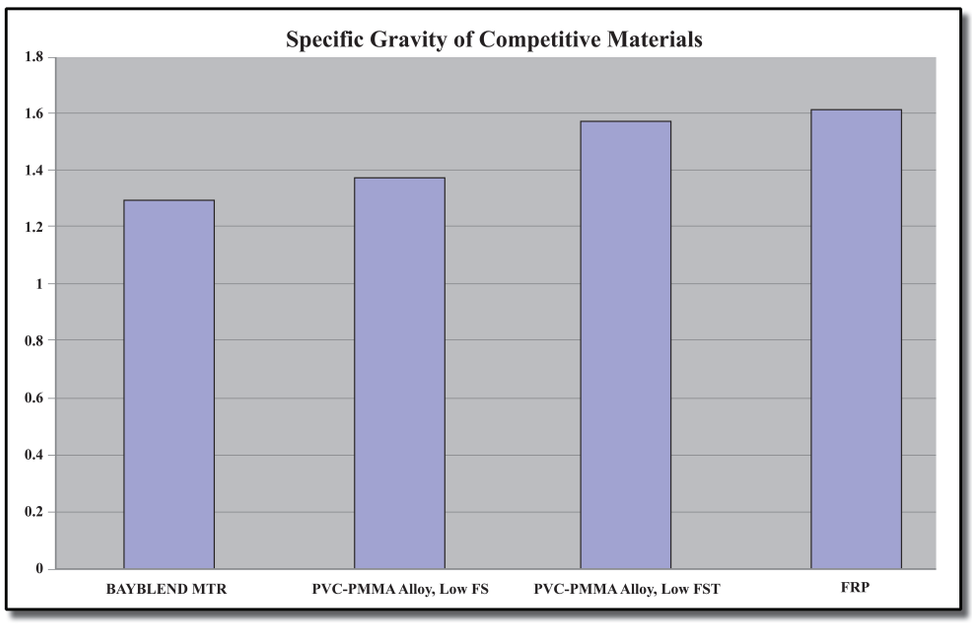
Weight Savings

BAYBLEND MTR has a lower specific gravity and higher stiffness than typical non-metallic materials used for mass transportation interior components. This unique property profile can provide over 30% weight savings for components designed for specific stiffness when compared with other materials as shown below.



Thermoforming

BAYBLEND MTR can be thermoformed using conventional tooling and processes for thermoplastic materials such as PVC alloys, ABS and polycarbonate. Optimal results can be obtained with fluid-heated aluminum tooling. Suggested tooling temperatures are 125°F – 205°F. Depending on geometry BAYBLEND MTR parts can be formed with and without vacuum-assist and plug-assist. Textures can be achieved via in mold texturing or through retention of texture as supplied using vaccum-forming. Recommended sheet temperature for thermoforming is 350°F – 440°F. For best results, BAYBLEND MTR should be pre-dried in a dessicated hot-air circulating oven at 180°F from 8 to 24 hours depending upon sheet thickness.

Secondary Operations

BAYBLEND MTR can be cut and drilled with standard saws and tooling. Finished parts can be assembled using conventional mechanical fastening techniques or by gluing or welding. BAYBLEND MTR can be painted and printed using standard paints and inks that are suitable for polycarbonate. No surface pre-treatment is necessary.

BAY MTR 0209

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