

Mass Transportation Rail Low FST, High Performance

BAYBLEND MTR-HP1 Sheet is a high performance product extension of BAYBLEND MTR Sheet. This product is an opaque, flame retardant sheet produced from a polycarbonate blend, offering a unique combination of flammability characteristics, robust mechanical properties, and ease of fabrication. BAYBLEND MTR-HP1 also provides resistance to scratching, cleaning chemicals, foodstuffs and graffiti when compared to other thermoplastic materials used in mass transportation applications. BAYBLEND MTR-HP1 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-HP1 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-HP1 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/°F	2.60 x 10 ⁻⁵
Heat Deflection Temperature @ 66 psi	ASTM D648	°F	221
Heat Deflection Temperature @ 264 psi	ASTM D648	°F	206
Vicat Softening Temperature	ASTM D1525	°F	226
ELECTRICAL			
Dielectric Constant	ASTM D150	-	3.1
Volume Resistivity	ASTM D257	Ohm-cm	5 x 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

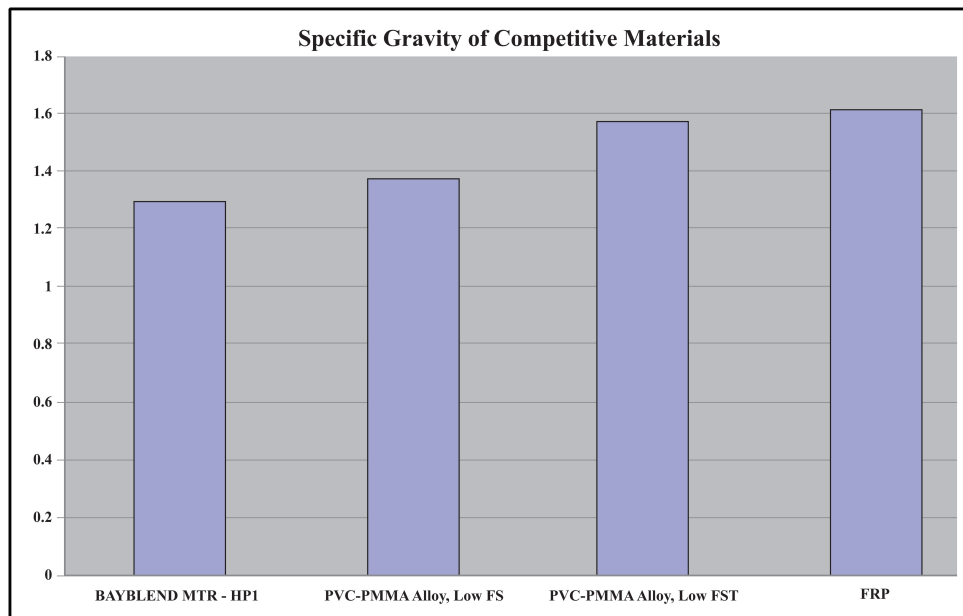
Complies with requirements of Department of Transportation, Federal Railroad Administration: 49 CFR 238, Appendix B

Product Data

BAYBLEND® MTR-HP1 Sheet

Weight Savings

BAYBLEND MTR-HP1 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-HP1 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-HP1 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 vacuum-forming. Recommended sheet temperature for thermoforming is 350°F – 440°F. For best results, BAYBLEND MTR-HP1 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-HP1 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.

Disclaimer

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.



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