TECHNICAL GUIDE

Resin Material Comparison

MATERIAL	ASTM TEST METHOD	ACRYLIC	PETG
Physical Properties			
Specific Gravity	D-792	1.19	1.27
Optical Refractive Index	D-542	1.49	1.57
Total Light Transmittance	D-1003	92%	91%
Haze Light Transmittance	D-1003	2%	<1%
Sound Transmission[1/8"(3mm)]	E-90	27db	25db
Water Absorption	D-570	0.40%	0.20%
Mechanical Properties			
Tensile Strenght	D-638	11,000 psi (76.1 Mpa)	7,700 psi (53 Mpa
Tensile Elongation Max	D-638	5.80%	4.80%
Tensile Modulus	D-638	490,000 psi (3378 Mpa)	320,000 psi (2200 Mpa)
Flexural Strenght Max	D7-90	17,000 psi (117.2 Mpa)	11,200 psi (77 Mpa)
Flexural Modulus	D7-90	49,000 psi 3378 Mpa	310,000 psi (2100 Mpa)
Izod Impact Strenght -Milled Notch room temp	D-256	0.28 ft-lb/in (14.9 J/m)	1.7 ft-lb/in (88 J/m)
Rockwell Hardness	D-785	M-95	115
Water Absorption (24hr Immersion)		0.40%	0.20%
Impact Resistance Notched*		0.28 ft-lbs/in (14.9 J/m)	1.7 ft-lbs/in (88 J/m)
THERMAL PROPERTIES			
Maximum Continous Service Temperature		170-190? F (77-88?C)	150? (66? C)
Softening Temperature		210-220? F (99-104?C)	181? (83? C)
Deflection Temperature Service Temperature	D-648	203? F (95? C)	164?F (74? C)
Coefficient of Thermal Expansion	D-696	3.0x10e-5in(in-?F) 5.4x10e-5m(m-?C)	5.0x10e-5in(in-?F) 9.0x10e-5m(m-?C)
Thermal Conductivity	C-177	0.90 btu-in/(hr-ft²-?F) (.0013 w/(cm-?C)	1.67 btu-in/(hr-ft²-?F) (.0024 w/cm-?C)
FLAMMIBILITY PROPERTIES			
Fire Rating	D635-03	PASS CC2	PASS CC1
Smoke Density	D2843-99	Pass, 4.8% (75% max)	
Rate of Ignition	D1929-96	Pass, 716°F (380°C)	Pass, 56.6% (75% max)
		[min 650°F (343°C)]	[min 650°F (343°C)]
OPTICAL/AUDIO PROPERTIES			
UV Stability*		Excellent	Fair
Light Transmittance*		92%	91%
Optical Refractive Index		1.49	1.57

NOTE- The data provided pertains to the base raw material only as used in the manufacture of Joel Berman Glass Studios International Ltd.'s material. These Suggestions and data are based on information we believe to be reliable. The data is offered in good faith, but without guarantee, as conditions and method of use are beyond our control. We recommend prospective users determine the suitability of Joel Berman materials and suggestions before adopting on a commercial scale. In no case is Joel Berman Glass Studios International Ltd. liable for direct, consequential, economic or other damages. Joel Berman Glass Studios International Ltd. disclaims all other warranties, expressed or implied, including the warranty of merchantability and fitness for a particular purpose. Joel Berman Glass Studios International Ltd. does not recommend using its products to support human loads.

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