

Property Value Comparison for Mass Transit Materials

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Introduction

KYDEX® 6200 LTR is the next generation in our line of high performance thermoplastic sheet products for the mass transit industries. It is a cost effective alternative to FRP due to its greater ease of fabrication. This product meets the recommended fire safety practices of both the Federal Transit Administration (FTA) and the Federal Rail Administration (FRA) for smoke emission and flammability when tested as per ASTM E-662 and ASTM E-162.

Applications

With its excellent formability and fabrication qualities, KYDEX® 6200 LTR is specifically designed for rail and bus interiors. Easy trimming and tight tolerances allow for superior definition in parts such as seatbacks, window reveals, bulkhead components and ceiling components.

KYDEX, LLC

ISO 9001 and 14001 Certified

Customer Service

6685 Low St, Bloomsburg, PA 17815 USA

Phone: 800.325.3133, +1.570.389.5810

Outside the US: +1.570.389.5814

Fax: 800.452.0155, +1.570.387.7786

Email: info@kydex.com

Technical Service

Phone: 800.682.8758

Fax: +1.570.387.8722

Outside the US: +1.570.387.6997

Email: techservice@kydex.com

www.kydex.com

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Comparison Chart

Property	Test Method	Units Metric (Standard)	GRP ₃ (25-45%)	KYDEX® 6200 LTR	Ultem 1668A	Bayblend 3030	Bayloy 10 FR	Bayblend MTR
PHYSICAL								
Specific Gravity	ASTM D792	-	1.40-1.90	1.58	1.26-1.33	1.18	1.20	1.30
Density		g/cm ³ (lb/in ³)	1.40-1.90 (0.0506 - 0.0686)	0.0571 (1.58)	1.26-1.33 (0.0455-0.0481)	1.18 (0.0426)	1.20 (0.0434)	1.30 (0.0470)
Rockwell Hardness	ASTM D-785	-	-	78 (R Scale)	-	122 (R Scale)		
Water Absorptions 24hrs	ASTM D-570	%-24hrs	-	0.18	0.70	0.50	0.35	0.35
MECHANICAL								
Tensile Strength	ASTM D-638	MPa (psi)	76-160 (11-23,000)	23.4 (3,390)	90.4 (13,000)	69 (10,000)	60 (8,710)	63 (9,150)
Tensile Modulus	ASTM D-638	MPa (psi)	5,600-12,000 (820-1,800K)	2261 (328)	2312 (335)	2,700 (392)	2400 (348)	3800 (551)
Tensile Elongation at Break	ASTM D-638	%	1-2	3.2	35	50	70	20
Flexural Strength	ASTM D-790	MPa (psi)	140-260 (20-38,000)	42.6 (6180)	141 (20,400)	100 (14,500)	-	-
Flexural Modulus	ASTM D-790	MPa (psi)	6,900-14,000 (1,000-2000)	2710 (393K)	3174 (460K)	2800 (406K)	-	-
Notched Izod Impact Resistance 23°C (73°F)	ASTM D-256	J/m (ft-lbs/in)	-	106 (2.0)	74 (1.4)	406 (7.6)	102 (1.9)	102 (1.9)
Gardner Impact	ASTM D-3029	J (in-lbs)	-	-	36 (320)	-	-	-
Gardner Impact (Geometry GE)	ASTM D-5420	J (in-lbs)	-	8.1 (72)	-	60 (540)	-	-
THERMAL								
Coefficient of Linear Thermal Expansion	ASTM D-696	m/m/°C (in/in/°F)	2.34x10 ⁻⁵ (1.35x10 ⁻⁵)	-	4.78x10 ⁻⁵ (2.65x10 ⁻⁵)	7.60x10 ⁻⁵ (4.22x10 ⁻⁵)	6.00x10 ⁻⁵ (3.33x10 ⁻⁵)	6.50x10 ⁻⁵ (3.61x10 ⁻⁵)
Heat Deflection Temperature 1.82MPa, 264psi (annealed)	ASTM D-648	°C (°F)	190-260 (375-500)	74.6 (166)	189 (373)	93.9 (201)	127 (260)	95 (203)
FLAMMABILITY								
FMVSS 302	MVSS 302	-	-	Pass	-	-	-	-
Radiant Panel, FS	ASTM E-162	-	Pass	Pass ₂	-	-	-	Pass
Smoke Generation, DS @ 4 min	ASTM E-662	-	Pass	Pass ₂	Pass	-	-	Pass
Toxicity	SMP 800-C	-	Pass	Pass ₂	Pass	-	-	-

¹ Reported values based on 3.18mm (0.125") gauge unless noted otherwise

² Tested by an accredited third-party lab

³ GRP specs vary widely according to glass% and type of fiber. They are generally fire resistant and have excellent electrical properties.

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