

EBTECH HONEYCOMB CORE (EB-HC) COMPOSITE PANEL

Ebtech Honeycomb Core (EB-HC) composite panels are comprised of a reinforced thermoplastic skin and a polypropylene honeycomb center. These panel cores are durable, lightweight, very strong, resistant and 100% environmentally friendly. EB-HC panel cores can be modified to customer specifications using Ebtech’s proprietary sandwich technologies. The composite construction of EB-HC panels reduces installation time.

EB-HC panels are available up to 4 feet wide and 50 feet long (1.219 meters by 15.24 meters). The thermoplastic skin is available with a thickness from 0.02” to 0.24” (0.5 mm to 6 mm). The honeycomb center thickness varies from ¼” to 4” (6.35 mm to 101.6 mm).

Benefits

- Extremely lightweight panels (36 lb for a 4 ft. x 8 ft. x ¾ in.)
- Excellent durability
- Resistant to fatigue, moisture, corrosion and other environmental and chemical influences
- Superior impact resistance
- Excellent thermal, acoustic and electrical insulation
- Withstands wide temperature variations, from -40°F to +212°F (-40°C to +100°C)
- Non-toxic and entirely recyclable
- No delaminating of panel cores with skin plates fused to the honeycomb center
- Easily sawed or bolted
- Rapidly installed
- No adherence of snow or ice

Properties

Physical and mechanical properties of EB-HC Panel 0.078” (2mm) skin, 0.472” (12mm) honeycomb:		
Standard	Test Type	Mean Value
ASTM C393	Flexural Strength	21755psi (150 MPa)
ASTM C297	Surface Compression	2900psi (20 MPa)
ASTM D3763-95	Multi-axial Impact	18.4 ft-lb (25 J)
	Coefficient of Thermal Expansion	6.45E-6 in/in/°C

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Properties (continued)

Physical and mechanical properties of skin material for a 0.078 in. (2 mm) thick:		
Standard	Test Type	Mean Value
	Glass Content	60%
ASTM D 638-96	Young Modulus	1885000psi (13000 Mpa)
	Tensile Strength	43500psi (300 Mpa)
	Tensile Elongation	2, 9%
ASTM D 790-96	Flexural Tangent Modulus	1740000psi (12000 Mpa)
	Flexural Strength	39875psi (275 Mpa)
ASTM 695-96 (modified)	Compressive Strength	20300psi (140 Mpa)
ASTM D 256-93	Notched Izod	29.98 ft-lb/in (1660 J/m)
ASTM D 3763-95 (4 layers)	Impact multi-axial 86.61in/sec (2.2 m/sec)	28.76 ft-lb (39 J)
	Multi-axial impact 86.61in/sec (2.2 m/sec)	31.72 ft-lb (43 J)
ASTM D 792-91	Specific Gravity	1.49
ASTM D 2240-97	Shore 'D' Hardness	77
ASTM D 3763-95	Heat Deflection	311 °F (155 °C)
ASTM G26	Ultra-violet Test	No important loss of mechanical and physical properties noted
ASTM G7-96 et ASTM G24-94	Ultra-violet Test (Onsite test in Arizona)	No important loss of mechanical and physical properties noted. Very little color change

Physical and mechanical properties of core material:		
Standard	Test Type	Mean Value
ASTM D C365	Compression	235psi (1.62 Mpa) (typical)
ASTM C273	Shear	75psi (0.517 Mpa) (typical)
ASTM C297	Flatwise Tensile	100psi (0.689 Mpa) (typical)
	Moisture	Not affected
	Thermal Insulation	R=2.5
	Chemical Resistance	Unaffected by most chemicals such as alcohols, organic and inorganic acids, alkalines, esters, and ketones