



Fibrelam® 2000

Panels for aircraft flooring

Product Data

Description

Designed for aircraft use where weight is critical, Fibrelam® 2000 structural sandwich panels utilize ultra light weight woven carbon prepreg skins bonded to high-strength aramid honeycomb to reduce weight without sacrificing performance. In addition to offering outstanding mechanical and physical properties, Fibrelam® 2000 panels are easy to install, and can be easily cut and machined on equipment normally found in airline maintenance shops. Fibrelam® 2000 panels are approved and qualified for use as flooring by major aircraft manufacturers and airlines worldwide.

Features

- Woven carbon prepreg skins bonded to aramid honeycomb core resulting in outstanding strength to weight ratios
- Weight savings over glass skin panels
- Excellent burn-through resistance
- May be supplied as finished panels with inserts and edge close out
- Offers maximum stiffness for minimum weight

Applications/Grade Designations

The following panels are available in a standard size of 3658mm x 1220mm (12ft x 4ft).

Grade 5 panels use a low density (80 kg/m³, 5 lb/ft³) honeycomb core and are used primarily for lower-traffic areas on aircraft such as under seats.

Grade 1 panels use a medium density (139 kg/m³, 9 lb/ft³) honeycomb core and are particularly suitable for high-traffic areas on aircraft such as aisles and entrance ways.



Fibrelam® 2000

Performance Data†

	Unit of Measure	Test Method	Grade 5	Grade 1
Long Beam Bending Core Ribbon, Transverse Load Deflection at 445N (100lb) Humidity Resistance (100% at 60°C (140°F) for 30 days) Load	N (lbs) mm (in)	MIL-STD-401B*	1330 (300) 12.0 (0.46)	1330 (300) 12.0 (0.44)
	N (lbs)	BSS 7250 Humidity	1270 (285)	1290 (290)
Panel Shear Strength Load Load on Splice	N (lbs) N (lbs)	MIL-STD-401B	2140 (480) 1600 (360)	3560 (800) 3220 (725)
	N/76 mm (in-lbs/3" width)	MIL-STD-401B	338 (38)	427 (48)
In-Plane Shear	N/mm (lbs/in)		57 (323)	61 (350)
Insert Shear	N (lbs)		4560 (1026)	4500 (1012)
Impact Resistance	Nm (in-lbs)		1.1 (10)	1.4 (12)
Stabilized Core Compression	N/mm ² (lb/in ²)		5.2 (750)	13.8 (2000)
Warpage	mm/m (in/ft)		<0.8 (0.01)	<0.8 (0.01)
Roller Cart Test Initial Operation Final Operation	Cycles N/wheel (lb/wheel) Cycles N/wheel (lb/wheel)	BMS 4-20	80,000 436 (98)	120,000 570 (128) 35,000 700 (158)
	Flammability 60 Second Vertical Burn: Self-Extinguish Time Burn length Drip Extinguish Time 45° Burn: Self-Extinguish Time Penetration Glow Time	sec		0
mm (in)			109 (4.3)	99 (3.9)
sec			0	0
sec			1.6	1.2
mm (in)			0	0
sec			0	0

†Data is in metric units with imperial equivalents in brackets.

*20 inch span, 4 point loading.

Aircraft Manufacturer Specifications

Boeing BMS 4-20
 Type II
 Type III

Canadair
 CES 827 GR 1
 CES 827 GR 2
 RAS-000-25

Panel Dimensions^{†*}

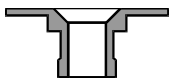
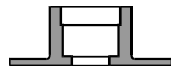
	Grade 5	Grade 1
Weight, kg/m ² (lb/ft ²) max	2.2 (0.46)	2.8 (0.58)
Overall Thickness, mm (in)	10.16 ± 0.25 (0.40 ± 0.01)	10.16 ± 0.25 (0.40 ± 0.01)
Standard Stock Length, mm (in)	3658 (144)	3658 (144)
Width, mm (in)	1220 (48)	1220 (48)

[†]Data is in metric units with imperial equivalents in brackets.
^{*}Other lengths, widths, weights, and thicknesses of core available.

Installation

Hexcel Composites can furnish panels with noncorroding, cost effective titanium inserts, with other standard inserts available as required by individual customers. Inserts and instructions on installation procedures are available from your Hexcel Composites representative.

Two-part Press Fit

Cross Section	Bolt Size	Hole Size	Panel Thickness	Aircraft Type
Clearance type, upper part - countersunk				
	10-32	5.1mm (0.201 in)	10.16mm (0.40 in)	DC-10
	10-32	5.1mm (0.201 in)	10.16mm (0.40 in)	727, 737, 747, 757, 767, 777
Clearance type, lower part				
	10-32	5.1mm (0.201 in)	10.16mm (0.40 in)	DC10, 727, 737, 747, 757, 767, 777



Handling and Safety Precautions

When fabricating from honeycomb sandwich board materials it is advisable to wear disposable clean cotton or surgical gloves throughout the entire operation. This helps to keep the panel clean, and affords protection for the operator's hands.

Avoid breathing the dust generated by cutting operations, and do not rub the eyes with hands which may be contaminated with the dust.

The usual precautions should be observed while working with synthetic resins.

Product Safety Data Sheets have been prepared for all Hexcel Composites products and are available to company safety officers on request.

Important

All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of any product for the purposes required. All sales are made subject to our standard terms of sale which include limitations on liability and other important terms.

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For More Information

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fibre
- RTM Materials
- Honeycomb Cores
- Continuous Fibre Reinforced Thermoplastics
- Carbon, glass, aramid and hybrid prepregs
- Reinforcement Fabrics
- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs

For US quotes, orders and product information call toll-free 1-800-688-7734

For other worldwide sales office telephone numbers and a full address list please go to:

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