

**Gillfab™ 4505 Panel**

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Description

Gillfab 4505 is a low smoke sandwich panel with facings of phenolic resin reinforced with woven glass cloth/unidirectional carbon bonded to a Nomex® honeycomb core.

Applications

Flooring panel for heavy duty use in passenger aisle, galley areas, and flight compartments.

Features

- All phenolic resin - low smoke emission in a fire.
- High strength and rigidity, corrosion resistant facings.
- Lightweight.
- Service temperature: to 180°F.

Specifications

- Airbus Industrie Technical Specification No. 5360 M1M 000600, Issue 3, Panel Type PC3.
- FAR 25.853: flammability: 12 and 60 second vertical test.
- ABD 0031 - Smoke density, toxicity, and flammability.

Construction

Adhesive:	Modified epoxy.
Core:	Aramid honeycomb (Nomex®).
Facings:	Woven fiberglass cloth/unidirectional carbon fiber reinforced phenolic resin; woven fibreglass on the outer facing plies prevents galvanic corrosion.

Availability

Thickness:	0.374 in (9.5 mm)
Length and Width:	Per customer specification, up to 54 X 144 in (1372 X 3658 mm)
Facing thickness, face/back:	0.020/0.020 in (0.5/0.5 mm)
Core, density, cell size:	9.0 pcf (144 kg/m ²), 3/16 in (4.8 mm)



Standard Tolerances

Thickness:	+ 0.02 in (0.5 mm), -0.01 in (0.25 mm)
Length:	-0, +0.5 in (13 mm)
Width:	-0, +0.5 in (13 mm)

Alternative Gill Products

Product Number	Difference
Gillfab 4605	Thinner facings, lighter density core. For use in seating areas.
Gillfab 4205	Panel designation originally qualified for use in passenger and flight compartments. Thicker facings, lighter density core.

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Typical Properties of Gillfab 4505

Based with 0.020"/0.020" phenolic facings and 9 lbs/ft³, 3/16 in cell size core
Applicable Specification: AI 5360 M1M 000600, Issue 3, Airbus Panel Type PC3

Physical and Mechanical Properties	Test Method	Typical Property	
Weight, psf (kg/m ²)	ASTM C 29	0.637 (3.11)	
Thickness, in (mm)	ASTM C 366	0.387 (9.8)	
Long Beam Flexural Strength Properties at room temp. Ultimate Load, lbs (N) Ribbon (L) Direction Transverse (W) Direction Deflection at 100 lbs (445 N), in (mm) Ribbon (L) Direction, in (mm) Transverse (W) Direction	ASTM C 393	435 (1,935) 490 (2,183) 0.354 (9.0) 0.350 (8.9)	
Long Beam Flexural Strength Properties after Accelerated Aging ¹ . Ultimate Load, lbs (N) Ribbon (L) Direction Transverse (W) Direction Deflection at 100 lbs (445 N), in (mm) Ribbon (L) Direction, in (mm) Transverse (W) Direction, in (mm)		390 (1,738) 413 (1,840) 0.329 (8.36) 0.320 (8.13)	
Bending Under Static Load Load at 0.67 in (17 mm) deflection, corrected* lbs (N) Load at Rupture, corrected, lbs (N)		Chapter 9.6 ²	2,047 (9,104) 6,567 (29,211)
Insert Shear Strength Load at Rupture, Room Temp., lbs (N) Load at Rupture, After Accelerated Aging ¹ , lbs (N)		Chapter 9.7 ²	2,237 (9,951) 1,923 (8,554)
Hard Point Shear ⁴ . Load at Rupture, Room Temp., lbs (N) Load at Rupture, after Accelerated Aging ¹ , lbs (N)	Chapter 9.8 ²	5,054 (22,482) 5,683 (25,279)	
In-plane Shear, lbs/in (N/mm)	Chapter 9.2 ²	660 (115)	
Indentation, Load at Permanent Deformation, lbs (N)	Chapter 9.10 ²	394 (1,752)	
Impact Strength, Mean Failure Energy, ft-lbs (N-m)	Chapter 9.9 ² & ASTM D 3029	3.5 (4.75)	
Stabilized Core Compression, psi (N/mm ²)	ASTM C 365	2,392 (16.5)	
Climbing Drum Peel Strength, lbs (N) Room Temp. After Accelerated Aging ¹	ASTM D 1781	80 (357) 62 (274)	
Food Cart Roller, cycles @ 125.7 lbs (57 kg)/wheel @ 165.3 lbs (75 kg)/wheel @ 250.0 lbs (113.4 kg)/wheel ⁷	Chapter 9.5 ² BMS 4-23, Ty II	Pass (No Damage) Pass (No Damage) No Damage	
Flammability Properties			
60 Second Vertical Extinguishing Time, sec Burn Length, in (mm) Drip Extinguishing Time, sec	AITM 2.0002A ⁶ . (Equivalent to FAR Part 25, App. F, Part 1)	2.9 0.3 (7.6) No Drips	
12 Second Vertical Extinguishing Time, sec Burn Length, in (mm) Drip Extinguishing Time, sec	AITM 2.0002B ⁶ . (Equivalent to FAR Part 25, App. F, Part 1)	0.4 0.2 (5.1) No Drips	
Smoke Emission, Flaming, 4 mins, D _s	AITM 2.0007 ⁶	18	
Toxic Gas Emission, Flaming and Non-Flaming Modes	AITM 3.0005 ⁶	Pass	

1. Accelerated Aging: 45 days at 70 °C/ 70% relative humidity.

2. Chapter numbers in "Test Method" column refer to section in Airbus Specification 5360 M1M 000600.

3. Properties after accelerated aging were used to determine a correction factor to adjust requirements for room temp. testing.

4. "Hard Point" refers to the installation of inserts for the attachment of galleys and lavatories.

5. Property level not specified by Airbus.

6. Airbus Industrie Test Methods,

7. Although not required by the Airbus specification, but to further test durability, this panel was subjected to an additional 120,000 cycles at an increased weight of 250 lbs/wheel with no damage reported.

