Gillfab™ 4101 Panel

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Description

Gillfab 4101 is a semi-structural sandwich panel, composed of aluminum skins and 5056 alloy aluminum honeycomb core.

Applications

Used in aircraft interior applications including fuel cell slosh baffle and pressure bulkheads. May also be used in construction of pleasure and racing boat hulls.

Features

- High strength-to-weight ratio.
- High bond strengths.
- High strength 5056 alloy aluminum honeycomb.
- Facings have corrosion resistant primer at bond line.
- Service temperature range: 70°F to 160°F.

Specifications

- Gates Learjet LES 1247.
- Gates Learjet LES 1277.
- FAR 25.853 and 25.855.

Construction

Adhesive:	High strength epoxy.
Core:	5056 aluminum foil honeycomb; density and cell size per customer specification.
Facings:	2024T3 aluminum, per customer call-out.
Primer	BR 127, corrosion inhibiting.

Availability

Thickness:	Per customer specification, from .125" and up.
Size:	Up 48" x 144" without splices on the core.
Facing:	Standard aluminum thickness (.01", .016", .02", .025", .03" and up in .01" multiples).

Standard Tolerances

Thickness:	±0.01"
Length:	+ 0.5", - .125"
Width:	+ 0.5", - .125"
Warpage:	<.003 L^2/t where L = length (ft.) and t = thickness (in.)

Similar Gill Products

Product Number	Difference
Gillfab 4030	5052 alloy honeycomb cores, lower bonding strengths and no primer.
Gillfab 4101Y	Same as 4101 except a special primer is applied for marine use.
Gillfab 4201	Uses 5052 alloy aluminum.

Properties of Gillfab 4101

Based on 0.5" thick panel with .02"/.02" facings and .46 thick core at 8.1 pcf

Property	Test Method	Typical Values	
		English	(Metric)
Mechanical			
Long beam flexural strength, 20" span	MIL-STD 401B		
Ultimate load, lbs (kg)		484	(220)
Facing stress, ksi (MPa)		42	(290)
Deflection at 100 lbs, in (mm)		.15	(3.81)
Sandwich peel, in-lbs (N-m)/3" width	MIL-STD 401B		
At room temperature		70	(7.91)
After 30 day water soak		63	(7.12)
Panel core shear, psi (kPa)	MIL-STD 401B		
Ribbon (L) direction		503	(3,469)
Transverse (W) direction		340	(2,345)
Flatwise compressive strength, psi (kPa)	MIL-STD 401B	1,100	(7,586)
Flatwise tensile strength, psi (kPa)	MIL-STD 401B	1,000	(6,896)
Physical			
Weight, psf (kg/m^2)		1.03	(5.04)
Impact strength, Gardner Model 11K3	ASTM D3029		
2 lbs., in-lbs (N-m), min.		40	(4.52)
Max. Service Temperature, $^oF(^oC)$		180	(82)
Thermal Conductivity,	ASTM C177		
BTU-Ft/Ft^2 .hr. ^oF(W/cm. ^oC)		11	(19)
Flammability			
60 sec. vertical exposure	FAR 25.853a		
self-extinguishing time, sec		Pass	
burn length, inches (mm)		Pass	
45 degree test	FAR 25.855		
self-extinguishing time, sec		Pass	
penetration		None	
glow time		Pass	
NBS Smoke Emission			
Ds @ 4 min., flaming		0-5	

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