

The high performance sandwich core

Divinycell F foam is a recyclable, prepreg compatible sandwich core offering excellent Fire, Smoke and Toxicity (FST) properties, good mechanicals and processing characteristics. It meets the US and European regulatory requirements for commercial aircraft interiors. Other key features include vacuum bag processing up to 220°C and matched tooling and press processing up to 220°C, exceptional fatigue life, good chemical resistance and excellent heat ageing at 180°C. Divinycell F is compatible with most common aerospace composite manufacturing processes.

Mechanical properties Divinycell® F

Property	Test Procedure	Unit		F40	F50	F90	F130
Compressive Strength	ASTM D 1621	MPa	Nominal	0.35	0.6	1.2	1.7
Compressive Modulus	ASTM C 365	MPa	Nominal	9	18	34	60
Tensile Strength ¹	ASTM D 1623	MPa	Nominal	1.5	1.9	2.8	3.3
Shear Strength	ASTM C 273	MPa	Nominal	0.6	0.8	1.4	1.7
Shear Modulus ²	ASTM C 273	MPa	Nominal	8.5	13.5	24	30
Shear Strain	ASTM C 273	%	Nominal	80	80	80	70
Density ³	ASTM D 1622	kg/m ³	Nominal	40	50	90	130

1. Type B specimen, flatwise tension, equivalent to ASTM C 297
2. Tension mode
3. Tolerance ±10%

For optimal design of applications used in high operating temperatures in combination with continuous load, please contact Diab Technical Services for detailed design instructions.

Product Characteristics

- Excellent FST properties
- High temperature resistance
- Good chemical resistance
- Low water absorption
- Fast and easy to process
- No need to edge fill
- Exceptional OSU heat release performance
- Excellent hot/wet performance
- Hot and cold formable
- Acoustic and thermal insulation
- No film adhesive required

Application areas

Structures, radomes, and interior components.

Customers

Airbus
B/E Aerospace
C&D Zodiac
Hawker Beechcraft
Heath Tecna

Specifications

ABS5927
Multiple
CDM660
050FS12x
HMS-B4-001

Technical Characteristics

Fire, Smoke & Toxicity characteristics

Characteristic	Standard	Test method	F40	F50	F90	F130
Vertical Burn, 60 sec	FAR / CS 25.853 Appendix F	Part I (b)(4)	Pass	Pass	Pass	Pass
Heat Release, Peak / Total	FAR / CS 25.853 Appendix F	Part IV	<25 / <20	<25 / <20	<25 / <20	<25 / <20
	Airbus ABD 0031	AITM 2.0006				
	Boeing BSS 7322	ASTM E906				
Smoke Density ¹ , Ds4, Ds1.5	FAR / CS 25.853 Appendix F	Part V	<1	<1	2	2
	Airbus ABD 0031	AITM 2.0007				
	Boeing BSS 7238	ASTM E662				
Combustion Toxicity ¹	Airbus ABD 0031	AITM 3.0005	Pass	Pass	Pass	Pass
	Boeing BSS 7239	ASTM E662				

1. Flaming mode

Electrical and Thermal characteristics

Characteristic	Standard	Test method	F40	F50	F90	F130
Dissipation Factor	ASTM D 2520	Method A	0.0011	0.0009	0.0022	0.0070
Dielectric Constant			1.06	1.06	1.13	1.17
Thermal Conductivity, W/(m·K) at 23°C	ASTM C 177	-	0.039	-	0.037	0.035
	ASTM C 518	-	-	0.036	-	-

Technical characteristics

Characteristic	Standard	Result
Coefficient of Linear Expansion	ASTM D 696	x10 ⁻⁶ /°C
On set Tg	-	205°C
Tg	-	225°C

Maximum temperature is dependent on time, pressure and process conditions. Therefore users are advised to contact Diab Technical Services to confirm that Divinycell F is compatible with their particular processing parameters.

Physical characteristics

Format		Unit	F40	F50	F90	F130
Plain sheets	Length	mm	2440	2440	2440	2440
	Width	mm	610	610	610	560

Disclaimer:

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