

## 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 <sup>1</sup>	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 <sup>2</sup>	ASTM C 273	MPa	Nominal	8.5	13.5	24	30
Shear Strain	ASTM C 273	%	Nominal	80	80	80	70
Density <sup>3</sup>	ASTM D 1622	kg/m <sup>3</sup>	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 <sup>1</sup> , 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 <sup>1</sup>	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 <sup>-6</sup> /°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:

This data sheet may be subject to revision and changes due to development and changes of the material. The data is derived from tests and experience. If not stated as minimum values, the data is average data and should be treated as such. Calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute a warranty or representation in respect of the material or its use. The company reserves the right to release new data sheets in replacement.

All content in this publication is protected by international copyright laws. Copyright © Diab July 2016.

Issued: July 2016 Doc No: F July 2016 rev24 SI

**Diab Group**  
 Box 201  
 312 22 Laholm, Sweden  
 Phone: +46 (0)430 163 00  
 E-mail: info@se.diabgroup.com

