

TECHNICAL DATA SHEET

Monocore sandwich panels

Patent PCT/IT92/00059

MONOCORE 3D FP CODE: 180 HC

1. RAW MATERIALS

1.1 Fiber of composite **Additional fiber**
 Tridimensional glass fabric Woven roving 500 gr/m²

1.2 MATRIX OF COMPOSITE
 Phenolic system

1.2.1 Mechanical properties using chopped strand laminate

Flexural strenght	170 MN/m ²
Flexural modulus	5700 MN/m ²
Tensile strenght	103 MN/m ²
Tensile modulus	5400 MN/m ²
Elongation at break	2.2 %
Izod impact	660 J/m

Phenolic composite maintain properties at 200°C

1.2.2 Fire test and smoke emission

Fire propagation test	Buiding Regs. E15/BS476 Pt.6	CLASS 0
Surface spread of flame	BS476 Pt.7	CLASS 1
Surface spread of flame	NF P92-501	M 1
Surface spread of flame	DIN 4102	B 1
Surface spread of flame	NEN 3833	CLASS 1
Rate of burning	ASTM D229	Not ignite
Oxygen index	ASTM D229	46
Smoke production:		
Max specific optical density	NBS Smoke Chamber	
	Smouldering	40
	Flamming	75

1.3 Core Sandwich

Tridimensional glass fabric type	3 x 86142
Thickness	3 x 6 mm
Weight	2490 gr/m ² Density 140 Kg/m ³

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2.3D SANDWICH

- 2.1 Skin: N°3 Woven Roving 500 gr/m²
 Thickness 1.1 mm total
- 2.2 Core: N°3 3D Fabric 86142 2490 gr/m²
- 2.3 Matrix: Phenolic resin 48-52 % by weight
- 2.4 Total thickness 18.0 mm ± 0.3
- 2.5 Dimension 1200x2400 mm
- 2.6 Density 470 Kg/m³ Weight 8.5 Kg/m²
- 2.7 Flatness ± 5 mm on 2400 mm
- 2.8 Mechanical properties:
- 2.8.1 Bending stiffness 0.71 N/mm² ASTM C393
- 2.8.2 Compression strenght 3.76 N/mm² ASTM C365
- 2.9 Self extinguishing test and flams spread
- 2.9.1 See Rina statements
- 2.9.2 Smoke tests & Toxicity:
 AFNOR NF F 16-101 **F0**
 LAPI test 587.5AF0030/2001
 AFNOR NF P 92-501 **M1**
 LAPI test 587.0AF0010/01
- 2.9.3 No Drip
- 2.10 Thermal characteristics
- K factor 2.1 W/m²°C
- 2.11 Sound reduction index (ISO 717-1)
- R_w(C,Ctr) = **27** (0,-2) **dB** C₁₀₀₋₅₀₀₀=-1dB C_{tr,100-5000}=-2dB