

The high performance sandwich core

Divinycell Matrix is an all purpose grade with high strength to weight ratio. Divinycel Matrix series delivers relevant mechanical properties and valuable material characteristics.

All products within Matrix Series are well integrated in the DIAB offering and is available in various finishing options as well as kits.

Mechanical properties Divinycell[®] Matrix (SI units)

Properties and test procedures		Unit		MX 7-7	MX 11-9
Compressive strength ¹	ASTM D 1621	MPa	Nominal	0.8	1.1
			Minimum	0.65	0.9
Compressive modulus ¹	ASTM D 1621-B-73	MPa	Nominal	60.0	83.0
			Minimum	50.0	65.0
Tensile strength ¹	ASTM D 1623	MPa	Nominal	1.5	1.8
			Minimum	1.2	1.5
Tensile modulus ¹	ASTM D 1623	MPa	Nominal	65.0	75.0
			Minimum	52.0	57.0
Shear strength	ASTM C 273	MPa	Nominal	0.7	0.9
			Minimum	0.6	0.75
Shear modulus	ASTM C 273	MPa	Nominal	17.0	23.0
			Minimum	15.0	18.0
Shear elongation	ASTM C 273	%	Nominal	14.0	25.0
			Minimum	8.0	20.0
Density	ISO 845	kg/m ³	Nominal	55.0	68.0

1. Perpendicular to the plane. All values measured at +23 °C

Nominal value is an average value of a mechanical property at a nominal density.

Minimum value is a minimum guaranteed mechanical property a material has independently of density.

Product Characteristics

- High strength to weight ratio
- Very good peel strength
- Compatible with all main resin types
- High thermal stability
- Excellent fatigue strength
- Small cell size
- Low water absorption
- Good insulation properties
- Low resin uptake

Technical Characteristics Divinycell® Matrix (SI units)

Characteristics ¹	Unit	MX 7-7	MX 11-9	Test method
Density variation	%	-10/+15	-10/+15	
Thermal conductivity ²	W/(m·K)	0.028	0.035	EN 12667
Coeff, linear heat expansion	x10 ⁻⁶ /°C	40	40	ASTM D 696
Continuous temp range	°C	-200 to +70	-200 to +70	
Max process temp	°C	+90	+90	
Dissipation factor		0.0002	0.0003	ASTM D 2520
Dielectric constant		1.05	1.07	ASTM D 2520
Poissons ratio/perpendicular		0.4	0.4	ASTM 638

1. Typical values are approximate
2. Thermal conductivity at +20 °C

Continuous operating temperature is -200 °C to +70 °C. The foam can be used in sandwich structures, for outdoor exposure, with external skin temperatures up to +85 °C. For optimal design of applications used in high operating temperatures in combination with continuous load, please contact DIAB Technical Services for detailed design instructions.

Normally Divinycell Matrix can be processed at up to +90 °C with minor dimensional changes.

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

Physical characteristics (SI units)

Format, color		Unit	MX 7-7	MX 11-9
Plain sheet	Length	mm	2490	2520
	Width	mm	1245	1260
GS sheet	Length	mm	1245	1260
	Width	mm	830	840
Color			Natural	Natural

Disclaimer:

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DIAB Group

Box 201
SE-312 22 Laholm, Sweden

Phone: +46 (0)430 163 00
Fax: +46 (0)430 163 96
E-mail: info@se.diabgroup.com



www.diabgroup.com