

**CORECORK<sup>®</sup>** is a natural and sustainable core material, compatible with existing sandwich core applications offering excellent FST (fire, smoke and toxicity) properties with good mechanical and processing characteristics.

The low density of **CORECORK<sup>®</sup>** materials, their flexibility and excellent conformability make them possible to be easily integrated into fast cycles of production.

**CORECORK<sup>®</sup>** can be processed by hand layup, vacuum bagging and infusion processes and will withstand process temperatures up to 150°C.

The unique properties of **CORECORK<sup>®</sup>** such as: a structure of closed air cells, low water absorption, rot resistance, excellent fire resistance and a high level of attenuation of noise and vibrations make it an excellent core alternative to the composites industry - perfectly aligned with the new green classifications.

### Mechanical Properties of the Core Material

Property	Method	Unit	NL 10	NL 20	NL 25
Density	ASTM C271	Kg/m <sup>3</sup>	120	200	250
		lb/ft <sup>3</sup>	7.5	12.5	15.6
Compressive Strength	ASTM C365	MPa	0.3	0.5	0.6
		psi	29	72	87
Compressive Modulus	ASTM C365	MPa	5.1	6.0	6.9
		psi	740	870	1000
Tensile Strength	ASTM C297	MPa	0.6	0.7	0.7
		psi	87	101	101
Shear Strength	ASTM C273	MPa	0.9	0.9	1.0
		psi	130	130	145
Shear Modulus	ASTM C273	MPa	5.9	5.9	6.0
		psi	856	856	870
Thermal conductivity	ASTM C377	W/mK	0.032	0.034	0.036
Loss Factor (at 1KHz)	ASTM E756	—	0.022	0.043	0.062

### Mechanical Properties of the Core Material in a Sandwich (\*)

Property	Method	Unit	NL 10	NL 20	NL 25
Flexural Strength at yield	ASTM D790	MPa	37	56	63
Flexural Modulus	ASTM D790	GPa	3.5	4	4.3
Shear Strength at yield	ASTM C392	MPa	0.8	0.9	0.9
Shear Modulus	ASTM C392	MPa	44	41	38
Compressive Strength at yield	ASTM C365	MPa	1.2	2.2	2.5
Compressive Modulus	ASTM C365	MPa	19	23	26
Water absorption (%)	ASTM C272	%	< 4	< 4	< 4
Panel density	—	Kg/m <sup>3</sup>	0.60	0.56	0.63

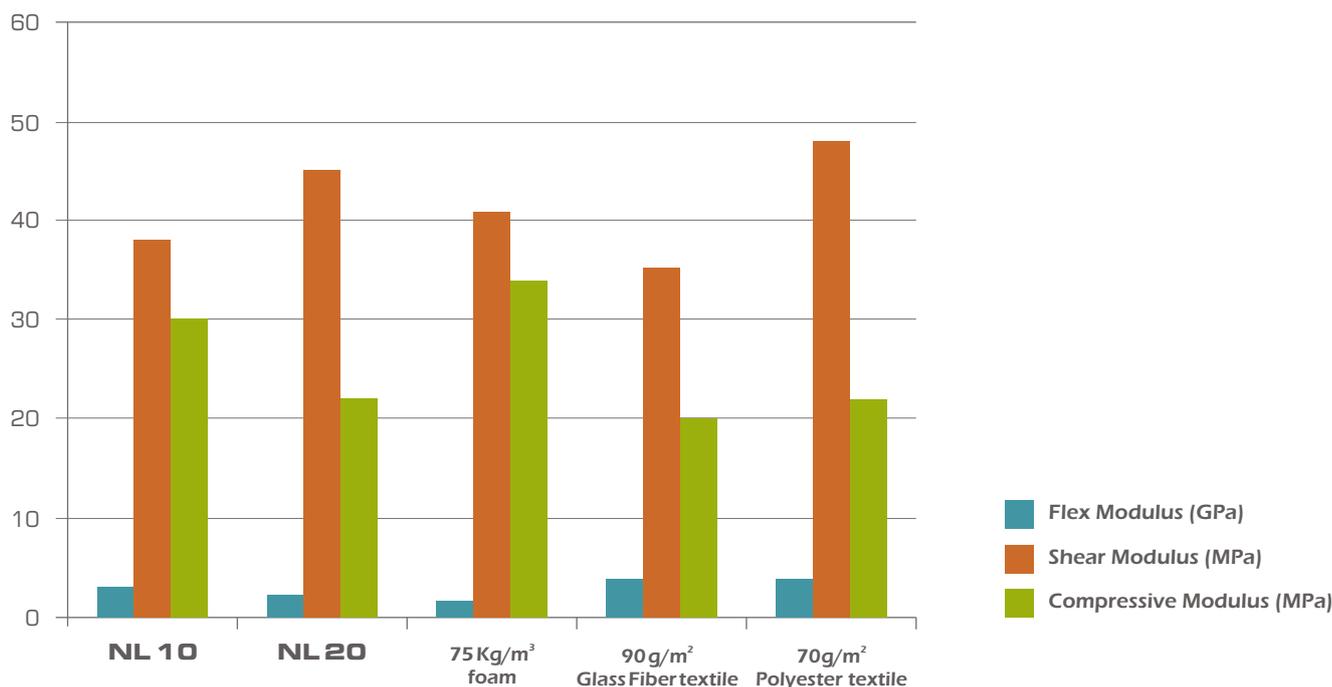
(\*) Samples made by Infusion (0.6 bar) with epoxy resin ref.SR8100/cat ref.SD 8824 and two layers of 300kg/m<sup>3</sup> glass fiber, on each side, sandwich thickness: 6,5 mm; cure at 60°C; samples tested after 5 days of manufacturing.



Sandwich core applications made with **CORECORK<sup>®</sup>** will meet or exceed the performance of similar FRP made with synthetic, non sustainable cores.

Comparative data measured on actual sandwich sample panels show that equivalent or better mechanical resistance can be obtained with equal constructions.

### Comparative Chart Showing Properties of Sandwich Panels Using Different Core Materials



#### Process Guidelines

Resin uptake (*) (per m <sup>2</sup> at 1mm)	NL 10	270 g
	NL 20	170 g
Maximum Processing Temperature	180°C	
Vacuum Bag Processing	up to 150°C	
Autoclave Cure Processing	Possible	
Coefficient of Linear Expansion (ASTM E831-06)	aprox. 110 x10-6 /°C at RT	

#### Resin Compatibility

Epoxy	Excellent
Polyester	Excellent
Phenolic	Excellent
Vynilester	Excellent
Polyurethane	Excellent



AMORIM Amorim Cork Composites

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