

CORECORK 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** materials, their flexibility and excellent conformability make them possible to be easily integrated into fast cycles of production.

CORECORK 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** such as: a structure of closed air cells, low water absorption, rot resistance, excellent fire resistance and 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	NL10	NL20	NL25
Density	ASTM C271	Kg/m ³ lb/ft ³	140 8.7	200 12.5	250 15.6
Compressive Strength	ASTM C365	MPa psi	0.3 44	0.5 72	0.6 87
Compressive Modulus	ASTM C365	MPa psi	5.1 740	6.0 870	6.9 1000
Tensile Strength	ASTM C297	MPa psi	0.6 87	0.7 101	0.7 101
Shear Strength	ASTM C273	MPa psi	0.9 130	0.9 130	1.0 145
Shear Modulus	ASTM C273	MPa psi	5.9 856	5.9 856	6.0 870
Thermal Conductivity	ASTM E1530	W/mK	0.042	0.044	0.046
Loss Factor (at 1KHz)	ASTM E756	-	0.022	0.043	0.062

MECHANICAL PROPERTIES OF THE CORE MATERIAL IN A SANDWICH (*)

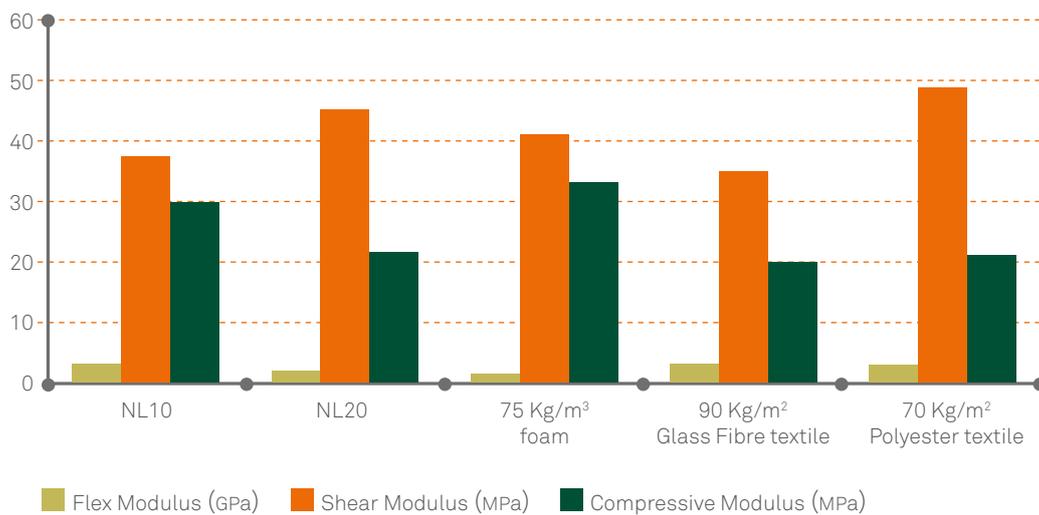
PROPERTY	METHOD	UNIT	NL10	NL20	NL25
Flexural Strength at yield	ASTM D790	MPa	37	56	63
Flexural Modulus	ASTM D790	GPa	3.5	4	4.3
Shear Strength at yield	ASTM C392	MPa	0.8	0.9	0.9
Shear Modulus	ASTM C392	MPa	44	41	38
Compressive Strength at yield	ASTM C365	MPa	1.2	2.2	2.5
Compressive Modulus	ASTM C365	MPa	19	23	26
Water Absorption (%)	ASTM C272	%	<4	<4	<4
Panel Density	-	-	0.600	0.560	0.630

(*) Samples made by Infusion (0.6 bar) with epoxy resin ref.SR8100/cat ref.SD8824 and two layers of 300g/m² glass fibre roving, 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** 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 COMPATIBILITY	
Resin uptake (*) (per m ² at 1mm)	NL10 NL20	270g 170g	Epoxy Excellent
Maximum Processing Temperature		180°C	Polyester Excellent
Vacuum Bag Processing		up to 150°C	Phenolic Excellent
Autoclave Cure Processing		possible	Vynilester Excellent
Coefficient of Thermal Expansion (ASTM E831-06)		aprox. 110 x 10 ⁻⁶ /°C at RT	Polyurethane Excellent

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