

# FR Structural Laminate

## TECHNICAL PROPERTIES

Property	Value	FR Available Product Thicknesses				Test Method
		1 mm	2 mm	5 mm	10 mm	
Maximum Weight	Kg / m <sup>2</sup>	< 1.4	< 2.6	> 7.2	> 14.6	Calibrated weighing scales
Compressive Strength	MPa	μ 63	μ 83	μ 357	μ 291	According to BS EN ISO 604: 2003 for 5 mm & 10 mm and D695-15 for 2 mm
Compressive Modulus	GPa	μ 20.7	μ 22.2	μ 13.89	μ 15.4	According to BS EN ISO 604: 2003 for 5 mm & 10 mm and D695-15 for 1mm & 2 mm
Flexural Strength	MPa	μ 217.3	μ 182.8	μ 67.8	μ 102	According to ISO 178: 2010 + A1: 2013
Flexural Modulus	GPa	μ 11.9	μ 11.4	μ 8.93	μ 15.8	According to ISO 178: 2010 + A1: 2013
Tensile Strength	MPa	μ 107	μ 118	μ 91	μ 59.9	According to BS EN ISO 527.4: 2013
Tensile Modulus	GPa	μ 16.76	μ 17.5	μ 17.5	μ 14.5	According to BS EN ISO 527.4: 2013
Density	g / cm <sup>3</sup>	μ 1.38	μ 1.23	> 1.15	> 1.15	Acc. to BS EN ISO 1183-1:2012, Method A
Colour	-	Black				Visual
Working Range	° C	-196 to +1200		-196 to +1500		External and In-house testing
Fire Protection Time	Mins	> 60	>120	> 240	> 720	External and In-house testing
Standard Available Dimensional Size	cm	80 x 130				-

### Testing carried out by:-

UL Laboratories, Northwood, Illinois, USA

Warringtonfire, Holmesfield Road, Warrington, WA1 2DS, UK

RISE Research Institute, Fire Research Dynamics, Box 857, 501 15 Borås, Sweden

Intertek Wilton, Room D135, The Wilton Centre, Redcar , TS10 4RF, UK

Cambridge Fire Research, Brewery Rd, Pampisford, Cambridge CB22 3HG, UK

BRE Global, Reaction to Fire Testing, Bucknalls Lane, Garston, Herts, WD25 9XX, UK

Zoltek Carbon Fibre Test Laboratory, Hungary – Part of the Toray Group

CFP Composites in-house testing