

Technical Data Sheet

Durolight® S

GFK-UP

Typical characteristics

- Low thermal conductivity
- High mechanical strength
- Glass-reinforced thermoset SMC high-pressure laminate developed for applications at cryogenic temperatures

Typical industries

- LNG 发动机 - 低温隔热件
- 管路
- 水下
- Healthcare
- Hydrogen Energy

	Test method	Unit	Guideline value
Mechanical properties			
Density	ISO 1183	g / cm ³	1,85
Flexural strength \perp 0°C	ISO 178	MPa	140
Flexural strength \perp +50°C	ISO 178	MPa	125
Flexural strength \perp +100°C	ISO 178	MPa	110
Flexural strength \perp +150°C	ISO 178	MPa	80
Flexural strength \perp -50°C	ISO 178	MPa	160
Flexural strength \perp -100°C	ISO 178	MPa	175
Flexural strength \perp -150°C	ISO 178	MPa	190 ¹⁾
Flexural strength \perp -196°C	ISO 178	MPa	205 ¹⁾
Modulus of elasticity in flexion \perp 0°C	ISO 178	MPa	9000
Compressive strength \perp 0°C	ISO 604	MPa	250
Compressive strength \perp +50°C	ISO 604	MPa	220
Compressive strength \perp +100°C	ISO 604	MPa	190
Compressive strength \perp +150°C	ISO 604	MPa	160
Compressive strength \perp -50°C	ISO 604	MPa	280
Compressive strength \perp -100°C	ISO 604	MPa	310
Compressive strength \perp -150°C	ISO 604	MPa	335 ¹⁾
Compressive strength \perp -196°C	ISO 604	MPa	360 ¹⁾
Tensile strength II 0°C	ISO 527	MPa	75

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	Test method	Unit	Guideline value
Impact strength \perp (Charpy) RT	ISO 179	kJ / m ²	75
Shear strength II RT	DIN EN 60893	MPa	20
Thermal properties			
Flammability	UL 94	/	V0 / 3mm
Smoke density & toxicity, class	NF F 16-101	/	F0
Fire test, class	NF P 92-501	/	M1
Thermal conductivity \perp RT		W / (m * K)	≈ 0,3 ^{1) 2)}
Thermal conductivity \perp -50°C		W / (m * K)	≈ 0,27 ^{1) 2)}
Thermal conductivity \perp -196		W / (m * K)	≈ 0,21 ^{1) 2)}
Physical properties			
Water absorption (4mm thickness)	ISO 62	%	0,2

\perp = perpendicular to the lamination II = parallel to the lamination

¹⁾ Extrapolated value

²⁾ Thermal conductivity calculated by means of reference measurements on samples of 300 x 200 x 10 mm

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