

Technical Data Sheet

Durolight® S2

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

	Test method	Unit	Guideline value
Mechanical properties			
Density	ISO 1183	g / cm ³	1,95
Flexural strength ¹⁾ ⊥ 0°C	ISO 178	MPa	350
Flexural strength ¹⁾ ⊥ +50°C	ISO 178	MPa	300
Flexural strength ¹⁾ ⊥ +100°C	ISO 178	MPa	200
Flexural strength ¹⁾ ⊥ +150°C	ISO 178	MPa	110
Flexural strength ¹⁾ ⊥ -50°C	ISO 178	MPa	450
Flexural strength ¹⁾ ⊥ -150°C	ISO 178	MPa	600 ²⁾
Flexural strength ¹⁾ ⊥ -196°C	ISO 178	MPa	700 ²⁾
Flexural strength ¹⁾ ⊥ -100°C	ISO 178	MPa	510
Modulus of elasticity in flexion ¹⁾ ⊥ 0°C	ISO 178	MPa	18000
Compressive strength ⊥ 0°C	ISO 604	MPa	450
Compressive strength ⊥ +50°C	ISO 604	MPa	400
Compressive strength ⊥ +100°C	ISO 604	MPa	250
Compressive strength ⊥ +150°C	ISO 604	MPa	180
Compressive strength ⊥ -50°C	ISO 604	MPa	550
Compressive strength ⊥ -100°C	ISO 604	MPa	650
Compressive strength ⊥ -150°C	ISO 604	MPa	750 ²⁾
Compressive strength ⊥ -196°C	ISO 604	MPa	850 ²⁾

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	Test method	Unit	Guideline value
Tensile strength II RT	ISO 527	MPa	180
Impact strength \perp (Charpy) RT	ISO 179	kJ / m ²	200
Shear strength II RT	DIN EN 60893	MPa	25
Thermal properties			
Thermal conductivity \perp RT		W / (m * K)	$\approx 0,38$ ^{2) 3)}
Thermal conductivity \perp -50°C		W / (m * K)	$\approx 0,35$ ^{2) 3)}
Thermal conductivity \perp -196		W / (m * K)	$\approx 0,27$ ^{2) 3)}
Physical properties			
Water absorption (method 1)	ISO 62	%	< 0,2

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

¹⁾ Sample size 80 x 10 x 4 mm, support distance 64 mm, tension zone unmachined

²⁾ Extrapolated value

³⁾ Thermal conductivity calculated by means of reference measurements on samples of 300 x 200 x 10 mm

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