

### 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 engines - Cryogenic Insulation
- Pipelines
- Subsea
- Healthcare

	Test method	Unit	Guideline value
<b>Mechanical properties</b>			
Density	ISO 1183	g / cm <sup>3</sup>	1,95
Flexural strength <sup>1)</sup> ⊥ 0°C	ISO 178	MPa	350
Flexural strength <sup>1)</sup> ⊥ +50°C	ISO 178	MPa	300
Flexural strength <sup>1)</sup> ⊥ +100°C	ISO 178	MPa	200
Flexural strength <sup>1)</sup> ⊥ +150°C	ISO 178	MPa	110
Flexural strength <sup>1)</sup> ⊥ -50°C	ISO 178	MPa	450
Flexural strength <sup>1)</sup> ⊥ -150°C	ISO 178	MPa	600 <sup>2)</sup>
Flexural strength <sup>1)</sup> ⊥ -196°C	ISO 178	MPa	700 <sup>2)</sup>
Flexural strength <sup>1)</sup> ⊥ -100°C	ISO 178	MPa	510
Modulus of elasticity in flexion <sup>1)</sup> ⊥ 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 <sup>2)</sup>
Compressive strength ⊥ -196°C	ISO 604	MPa	850 <sup>2)</sup>
Tensile strength II RT	ISO 527	MPa	180

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Print: 08/07/2025 • Release: 20/09/2023 • Version: 1.0  
 PIM-Version: 806 • PIM-ID: 716643 • PIM-Code: 806-43-12.23.9-3.5.5.9-20  
 Company-IDs: 20000-1

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

= perpendicular to the lamination II = parallel to the lamination

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

<sup>2)</sup> Extrapolated value

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

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