

## Technical Data Sheet

# Durolight<sup>®</sup> S

### Product characteristics

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

### Product industries

- LNG engines - Cryogenic Insulation
- Pipelines
- Subsea
- Healthcare
- Hydrogen Energy

|  | Test method | Unit                | Guideline value   |
|--|-------------|---------------------|-------------------|
| <b>Mechanical properties</b>                 |             |                     |                   |
| Density                                      | ISO 1183    | g / cm <sup>3</sup> | 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 <sup>1)</sup> |
| Flexural strength $\perp$ -196°C             | ISO 178     | MPa                 | 205 <sup>1)</sup> |
| 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 <sup>1)</sup> |
| Compressive strength $\perp$ -196°C          | ISO 604     | MPa                 | 360 <sup>1)</sup> |
| Tensile strength II 0°C                      | ISO 527     | MPa                 | 75                |

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

= perpendicular to the lamination II = parallel to the lamination

<sup>1)</sup> Extrapolated value

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

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