PRODUCT DATASHEET

PREMIER ENGINEERED SERIES

FLOW-THERM™ Si

SUBSEA INSULATION

Maximum Operating Temperature[1]

356 °F (180 °C)

Maximum Water Depth[1]

Unlimited

FLOW-THERM™ Si is a silicone (Si) rubber thermal insulation that meets structural and thermal integrity requirements in high-pressure and high-temperature subsea environments.

FLOW-THERM Si has excellent compressive resistance, thermal stability, high tensile strength, and high elongation performance. Further, it has excellent silicone to silicone adhesion for creating strong joints.

FLOW-THERM Si performs in deep and ultra-deepwater applications when applied to subsea equipment such as jumpers, end terminations (PLETs), pipeline end manifolds (PLEMs), or any moldable structures.

LAYER PROPERTY	TEST SPECIFICATION	TYPICAL VALUE
General Properties		
Thermal Conductivity[2] BTU/(h·ft·°F) (W/m·K)	ASTM C518	1.23 (0.177)
Specific Heat @, BTU/°F/lb (J/K/kg)	ASTM E1269	0.35 (1.46)
Density, lb/ft^3 (kg/m^3)	ASTM D792	67.4 (1,080)
Tensile Strength, psi (Mpa)	ASTM D638	600 (4.14)
Hardness	ASTM D2240	≥ 40 Shore A
Elongation @ Break, %	ASTM D638	≥ 250
Uniaxial Compressive Strength @ 10%, psi (Mpa)	ASTM D695	32.5 (224)
Uniaxial Compressive Strength @ 50%, psi (Mpa)	ASTM D695	470 (3.24)
Axial Ring Shear Adhesion to Phenguard 940 / Intertherm 228, psi (Mpa)	PP 16.22	50 (0.34)
Pull Adhesion to Phenguard 940 / Intertherm 228, psi (Mpa)	ASTM D4541 PPNI-TI-QA-037	150 (1.03)

Notes

- [1]Contact PERMA-PIPE for project specific application limits.
- [2]Average thermal conductivity for the applied FLOW-THERM Si. In service thermal conductivity may be different due to temperature, hydrostatic pressure and water exposure.
- FLOW-THERM™ is formerly Auto-Therm®.

Select Your Own Premium Options

PERMA-PIPE is your partner of choice to solve critical pipe performance and protection challenges. We offer additional high performance features for FLOW-THERM, please select the options below to customize your piping system.

Anti-Corrosion Coatings	Fabricated Parts	Engineering Support	Field Service
Fusion Bonded Epoxy (FBE)	Elbows & Bends	Heat Loss & Heat Gain Calculations	Field Joint Materials, Support & Installation
Liquid Epoxy (LE)	Tees		
Primer	Specialty Spools		
	Manifolds		
	PLEMs		
	PLETs		
	ILTs		
Service Pipe Materials: Carbon Steel, Stainless Steel, and Clad Pipe.			

Additional Services

For all your piping system needs from start to finish, PERMA-PIPE offers on-demand, full-service engineering support, field service, custom fabrication, and leak detection systems.

Sales Contacts

PERMA-PIPE's technical staff are available to support you across a range of piping system applications and project requirements. Rely on our technical staff to help you specify the right piping insulation and to maximize your asset performance. Please contact us at askpermapipe@permapipe.com for further information.

PERMA-PIPE®

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