

FLOW-THERM™ RS 3604
SUBSEA INSULATION



Maximum Operating Temperature⁽¹⁾

284 °F (140 °C)

Maximum Water Depth⁽¹⁾

Unlimited

FLOW-THERM™ (fka Auto-Therm®) FLEXILON RS 3604 is a polymer alloy based high-temperature thermal insulation material manufactured by Rosehill Offshore Ltd.

FLOW-THERM RS 3604 is a moldable system with a fast cycle time that exhibits superior thermal and hydrolytic stability compared to conventional polyurethanes.

FLOW-THERM RS 3604 can be used in applications that require a fast cycle time and exhibits toughness, excellent compressive resistance, high strength, and good adhesion. The attributes of FLOW-THERM RS 3604 are particularly useful when the material is applied to subsea equipment such as jumpers, end terminations (PLETs), pipeline end manifolds (PLEMs), or any moldable structures for deep and ultra-deep water applications.

LAYER PROPERTY	TEST SPECIFICATION	TYPICAL VALUE	
		TEST TEMPERATURE 73 °F (23 °C) +	MAXIMUM RATED TEST TEMPERATURE 284 °F (140 °C)
General Properties			
Thermal Conductivity ⁽²⁾ BTU/(h·ft·°F) (W/m·K)	ISO 8301 (FOX 50)	0.105 (0.1824)	0.118 (0.1904)
Specific Heat, BTU/°F/lb (J/K/kg)	ASTM E1269-05	0.45 (1.884)	0.60 (2.498)
Water Absorption	ISO 12736/ISO 62	0.7% after 12 months @ 4 °C	-
Density, lb/ft ³ (kg/m ³)	ISO 1183	67.48 (1081)	-
Tensile Properties, psi (Mpa)	ISO 37	2320 (16)	435 (3)
Hardness	ISO 868	53 Shore D	-
Elongation at Break, %	BS ISO 37:2005	50	-
Compressive Strength	ISO 844	1232 (8.5)	391 (2.7)
Abrasion Resistance, (mm ³)	ISO 4649	665	-
Coefficient of Linear Thermal Expansion	ISO 11359-2	183.86 x 10 ⁻⁶ /°C	

Notes

- ⁽¹⁾Contact PERMA-PIPE for project specific application limits.
- ⁽²⁾Average thermal conductivity for the applied FLOW-THERM. 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		
<p>Service Pipe Materials: Carbon Steel, Stainless Steel, and Clad Pipe.</p>			

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.

