

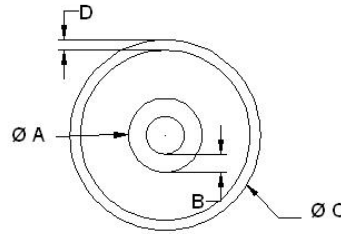
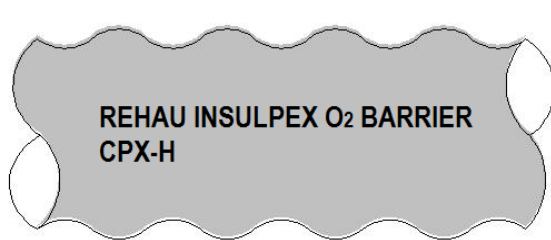
PRODUCT SUBMITTAL 132

INSULPEX Pre-insulated PEXa



Product: INSULPEX® with RAUTHERM-FW Pipe SDR 11

Date: 10 November 2021 (supersedes 30 April 2020)



Article No.	Nominal Size mm+mm/m m	PEXa Carrier pipe			Outer Jacket		INSULPEX	
		Average Outer Diam. A in (mm)	Min. Wall Thickness B in (mm)	Capacity gal/ft (l/m)	Outer Diameter C in (mm)	Wall Thickness D in (mm)	Weight lb/ft (kg/m)	Minimum Bend Radius ft (m)
423418-001	25/91	0.990 (25.2)	0.091 (2.3)	0.0263 (0.327)	3.6 (91)	0.083 (2.1)	0.8 (1.2)	2.6 (0.8)
423419-001	32/91	1.266 (32.2)	0.114 (2.9)	0.0434 (0.539)	3.6 (91)	0.083 (2.1)	0.9 (1.4)	2.6 (0.8)
241082-001	40/91	1.583 (40.2)	0.146 (3.7)	0.0672 (0.835)	3.6 (91)	0.083 (2.1)	0.9 (1.4)	2.6 (0.8)
241092-001	50/111	1.978 (50.3)	0.181 (4.6)	0.1052 (1.307)	4.4 (111)	0.091 (2.3)	1.3 (2.0)	3.0 (0.9)
221317-	63/126	2.492 (63.3)	0.228 (5.8)	0.1683 (2.091)	5.0 (126)	0.106 (2.7)	1.7 (2.6)	3.3 (1.0)
221327-	75/142	2.967 (75.4)	0.268 (6.8)	0.2384 (2.961)	5.6 (142)	0.118 (3.0)	2.3 (3.4)	3.5 (1.1)
221337-	90/162	3.561 (90.5)	0.323 (8.2)	0.3425 (4.254)	6.4 (162)	0.125 (3.2)	3.1 (4.6)	4.0 (1.2)
221347-	110/162	4.350 (110.5)	0.394 (10.0)	0.5123 (6.362)	6.4 (162)	0.125 (3.2)	3.8 (5.7)	4.0 (1.2)
222677-001	125/182	4.945 (125.6)	0.449 (11.4)	0.6537 (8.120)	7.2 (182)	0.130 (3.3)	4.8 (7.2)	4.5 (1.4)
315265-001	140/202	5.537 (140.7)	0.500 (12.7)	0.8300 (10.31)	8.0 (202)	0.130 (3.3)	5.6 (8.4)	4.5 (1.4)

Note: 63-140 mm available in 39 ft straight lengths

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TECHNICAL DESCRIPTION (BY COMPONENT)

Component	Specification	English	SI	Standard	Component	Specification	English	SI	Standard
Carrier pipe	Minimum Density	58 lb/ft ³	926 kg/m ³	DIN 16892	Carrier pipe	Max. Short-term Exposure	87 psi @ 212°F (100 hr)	600 kPa @ 100°C (100 hr)	ISO 15875
Carrier pipe	Min. Degree of Crosslinking	70%	70%	DIN 16892	Insulation	Thermal Conductivity	≤0.14 Btu·in/(h·ft ² ·°F) @ 122°F	≤0.0199 W/(m·K) @ 50°C	EN 253 and ISO 8497
Carrier pipe	Max. Thermal Conductivity	2.84 Btu·in/h·ft ² ·°F	0.41 W/(m·K)	DIN 16892	Insulation	Closed Cellular Structure	≥90 %	≥90 %	--
Carrier pipe	IZOD Impact Resistance	No Break	No Break	--	Insulation	Max. Water Absorption	<10% (vol)	<10% (vol)	EN 15632
Carrier pipe	Modulus of Elasticity	87,000-130,500 psi @ 68°F 43,500-58,000 psi @ 176°F	600-900 N/mm ² @ 20°C 300-400 N/mm ² @ 80°C	Min. @ 20°C per DIN 16892	Insulation	Minimum Density	3.1 lb/ft ³	50 kg/m ³	EN 253
Carrier pipe	O ₂ Permeability	--	≤0.32 mg/m ² /day @ 40°C	DIN 4726	Outer Casing	Thermal Conductivity	2.3 Btu·in/(h·ft ² ·°F) @ 122°F	0.33 W/(m·K) @ 50°C	DIN 52612
Carrier pipe	Roughness	0.00028 in	0.007 mm	--	Outer Casing	Maximum UV Resistance	2 years	2 years	--

FUNCTIONAL DESCRIPTION

INSULPEX one-pipe system consists of one RAUTHERM-FW pipe encased in closed-cell polyurethane (PUR) foam insulation, with a protective low-density polyethylene (PE) outer casing. RAUTHERM pipe according to ISO 15875 and DIN 16892 is manufactured using the high-pressure peroxide method for crosslinked polyethylene (PEXa). RAUTHERM pipe is manufactured by REHAU using a quality management system which has been certified to the latest version of ISO 9001. RAUTHERM-FW has a co-extruded oxygen diffusion barrier that exceeds the strict requirements of DIN 4726. RAUTHERM-FW pipe is SDR11, red in color, compatible with SDR11 compression-sleeve fittings in accordance with ISO 15875, and not for use in potable water applications.

LONG TERM STRENGTH

The maximum temperature and pressure ratings of the RAUTHERM pipe are according to ASTM D2837 and F2788. The designer shall determine the actual conditions and apply the appropriate and additional design factors as required for any particular project. The temperature and pressure ratings apply to the application of RAUTHERM pipe for conveying heating and cooling water at the 2.0 design coefficient on allowable working pressure. According to the REHAU PEXa Limited Warranty, the RAUPEX pipe warranty period of 25 years is for operating conditions at or below 180°F (82.2°C) in permitted applications when the handling, use, installation and maintenance continually complies with all REHAU technical guidelines.

RAUTHERM SDR11

maximum pressures and temperatures	design factors (coefficients)
125 psi @ 73.4°F (860 kPa @ 23°C)	0.50 (2.0)
80 psi @ 180°F (550 kPa @ 82.2°C)	0.50 (2.0)
65 psi @ 200°F (450 kPa @ 93.3°C)*	0.50 (2.0)

* REHAU defines Elevated Temperature Applications as those with operating conditions greater than 180°F (82.2°C). When REHAU PEXa pipes are planned to be operated in Elevated Temperature Applications, contact REHAU Engineering to verify your project conditions comply with the REHAU PEXa Limited Warranty in accordance to REHAU Technical Bulletin TB230 Elevated Temperature Applications.

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