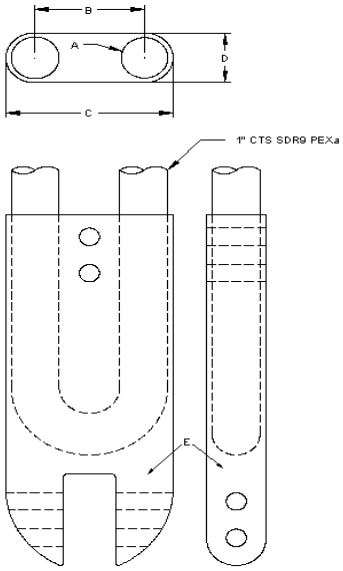
PRODUCT SUBMITTAL 152

RAUGEO 1in. U-bend

Product: RAUGEO™ 1 in. U-bend

Date: 15 June 2022 (supersedes 01 December 2017)



Article No.	Type	No. of U-bends	RAUGEO Pipe					Probe Tip			
			Nominal Size in	Average OD A in (mm)	Minimum Wall Thickness in (mm)	Weight lb/ft (kg/m)	Capacity gal/ft (l/m)	B in (mm)	C in (mm)	D in (mm)	Base Material E
630376	Single U-bend	1	1	1.125 (28.58)	0.125 (3.18)	0.17 (0.26)	0.0316 (0.3939)	2.56 (65.0)	3.94 (100.0)	1.38 (35.0)	Polyester resin
630366	Double U-bend	2									

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TECHNICAL DESCRIPTION

Specification	English	SI	Standard
Minimum Density	58 lb/ft³	926 kg/m³	ASTM F876
Min. Degree of Crosslinking	70%	70%	ASTM F876
Max. Thermal Conductivity	2.84 Btu in/(hr ft² °F)	0.41 w/(m°K)	DIN 16892
Coefficient of Linear Exp.	9.33 x 10-4 in/ft°F @ 68°F 1.33 x 10-3 in/ft°F @ 212°F	0.14 mm/(m°C) @ 20°C 0.2 mm/(m°C) @ 100°C	Mean @ 20-70°C per DIN 16892
Modulus of Elasticity	87,000-130,500 psi @ 68°F 43,500-58,000 psi @176°F	600-900 N/mm² @ 20°C 300-400 N/mm² @ 80°C	Minimum @ 20°C per DIN 16892
Tensile Strength	4194-4355 psi @ 68°F 2610-2900 psi @ 176°F	26-30 N/mm² @ 20°C 18-20 N/mm² @ 80°C	--
IZOD Impact Resistance	No Break	No Break	--
Temperature Working Range	-40 to 200°F	-40 to 93°C	--
Roughness	e=0.00028 in	e=0.007 mm	--
Max. Short-term Exposure	150 psig @ 210°F (48 hr)	1035 kPa @ 99°C (48 hr)	ASTM F876
UV Resistance	One Year	One Year	ASTM F2657

FUNCTIONAL DESCRIPTION

RAUGEO pipes are certified to CSA C448 and are recognized by the International Ground Source Heat Pump Association's (IGSHPA) *Design and Installation Standards* guide as an accepted piping system for ground loop heat exchangers.

RAUGEO pipes are manufactured using the high-pressure peroxide method for crosslinked polyethylene (PEXa). RAUGEO PEXa pipe has a co-extruded grey PE UV shield that protects the pipe when exposed to ultraviolet light (sunlight) per REHAU Technical Bulletin TB218. All RAUGEO pipe meets or exceeds the requirements of CSA C448, ASTM F876, F877, CSA B137.5 and PPI TR-3. RAUGEO pipe and probes are manufactured by REHAU using a quality management system which has been certified to the latest version of ISO 9001.

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RAUGEO pipe is copper tube size SDR9, grey in color, and compatible with EVERLOC+ compression-sleeve fittings in accordance with ASTM F877 and CSA B137.5 and electro-fusion fittings certified to ASTM F1055.

LONG TERM STRENGTH

The maximum temperature and pressure ratings of the RAUGEO pipe are in accordance to ASTM F876, CSA B137.5 and PPI TR-3. 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 RAUGEO pipe for conveying hot and cold water at the 2.0 safety factor on allowable working pressure according to ASTM and CSA. REHAU confirms a 200 psi (1370 kPa) pressure rating at 73.4°F (23°C) when using a 1.5 safety factor, see REHAU *Technical Bulletin 256 RAUGEO Pressure and Temperature Ratings*. According to the REHAU *PEXa Limited Warranty*, the RAUGEO 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.

RAUPEX SDR9	
maximum pressures and temperatures	**design factors**
200 psi @ 73.4°F (1370 kPa @ 23°C)	0.63 (per CSA B137.0 clause 6.6.3.2.2, REHAU TB-239)
160 psi @ 73.4°F (1055 kPa @ 23°C)	0.50 (per ASTM F876, CSA B137.5)
100 psi @ 180°F (690 kPa @ 82.2°C)	0.50 (per ASTM F876, CSA B137.5)