FIBERGLAS® PIPE INSULATION

PIPE INSULATION SYSTEMS—PRODUCT DATA

DESCRIPTION & USES

- One-piece, 36"-long hinged sections open to fit over pipe.
- Heavy density resin-bonded inorganic glass fibers.
- *Fiberglas* SSL II® pipe insulation is jacketed with all-service (ASJ) vapor retarder and comes with factory-applied DOUBLESURE®* double pressure-sensitive longitudinal adhesive closure system and butt strip seals for a positive closure.
- Larger sizes use SSL®, a single lap seal.
- "No Wrap" style is also available for field-installed jacketing.
- Uses: Insulation of hot, cold, concealed and exposed piping operating at temperatures from 0°F (-18°C) to 850°F (454°C) in commercial buildings, industrial facilities and process or power plants.

FEATURES & BENEFITS

- SSL II positive closure system provides long-term vapor sealing of all joints without the use of staples or mastic.
- Jacket and lap adhere to the insulation and won't come apart in handling or cutting.
- Low thermal conductivity contributes to lower operating costs.
- UL classified for Surface Burning Characteristic (FHC 25/50). Meets model code fire ratings so it is generally granted immediate building code approval.

AVAILABILITY

FIBER GLASS PIPE INSULATIONS ARE AVAILABLE IN THICKNESSES AND FOR PIPE SIZES AS FOLLOWS:

Insulation Thickness, in (mm)	Nominal Pipe Sizes, NPS, in (DN, mm)					
	SSL II® Pipe Insulation		SSL® Pipe Insulation[1]		No-Wrap Pipe Insulation[2]	
½ (13)	½-6	(15-150)			½-6	(15-150)
1 (25)	½-15	(15-375)	16-33	(400-825)	½-33	(15-825)
1½ (38)	½-14	(15-350)	15-33	(375-825)	½-33	(15-825)
2 (51)	½-12	(15-300)	14-33	(350-825)	½-33	(15-825)
2½ (64)	2-11	(50-275)	12-26	(300-650)	½-32	(15-800)
3 (76)	3-10	(75-250)	11-26, 30	(275-650, 750)	½-31	(15-900)
3½ (89)	4½-9	(115-225)	10-18, 20-22, 24	(250-450, 500-550, 600)	½-30	(15-750)
4 (102)	4½-8	(115-200)	9-21, 24, 25	(225-525, 600, 625)	½-29	(15-725)
4½ (114)	6-7	(150-175)	8-10, 12, 14, 16, 18, 20, 24	(200-250, 300, 350, 400, 450, 500, 600)	½-28	(15-700)
5 (127)	6	(150)	7-14, 16-24	(175-350, 400-600)	½-27	(15-675)
5½ (140)					6-26	(150-650)
6 (152)					6-25	(150-625)

[1] SSL all made-to-order except 14" x 2" (350 mm x 51 mm) and 16" x 1", 1½" and 2" (400 mm x 25 mm, 38 mm and 51 mm).
[2] Consult Packaging Data Supplement (PP1.P5) available upon request for standard and made-to-order sizes.

SPECIFICATION COMPLIANCE

See also page 26 for a discussion of mineral fiber specifications.

- ASTM C 547, Mineral Fiber Pre-Formed Pipe Insulation, Type I, Grade A to 850°F (454°C)
- ASTM C 585, Inner and Outer Diameters of Pipe Insulation
- ASTM C 795, Thermal Insulation for Use Over Austenitic Stainless Steel[1]
- ASTM C 1136, Flexible Low Permeance Vapor Retarders for Thermal Insulation: All Types (facing only)
- Mil. Spec. MIL-I-22344D, Insulation, Pipe, Thermal, Fibrous Glass
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation[1]
- New York City MEA No. 344-83
- CAN/CGSB-51.9 — Type 1, Class 2[2]
- NFPA 90A

[1] Preproduction qualification testing complete and on file. Chemical analysis of each production lot required for total conformance.
[2] Standard obsolete, replaced by ASTM C 547.

*DOUBLESURE is a registered trademark of Morgan Adhesives Company.

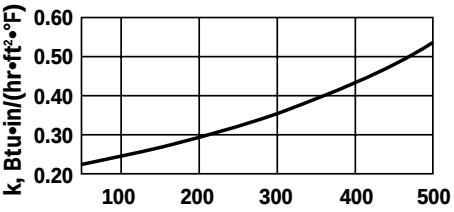
PHYSICAL PROPERTY DATA

Property	Test Method	Value
Operating temperature range	ASTM C 411	0 to 850°F[1] (-18°C to 454°C)[1]
Jacket temperature limitation	ASTM C 1136	-20°F to 150°F (-29°C to 66°C)
Jacket permeance	ASTM E 96, Proc. A	0.02 perm
Puncture resistance	TAPPI T803	50 units
Composite surface burning characteristics	UL 723[2] ASTM E 84[2] and CAN/ULC-S102[2]	Flame spread 25[2] Smoke developed 50

[1] Limited to single layer applications above 650°F (343°C), but not greater than 6" (152 mm) thickness.

[2] The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E 84 or CAN/ULC-S102. These standards should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.

THERMAL CONDUCTIVITY



Apparent thermal conductivity curve determined in accordance with ASTM Practice C 1045 with data obtained by ASTM Test Method C 335. Values are nominal, subject to normal testing and manufacturing tolerances.

THERMAL PERFORMANCE, ASTM C 680

Insulation NPS x Thk. in	Insulation (DN x Thk. mm)	Pipe Operating Temperature, °F (°C) 300 (149) HL	300 (149) ST	500 (280) HL	500 (280) ST	700 (371) HL	700 (371) ST
2 x ½	(50 x 13)	77 (74)	128 (53)				
4 x 1	(100 x 25)	78 (75)	109 (43)				
8 x 1	(200 x 25)	140 (135)	112 (44)				
12 x 1	(300 x 25)	199 (191)	113 (45)				
2 x 1½	(50 x 38)			88 (85)	116 (47)		
4 x 1½	(100 x 38)			142 (137)	123 (51)		
8 x 1½	(200 x 38)			242 (233)	128 (53)		
12 x 1½	(300 x 38)			330 (317)	129 (54)		
2 x 2	(50 x 51)					139 (134)	127 (53)
4 x 2½	(100 x 64)					188 (181)	125 (52)
8 x 2½	(200 x 64)					295 (284)	129 (54)
12 x 3	(300 x 76)					359 (345)	125 (52)

Heat Loss (HL), Btu/hr•ft (W/m); Surface Temperature (ST), °F (°C). Design Conditions: Horizontal piping, 80°F (27°C) average ambient temperature, 0 mph windspeed, ASJ jacket.

Mean Temp. °F	k Btu•in/hr•ft²•°F	Mean Temp. °C	λ W/m•°C
50	0.22	10	0.032
75	0.23	25	0.034
100	0.24	50	0.037
150	0.27	100	0.043
200	0.29	125	0.047
250	0.32	150	0.051
300	0.35	175	0.056
350	0.39	200	0.062
400	0.43	225	0.068
450	0.48	250	0.075
500	0.54	275	0.082

NOTE: For R-value (RSI) determination, see page 15.

THICKNESS TO PREVENT SURFACE CONDENSATION

OWENS CORNING ASJ JACKET FOR UP TO 16" NPS (400 mm DN)[1], in (mm)

Ambient Temperature, °F	(°C)	Relative Humidity[2]	System Operating Temperatures 35°F (2°C)	45°F (7°C)	55°F (13°C)
110	(43)	50%–70%	1 (25)	1 (25)	1 (25)
		80%	1½ (38)	1½ (38)	1 (25)
		90%	3½ (89)	3 (76)	2½ (64)
100	(38)	50%–70%	1 (25)	1 (25)	1 (25)
		80%	1½ (38)	1½ (38)	1 (25)
		90%	3 (76)	3 (76)	2½ (64)
90	(32)	50%–70%	1 (25)	1 (25)	1 (25)
		80%	1½ (38)	1 (25)	1 (25)
		90%	3 (76)	2½ (64)	2 (51)
80	(27)	50%–80%	1 (25)	1 (25)	1 (25)
		90%	2½ (64)	2 (51)	1½ (38)
70	(21)	50%–80%	1 (25)	1 (25)	1 (25)
		90%	1½ (38)	1½ (38)	1 (25)

NOTE: Data generated using NAIMA 3E Plus computer program available at www.naima.org.

[1] For NPS (DN) greater than 16" (400 mm), please contact your local Owens Corning Representative.

[2] If humidity exceeds 90%, some condensation is to be expected; therefore, a coating of a mastic or PVC jacket overwrap is recommended as repeated or continual wetting of the ASJ jacket will degrade its vapor retarder performance.

APPLICATION RECOMMENDATIONS

- Hinged sections are opened, placed over the pipe, aligned and sealed or jacketed as required.
- *Fiberglas* SSL II insulation includes jacket and longitudinal lap with two adhesives separated by a release strip. Removing the release strip opens the insulation. After closing on the pipe and aligning, the adhesive strips are rubbed firmly together to close and seal. A two-part butt strip seal completes the closure.
- Application at ambient temperatures from 25°F (-4°C) to 110°F (43°C).
- "No Wrap" Pipe Insulation is designed for field jacketing with covering secured by wires or bands, and vapor sealed where required.