



INNOVATIONS FOR LIVING™

# FIBERGLAS™ Pipe Insulation

## Product Data Sheet



- Evolution™ - Paper-Free ASJ
- SSL II® - ASJ
- SSL® I - ASJ
- No-Wrap

### Description

Owens Corning FIBERGLAS™ Pipe Insulations are molded of heavy density resin bonded inorganic glass fibers. The one-piece, 36" (914mm) long, hinged sections are opened, placed over the pipe, closed and secured by means specific to the type as described below.

FIBERGLAS™ Pipe Insulation with Evolution™ Paper-Free ASJ is jacketed with durable, paper free all-service vapor retarder jacket. The SSL II® double adhesive closure provides positive mechanical and vapor sealing of the longitudinal jacket seam. All Evolution™ Paper-Free ASJ sizes come with the SSL II® closure system.

FIBERGLAS SSL II® Pipe Insulation is jacketed with a smooth, reinforced, wrinkle resistant all-service vapor retarder jacket (ASJ). This product has the same SSL II® closure system as Evolution™ Paper-Free ASJ and is

available in the most popular pipe sizes. For the larger ASJ sizes, FIBERGLAS™ Pipe Insulation is furnished with a SSL® I single adhesive lap seal.

Both systems include pressure sensitive butt strip seals that complete the positive closure system.

FIBERGLAS™ Pipe Insulation is also available without a jacket. "No Wrap" pipe insulation intended for field installation with jacketing appropriate to the vapor control, damage or corrosion resistance requirements of the application.

### 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.

### Product Attributes

#### Evolution™ Jacket

The jacket is over 3X tougher\* than standard ASJ. The paper free all service jacket does not support mold growth\*\* and is designed to have compatible finished job appearance with standard ASJ.

#### SSL II® Positive Closure System

The double adhesive lap seal and two-part butt strip seal provide effective long term vapor sealing of the longitudinal and butt joints. Positive closure is fast, neat and foolproof. There is no need for staples which promotes job site productivity.

#### Jacket and Lap Shipped Adhered

Short pieces of insulation can be

cut without jacket loss and the section will not come apart in handling. There are no "dog-ears" in or out of the carton. Dust and moisture cannot reach the lap seal. Butt strips come in sealed bags inside the carton so they can stay clean until the moment of use.

### Excellent Thermal Performance

FIBERGLAS™ Pipe Insulation's low thermal conductivity contributes to lower operating costs of heating and cooling equipment.

### Meets Model Code Fire Ratings

The flame spread rating of 25 or less and smoke developed rating of 50 or less usually means that FIBERGLAS™ Pipe Insulation will be granted immediate building code approval.

### Application Recommendations

The hinged sections of FIBERGLAS™ Pipe Insulation are opened, placed over the pipe, carefully aligned, and sealed or jacketed as required by the form of the insulation and the application.

All jacketed SSL II® Pipe Insulation is shipped with the jacket and longitudinal lap closed, the two adhesives separated by a release strip. The insulation is opened by pulling the release strip from between the two adhesive strips. The insulation is placed on the pipe, carefully aligned, and the two adhesives rubbed firmly together to close and seal. The two part butt strip seal completes the positive closure. Application may be at ambient temperatures from 25°F (-4°C) to 110°F (43°C).

\*Based on puncture resistance, burst strength and tensile strength testing.

\*\* Evolution™ Jacket does not support mold growth when tested in accordance with ASTM C1338.



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FIBERGLAS™ “No-Wrap” Pipe Insulation is designed for field-jacketing. The pipe covering is secured by wires or bands, and vapor sealed where required.

Outdoor applications must be protected from weather. If painting is required, use only water based latex paint.

### Specification Compliance

- ASTM C 547, Mineral Fiber Pipe Insulation, Type I to 850°F (454°C)
- ASTM C 1136, Flexible Low Permeance Vapor Retarders for Thermal Insulation: Types I-IV
- ASTM C 795, Thermal Insulation for Use in Contact with Austenitic Stainless Steel<sup>1</sup>
- MIL-I-22344D, Insulation, Pipe, Thermal, Fibrous Glass
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation<sup>1</sup>
- MIL-I-24244C (Ships) Insulation Material with Special Corrosion, Chloride, and Fluoride Requirements<sup>1</sup>
- U.S. Coast Guard Approval No. 164.009, Noncombustible Materials (no-wrap)
- CAN/CGSB-51.9 – Type I, Class 2<sup>2</sup>
- New York City MEA No. 344-83, 408-07-M
- NFPA 90A

### Availability

FIBERGLAS™ Pipe Insulations are available in thicknesses and for pipe sizes as follows<sup>1</sup>:

Insulation Thickness		Nominal Pipe Size	
in.	(mm)	in.	(mm)
½	(13)	½ - 2 ½	(15 - 65)
1	(25)	½ - 33	(15 - 825)
1 ½	(38)	½ - 33	(15 - 825)
2	(51)	½ - 33	(15 - 825)
2 ½	(64)	½ - 32	(15 - 800)
3	(76)	½ - 31	(15 - 775)
3 ½	(89)	½ - 30	(15 - 750)
4	(102)	½ - 29	(15 - 725)
4 ½	(114)	½ - 28	(15 - 700)
5	(127)	½ - 27	(15 - 675)
5 ½	(140)	6 - 26	(150 - 650)
6	(152)	6 - 25	(150 - 625)

<sup>1</sup>Please refer to product packaging and data guide for load factors, standard products, minimum order quantity and carton sizes. Contact your customer service representative for product leadtime.

### Physical Property Data

Property	Test Method	Value
Density (size dependent)	ASTM C302	3.5 to 5.5 pcf
Operating Temperature Range <sup>1</sup>	ASTM C 411	0°F to 850°F (-18°C to 454°C)
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
Burst Strength, min	ASTM D 774/D 774M	55 psi
Composite Surface Burning Characteristics <sup>2</sup>	UL 723, ASTM E 84 or CAN/ULC-S102-M	Flame spread 25 Smoke Developed 50

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

<sup>2</sup>The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E 84 or CAN/ULC-S102-M. 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

Mean Temperature °F	k Btu•in/hr•ft <sup>2</sup> •°F	Mean Temperature °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

Apparent thermal conductivity values 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.

#### Notes

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.



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### Personnel Protection Table

Thickness Required for Surface Temperatures ≤ 140 °F, inches (mm)<sup>1,2</sup>

Nominal Pipe Size		System Operating Temperatures °F (°C)											
in.	(mm)	200 °F (93 °C)	300 °F (149 °C)	400 °F (204 °C)	500 °F (260 °C)	600 °F (316 °C)	800 °F (427 °C)						
0.5	(15)	0.5	(15)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)
0.75	(20)	0.5	(15)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)
1	(25)	0.5	(15)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)
1.25	(32)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.0	(51)
1.5	(40)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.0	(51)
2	(50)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.0	(51)
2.5	(65)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.0	(51)
3	(80)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.5	(64)
4	(100)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.5	(64)
5	(125)	0.5	(15)	0.5	(15)	1.0	(25)	1.0	(25)	1.5	(38)	2.5	(64)
6	(150)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	2.5	(64)
7	(175)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	2.5	(64)
8	(200)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	2.5	(64)
9	(225)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	2.5	(64)
10	(250)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	2.5	(64)
12	(300)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	1.5	(38)	3.0	(76)
14	(350)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)
16	(400)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)
18	(450)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)
20	(500)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)
24	(600)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)
30	(750)	0.5	(15)	0.5	(15)	1.0	(25)	1.5	(38)	2.0	(51)	3.0	(76)

<sup>1</sup>Calculations estimated using NAIMA 3E Plus Version 4.0 Software. Fixed Design Conditions: Steel horizontal piping, 80°F (27°C) average ambient temperature, 0 mph wind speed and outer surface jacket emittance of 0.9. For alternate design conditions, contact your Owens Corning representative.

<sup>2</sup>Thermal conductivity values used in these calculations are subject to normal manufacturing tolerances.

### Thickness to Prevent Surface Condensation

Owens Corning ASJ Jacket for up to 16" NPS (400mm DN), in. (mm) <sup>1,2</sup>

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

<sup>1</sup>Calculations estimated using NAIMA 3E Plus version 4.0 software. Fixed design conditions: Steel Horizontal Piping, 16" NPS, 0mph wind speed, Outer Surface Jacket Emittance of 0.9.

<sup>2</sup>Thermal conductivity values used in these calculations are subject to normal manufacturing tolerances.



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No-Wrap pipe insulation is not yet GREENGUARD Certified.



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