



### High Temperature Pipe Insulation 1200

#### Uses

Owens Corning High Temperature Pipe Insulation 1200 provides superior thermal insulation performance for mechanical / power and process piping systems operating with continuous use surface temperatures from sub-ambient to 1,200°F (649°C). This molded pipe insulation is readily fabricated, cutting cleanly and easily with a knife. Very low in-service shrinkage helps prevent gaps from forming at joints, preventing costly thermal leaks. The insulation is designed to be field-jacketed.

#### Description

Owens Corning High Temperature Pipe Insulation 1200 is made of inorganic fibers derived from basalt, a volcanic rock, with a thermosetting resin binder. Advanced manufacturing technology ensures consistent product quality, with high fiber density and low shot content, for superior performance in high temperature thermal control and fire resistance applications.

#### Availability

Owens Corning High Temperature Pipe Insulation is available as 36-inch (914mm) sections in standard NPS pipe sizes from 1/2" (15mm) to 36" (900mm), and in thicknesses from 1" (25mm) to 5" (127mm) in 1/2" (13mm) increments. Sizes to 14" (350 mm) NPS are supplied in one piece, conveniently hinged. For larger pipe sizes up to 42" (1050mm), the insulation is supplied in two-piece half sections.

Also available are:

- Pipe insulation sections with offset joints at the butt ends, which save time and cost by eliminating double layer installation.
- Boiling Water Tested (BWT) pipe insulation, specially formulated to pass the U.S. Navy test for continued performance following intermittent flooding conditions.

#### Features and Related Benefits:

##### Superior thermal performance

Good thermal conductivity values help maximize control of heat loss, contributing to reduced operating costs and greater energy savings. High dimensional stability and low shrinkage reduce the potential for gaps forming at joints.

##### Good compressive strength

These molded pipe insulation sections maintain their structural integrity under severe operating conditions. Thickness stays uniform; there is less jacket damage.

##### Light weight, low dust

Easy to handle and fabricate, the insulation is readily cut with a knife; no sawing is required. Clean handling properties help reduce irritation, minimize job clean-up time and expense. Insulation may be installed directly on hot piping; system shut-down and staged heat-up are not necessary.

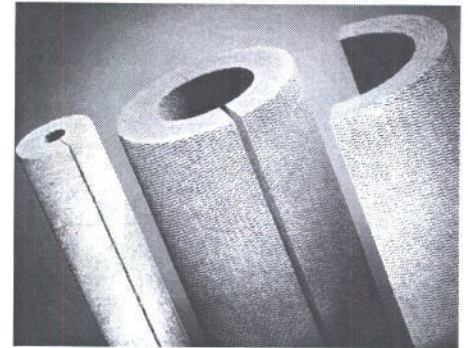
##### Non-combustible

These high temperature insulation products have flame spread ratings of 5 and smoke developed ratings of 0 when tested in accordance with ASTM E 84. They are rated noncombustible in accordance with ASTM E 136 and CAN4-S114M.

#### Typical physical properties

Property	Test Method	Specification
Maximum service temperature	ASTM C 411	Continuous use to 1,200°F (649°C)
Recovery after 10% compression		100%
In-service shrinkage	ASTM C 356	0% at 1,050°F (566°C) < 1% at 1,200°F (649°C)
Water vapor sorption	ASTM C 1104	< 1% by weight at 120°F (49°C), 95% R.H.
Surface burning characteristics	ASTM E 84, UL 723, CAN4-S102*	Flame spread, 5* Smoke developed, 0

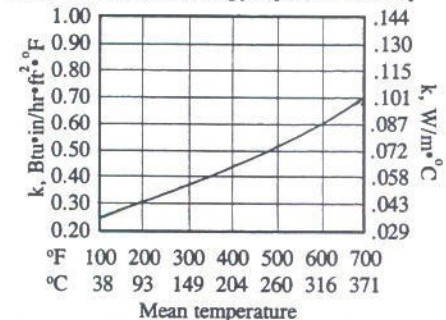
The surface burning characteristics of these products have been determined in accordance with ASTM E 84, UL 723, and CAN4-S102. These standards should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions 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.



##### Good physical and chemical properties

Thickness recovery after 10% compression is 100%. There's no loss of physical or thermal integrity from binder burn-out. Low water vapor sorption means these insulations will not mold or mildew. They will not promote or contribute to stress corrosion cracking of stainless steel.

##### Thermal conductivity, k (ASTM C 335)



(average of hot and cold surface temperatures)

**Thermal Performance, ASTM C 680:**  
**Heat Loss (HL), Btu/hr·ft<sup>2</sup> (W/m<sup>2</sup>)**  
**Surface Temperature (ST), °F (°C)**

NPS / Thickness	250°F (121°C)		600°F (316°C)		1050°F (566°C)	
	HL	ST	HL	ST	HL	ST
3" x 1" (75mm x 25mm)	51 (161)	97 (36)				
6" x 1" (150mm x 25mm)	89 (280)	101 (38)				
12" x 1.5" (300mm x 38mm)	102 (321)	95 (35)				
24" x 1.5" (600mm x 38mm)	194 (611)	98 (37)				
3" x 2" (75mm x 51mm)			135 (425)	111 (44)		
6" x 2" (150mm x 51mm)			217 (684)	116 (47)		
12" x 2.5" (300mm x 64mm)			298 (939)	113 (45)		
24" x 2.5" (600mm x 64mm)			539 (1698)	118 (48)		
3" x 4" (75mm x 102mm)					251 (791)	118 (48)
6" x 4" (150mm x 102mm)					372 (1172)	125 (52)
12" x 5" (300mm x 127mm)					489 (1540)	122 (50)
24" x 5" (600mm x 127mm)					830 (2615)	127 (53)

Design conditions: Horizontal piping, 80°F (27°C) average ambient temperature, 8 mph wind speed, 0.20 jacket emissivity.



Owens Corning High Temperature Pipe Insulation with offset joints at butt ends can save time by eliminating two layer installation.



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**Specification compliance**

Owens Corning High Temperature Pipe Insulation complies with the property requirements of the following specifications:

- ASTM C 547: Mineral Fiber Preformed Pipe Insulation, Types I and II
- ASTM C 585: Inner and Outer Diameters of Pipe Insulation
- ASTM C 795: Thermal Insulation For Use Over Austenitic Stainless Steel\*
- Mil. Spec. MIL-I-24244C (Ships): Insulation, Thermal, Special Corrosion Requirements\*
- Nuclear Regulatory Commission Guide 1.36: Non-Metallic Insulation\*
- Canadian General Standards Board CGSB 51.9-92, CAN4-S114M
- Canadian Coast Guard F1-96, Non-combustibility
- U. S. Coast Guard Approval No. 164.009, Noncombustible Materials

**Application recommendations**

Owens Corning High Temperature Pipe Insulation can be installed directly on heated piping. One piece hinged sections are opened, placed over the pipe, closed, and secured in place with wires, bands or tape. Two piece half sections are placed on the pipe with staggered joints and wired, banded, or taped in place. In multiple layer installations, each layer must be secured in place before the next layer is installed. Joints in multiple layer installations should be staggered to reduce heat flow. (Owens Corning High Temperature Pipe Insulation sections with offset joints at the butt ends may eliminate the need for multiple layer installation.)

The insulation may be finished with non-metallic, aluminum, stainless steel, or coated galvanized steel jacketing depending on requirements for physical abuse, weather, and chemical resistance. Jacketing may be secured using screws, rivets, or bands. If a vapor retarder is required, any screw or rivet penetrations must be sealed.

For temperatures over 400°F (204°C), good insulation practice suggests double layer application, regardless of insulation type. Single layer installation of any type of insulation material requires good workmanship to minimize heat loss and hot spots at insulation joints. These insulations may be installed in either single or multiple layers at all temperatures up to 1200°F (649°C).

**Thickness recommendations**

Owens Corning can provide a confidential computer analysis of insulation thickness required for any application, based on calculations performed in accordance with the method described in ASTM C 680.

\*Preproduction qualification testing complete and on file. Chemical analysis of each production lot required for total conformance.