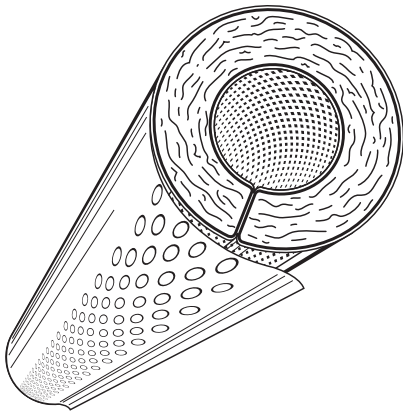




INNOVATIONS FOR LIVING®

VaporWick® Pipe Insulation

Product Data Sheet



Eliminate Moisture Problems Caused By Condensation

Owens Corning™ VaporWick® Pipe Insulation is an innovative new insulation product designed specifically for below-ambient temperature applications in severe hot/humid operating environments. The heart of the system is a wick material that transports condensed water to the outside of the system for evaporation to the atmosphere. The wick keeps the fiberglass insulation dry, preventing dripping and allowing the insulation to perform effectively over the life of the project.

VaporWick® Pipe Insulation's one-piece, 36" (914mm) long molded sections come in standard sizes and are composed of heavy density fiberglass insulation with an organic binder. The synthetic wicking material is factory-installed on the inner surface of the assembly. The sections are opened, placed over the pipe, closed and secured with a pressure-sensitive adhesive closure. The insulation is factory-

jacketed with a resilient, tough, soil-resistant polymer facing that matches standard PVC fitting covers. Auxiliary items include rolls of wick material for wrapping elbows and valves; VaporWick® Pipe Insulation evaporation skirt (hula skirt) for verticals; and matching butt joint sealing tape for system closure.

Where It's Used

VaporWick® Pipe Insulation is engineered for insulation of cold piping and dual temperature piping operating at temperatures from 32°F (0°C) to 220°F (104°C) in buildings and industrial facilities.

How It Works

The VaporWick® System was developed for piping systems that operate at below ambient temperatures, which present special considerations due to the possibility of water vapor migration to the cold pipe surface. If the operating temperature of the piping system is below the dew point of the ambient air, moisture will condense on the cold pipe surface. With time, the condensed water will accumulate, reducing the R-value of the insulation, and possibly resulting in dripping, which can stain ceiling tiles and damage building contents below.

The problem is not limited to open cell insulation materials. Many closed cell insulations have low water vapor permeability, yet water buildup is a serious problem due to incomplete sealing at longitudinal seams and butt joints.

Traditionally, designers have relied on vapor retarders and mastics or other sealants to slow the ingress of moisture. This approach is highly dependent on the skill and experience of the installers. In contrast, VaporWick® Pipe Insulation incorporates a patented concept that utilizes a unique wicking material to remove condensed water from the system, keeping the insulation dry. Water vapor that enters the system and condenses on the cold pipe surface is removed to the outer surface by capillary action, where it then evaporates to the ambient air.

Performance Attributes

Keeps Insulation Dry

VaporWick® Pipe Insulation incorporates a specially designed wicking material that absorbs condensed water from the pipe surface and wicks it to the outside, keeping the insulation dry and minimizing any loss in insulating capability. This prevents dripping and the associated staining of ceiling tiles and damage to the building contents.

Dual Temperature Applications

VaporWick® Pipe Insulation is rated for operating temperatures which range from 32°F to 220°F, making it ideal for dual temperature installations.

Meets Model Code Fire Requirements

UL Classified for Surface Burning Characteristics. Flame spread rating of 25 or less, and smoke development rating of 50 or less means that VaporWick® Pipe Insulation will be granted



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immediate building code approval for use in air plenums and other critical locations.

Excellent Thermal Value

VaporWick® Pipe Insulation's low thermal conductivity contributes to lower operating costs at a favorable installed cost/performance ratio.

Can Be Installed Directly Over Wet Piping

Self-drying feature allows product to be installed on wet pipes. Systems do not need to be shut down during installation of the VaporWick® System.

Self-sealing Lap Seal

Positive closure is fast, neat, and foolproof. No need for staples or mastic.

Meets Requirements for Mold and Fungi Resistance

VaporWick® Pipe Insulation provides no sustenance for mold to propagate and meets the standard ASTM test for fungi resistance.

Specification Compliance

- ASTM C 547, Mineral Fiber Pre-Formed Pipe Insulation, Type I*
- ASTM C 795, Thermal Insulation for Use Over austenitic Stainless Steel**
- ASTM C 585, Inner and Outer Diameters of Rigid Thermal Insulation for Pipe and Tubing
- CAN/CGSB-51.9-92, Type I***
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation**

Physical Property Data

Property	Test Method	Value
Operating Temperature Range		32°F to 220°F (0°C to 104°C)
Jacket Permeance	ASTM E96, Desiccant method	< 0.15 perm
Jacket Temperature Limitation	ASTM C 1136	225°F (107°C)
Burst Strength, min	ASTM D 774/D 774M	55 psi
Corrosion Resistance	ASTM C 665	Meets requirements
Fungi Resistance	ASTM C 1338	Meets requirements
Composite Surface Burning Characteristics	ASTM E 84, UL 723, and CAN/ULC-S102 ¹	
Flame Spread		< 25
Smoke Development		< 50

1. The surface burning characteristics of these products have been determined in accordance with ASTM E 84, UL 723, and CAN/ULC-S 102. 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.

Product Availability

VaporWick® Pipe Insulations are available in thickness and for pipe sizes as follows.

Insulation Thickness		Nominal Pipe Sizes	
Inches	(mm)	NPS, inches	(DN, mm)
1	(25)	½ -24	(15-600)
1½	(38)	½ -24	(15-600)
2	(51)	½ -30	(15-762)
2½	(64)	2-30	(50-762)
3	(76)	3-30	(75-762)

For additional sizes, check with your Owens Corning representative.

Thermal Conductivity

Mean Temp.	k	Mean temp	λ
°F	Btu•in/hr•ft²•°F	°C	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

Note: Apparent thermal conductivity data 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.



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Thickness To Prevent Surface Condensation

VaporWick® Pipe Insulation does not prevent surface condensation. Sufficient thickness must be selected to minimize condensation on the outer surface. Use the following table for guidance.

Fluid Temperature 35°F		Pipe Size, NPS									
Ambient Temp. °F	Relative Humidity %	½"	1"	1½"	2"	4"	6"	8"	10"	12"	
80	70										
	80								1½	1½	
	90	1½	1½	2	2	2	2½	2½	2½	2½	
90	70										
	80						1½	1½	1½	1½	
	90	2	2	2	2½	3	3	3	3	3½	

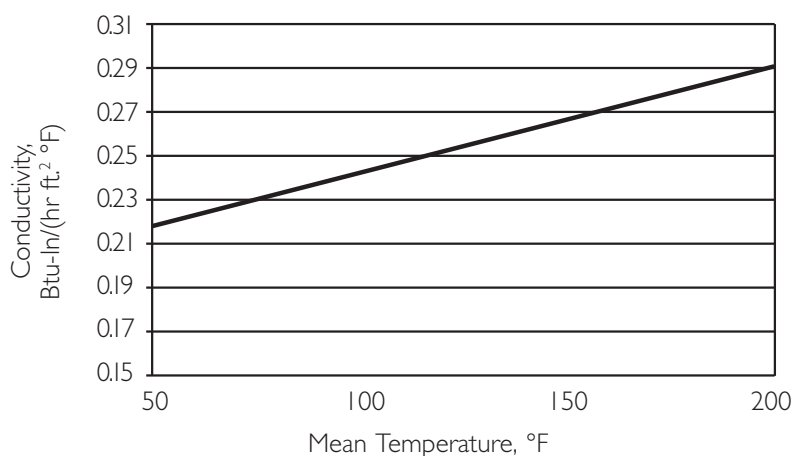
Fluid Temperature 45°F		Pipe Size, NPS									
Ambient Temp. °F	Relative Humidity %	½"	1"	1½"	2"	4"	6"	8"	10"	12"	
80	70										
	80										
	90		1½	1½	1½	1½	2	2	2	2	
90	70										
	80										
	90	1½	2	2	2	2½	2½	2½	2½	3	

Fluid Temperature 55°F		Pipe Size, NPS									
Ambient Temp. °F	Relative Humidity %	½"	1"	1½"	2"	4"	6"	8"	10"	12"	
80	70										
	80										
	90					1½	1½	1½	1½	1½	
90	70										
	80										
	90	1½	1½	1½	1½	2	2	2	2	2	

Note: All thicknesses are in inches rounded up to the nearest available VaporWick® Pipe Insulation size.

Recommendations were developed using the NAIMA 3E Plus® computer program, assuming wind speed of 0 mph and outer jacket emittance of 0.9.

VaporWick® Pipe Insulation Thermal Conductivity



- Mil. Spec. MIL-I22344D, Insulation, Pipe, Thermal, Fibrous Glass

- NFPA 90A

- NYC MEA No. 349-02M

* Exception required for max use temp
 ** Preproduction qualification testing complete and on file. Chemical analysis of each production lot required for total conformance.
 *** Standard obsolete. Replaced by ASTM C 547.

Installation Recommendations

Installation of VaporWick® Pipe Insulation is similar to regular fiberglass pipe covering. See VaporWick® Pipe Insulation Installation Instructions for complete details (Publication No. 44645).

The VaporWick® System can be applied on new and retrofit jobs. Unlike traditional insulation, this system may readily be installed on operating systems even if the pipes are wet and slightly corroded. Caution is needed on severely corroded sections as pipe diameters may exceed those listed in ASTM C 585. This may cause an improper pipe fit and result in overloading of the system and/or failure of the closure tape resulting in system failure. For severely corroded pipes, rust and scale should be removed before installation. Ensure that the recommended thickness has been specified to prevent surface condensation.

The VaporWick® System is not recommended for outdoors or exposed piping where additional jacket finish is required. Application should be at temperatures between 25°F (-4°C) and 110°F (44°C).



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The evaporation holes must remain uncovered and unpainted at all times after installation. Painting or covering over the evaporation holes will defeat the function of the system. Use of stickers, labels, or colored tape is recommended for pipe service identification.

Disclaimer of Liability

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