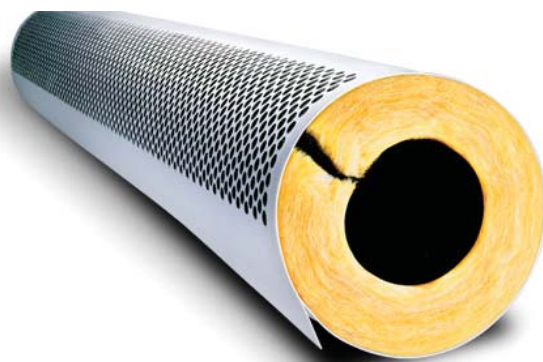




Fiberglas™ VaporWick® Pipe Insulation



Description

Owens Corning® VaporWick® Pipe Insulation is an innovative 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.

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)	1/2-24	(15-600)
1 1/2	(38)	1/2-24	(15-600)
2	(51)	1/2-30	(15-762)
2 1/2	(64)	2-30	(50-762)
3	(76)	3-30	(75-762)

For additional sizes, check with your Owens Corning representative.

Physical Properties

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 C1136	225°F (107°C)
Burst Strength, min	ASTM D774/ D774M	55 psi
Corrosion Resistance	ASTM C665	Meets requirements
Fungi Resistance	ASTM C1338	Meets requirements
Composite Surface Burning Characteristics ¹	ASTM E84, UL 723, and CAN/ULC-S102	< 25
Flame Spread		< 25
Smoke Developed		< 50

1. The surface burning characteristics of these products have been determined in accordance with ASTM E84, UL 723, and 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.

Features

- Keeps insulation dry by incorporating 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
- VaporWick® Pipe Insulation is rated for operating temperatures which range from 32°F to 220°F, making it ideal for dual temperature installations
- 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 immediate building code approval for use in air plenums and other critical locations
- Low thermal conductivity contributes to lower operating costs at a favorable installed cost/performance ratio
- 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
- Positive closure is fast, neat, and foolproof. No need for staples or mastic
- VaporWick® Pipe Insulation provides no sustenance for mold to propagate and meets the standard ASTM test for fungi resistance

Thermal Conductivity

Mean Temp. °F	k Btu·in/ hr·ft ² ·°F	Mean Temp. °C	λ W/m ² ·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: Values are nominal, subject to normal testing and manufacturing tolerances.

Technical Information

- 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.

Applications

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

Installation

- 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 C585. 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)
- 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

Standards, Codes Compliance

- ASTM C547, Mineral Fiber Pre-Formed Pipe Insulation, Type 1²
- ASTM C795, Thermal Insulation for Use Over austenitic Stainless Steel³
- ASTM C585, Inner and Outer Diameters of Rigid Thermal Insulation for Pipe and Tubing
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation³
- NFPA 90A
- NYC MEA No. 349-02M

2. Exception required for max use temp.

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

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									
Ambient Temp. °F	Relative Humidity %	Pipe Size, NPS									
		1/2"	1"	1 1/2"	2"	4"	6"	8"	10"	12"	
80	70	1	1	1	1	1	1	1	1	1	1
	80	1	1	1	1	1	1	1	1 1/2	1 1/2	
	90	1 1/2	1 1/2	2	2	2	2	2 1/2	2 1/2	2 1/2	
90	70	1	1	1	1	1	1	1	1	1	
	80	1	1	1	1	1	1 1/2	1 1/2	1 1/2	1 1/2	
	90	2	2	2	2 1/2	3	3	3	3	3 1/2	

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

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

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at www.owenscorning.com.

Certifications and Sustainable Features

- Certified by SCS Global Services to contain a minimum of 53% recycled glass content, 31% pre-consumer and 22% post-consumer
- GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Material Health Certificate from Cradle to Cradle Products Innovation Institute



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