



Guide Specifications

PROJECT ENGINEER RESPONSIBILITY: This is a general specification guide, intended to be used by experienced construction professionals, in conjunction with good construction practice and professional judgment. This guide is to aid in the creation of a complete building specification that is to be fully reviewed and edited by the engineer. Sections of this guide should be included, edited, or omitted based on the requirements of a specific project. It is the responsibility of both the specifier and the purchaser to determine if a product or system is suitable for its intended use. Neither Owens Corning, nor any of its subsidiary or affiliated companies, assume any responsibility for the content of this specification guide relative to actual projects and specifically disclaim any and all liability for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or other construction related details, whether based upon the information provided by Owens Corning or otherwise.

SECTION 22 07 19

PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Provide insulation for the following piping:

Note to Specifier: The following temperature ranges are typical for these systems. However, if project requirements call for service temperatures outside the ranges listed, consult the manufacturer's published data to determine operating temperature limitations of the insulation product or products under consideration.

1. Cold Piping Systems (chilled water, brine, refrigerant), 32°F (0C) to 65°F (18°C).
2. Dual Temperature Systems, 32°F (0°C) to 220°F (104°C).

1.2 REFERENCES

- A. Materials shall meet the property requirements of one or more of the following specifications as applicable to the specific product or end use:
1. American Society for Testing of Materials (ASTM):
 - a. ASTM C547, Standard Specification for Mineral Fiber Pipe Insulation.
 - b. ASTM C585, Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
 - c. ASTM C1338, Standard Test Method for Determining the Fungi Resistance of Insulation Materials and Facings.
 - d. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 2. Underwriters Laboratories (UL)
 - a. UL 723, Test for Surface Burning Characteristics of Building Materials.

1.3 DEFINITIONS

- A. The term "mineral fiber" as defined by the above specifications includes fibers manufactured of glass, rock, or slag processed from a molten state, with or without binder.



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Guide Specifications

1.4 SYSTEM PERFORMANCE

- A. Insulation materials furnished and installed hereunder should meet the minimum thickness requirements of American Society of Heating, Refrigeration, and Air Conditioning Engineers ASHRAE 90.1 (2010), "Energy Efficient Design of New Buildings." However, if other factors such as condensation control or personnel protection are to be considered, the selection of the thickness of insulation should satisfy the controlling factor.

1.5 SUBMITTALS

- A. Product Data: Submit product characteristics, performance criteria, and limitations, including installation instructions, for each type of product indicated.
 - 1. For adhesives and sealants, submit documentation including printed statement of VOC content.
- B. Sustainable Design Submittals: Submit manufacturer's sustainable design certifications as specified.

1.6 DELIVERY AND STORAGE OF MATERIALS

- A. Delivery: Deliver materials in manufacturer's original packaging.
- B. Storage: Store and protect products in accordance with manufacturer's instructions. Store in a dry indoors location. Protect insulation materials from moisture and soiling.
- C. Do not install insulation that has been damaged or wet. Remove it from jobsite.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Owens Corning Insulating Systems, LLC, Toledo, OH 43659; www.owenscorning.com.

2.2 PIPE INSULATION

- A. General:
 - 1. Owens Corning™ VaporWick® Pipe Insulation is not known to contain penta-, octa-, or deca-brominated diphenyl flame retardant substances, such as deca-Bromine (deca-BDE).
- B. Certifications:
 - 1. VaporWick® Pipe Insulation is GREENGUARD Indoor Air Quality Certified® and GREENGUARD Gold Certified.
 - 2. VaporWick® Pipe Insulation is certified by SCS Global Services to contain a minimum of 53% recycled glass content, 31% pre-consumer and 22% post-consumer.
 - 3. VaporWick® Pipe Insulation is UL listed and labeled.
- C. Molded Fibrous Glass Pipe Insulation: ASTM C 547 and ASTM C 585, for sizes required, self-drying type with vapor retarder.
 - 1. Acceptable Product: Owens Corning™ VaporWick® Pipe Insulation.



Plumbing Piping Insulation – VaporWick® Pipe Insulation

Guide Specifications

2. Vapor Retarder: Factory-applied integral vapor retarder, extending under the evaporator area of the wick, and covering not less than 98% of the circumference of the product. Exposed evaporator area shall be not less than 0.1 sq. ft./linear ft. of product.
 - a. Fungi Resistant: ASTM C 1338.

2.3 ACCESSORY MATERIALS

- A. Accessories: Provide accessories per insulating system manufacturer's recommendations, including the following:
 1. Wrapping Materials: Owens Corning™ VaporWick® Pipe Insulation, wick material for wrapping valves and fittings.
 2. Closure Materials: Owens Corning™ VaporWick® Pipe Insulation Sealing Tape, and mastics.
 3. Support Materials: Hanger straps, hanger rods, saddles, support high-density blocks, and support rings.
- B. Adhesives For Indoor Applications: VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that materials and accessories can be installed in accordance with Contract Documents and material manufacturers' recommendations.
- B. Verify, by inspecting product labeling, submittal data, and/or certifications which may accompany the shipments, that materials and accessories to be installed on the project comply with applicable specifications and standards and meet specified thermal and physical properties.
- C. Before starting work under this section, carefully inspect the site and installed work of other trades and verify that such work is complete to the point where installation of materials and accessories under this section can begin.

3.2 PREPARATION

- A. Ensure that surfaces over which insulation is to be installed are clean and dry.
- B. Ensure that insulation is clean, dry, and in good mechanical condition with factory-applied vapor or weather barriers intact and undamaged. Wet, dirty, or damaged insulation shall not be acceptable for installation.
- C. Ensure that pressure testing of piping and fittings has been completed prior to installing insulation.

3.3 SAFETY PRECAUTIONS

- A. Insulation contractor's employees shall be properly protected during installation of insulation. Protection shall include proper attire when handling and applying insulation materials, and shall include, but not be limited to, disposable dust respirators, gloves, hard hats, and eye protection.



Plumbing Piping Insulation – VaporWick® Pipe Insulation

Guide Specifications

3.4 INSTALLATION

- A. Installation needs to be performed by an Owens Corning trained installer. General: Install insulation materials and accessories in accordance with Contract Documents and manufacturer's published instructions to ensure that it will serve its intended purpose.
1. Install insulation on piping subsequent to painting and acceptance tests.
 2. Install insulation materials with smooth and even surfaces. Insulate each continuous run of piping with full-length units of insulation, with single cut piece to complete run. Do not use cut pieces or scraps abutting each other. Butt insulation joints firmly to ensure complete, tight fit over piping surfaces.
- B. Support piping so that the insulation is not compromised by the hanger or the effects of the hanger. Provide hanger spacing so that the circumferential joint may be made outside the hanger. Cover the evaporating holes with sealing tape for the length of the metal saddle.
1. Piping systems 3 in (75 mm) in diameter or less, insulated with fiberglass pipe insulation, may be supported by placing saddles of the proper length and spacing under the insulation.
 2. For hot or cold piping systems larger than 3 in (75 mm) in diameter, operating at temperatures less than +200°F (93°C) and insulated with fiberglass, provide inserts such as foam or high-density fiberglass with sufficient compressive strength to support the weight of the piping system.
 3. At vertical runs, provide insulation support rings, as indicated on Drawings.
- C. Fittings:
1. Wrap valves, fittings, and similar items in each piping system with wicking material to ensure a continuous path (100% coverage) for the removal of condensation, prior to installing insulation.
 2. Cover valves, fittings, and similar items in each piping system using one of the following:
 - a. Mitered sections of insulation equivalent in thickness and composition to that installed on straight pipe runs.
 - b. PVC Fitting Covers insulated with material equal in thickness and composition to adjoining insulation.
 3. Seal fitting joints with vapor retarder sealing tapes or mastics.
 4. Use standard oversizing practices for valves and flanges.
- D. Penetrations: Extend piping insulation without interruption through walls, floors and similar piping penetrations, except where otherwise specified.
- E. Accessory Materials (Midwest): Install in conformance with the current edition of the Midwest Insulation Contractors Association (MICA) "Commercial & Industrial Insulation Standards."

3.5 FIELD QUALITY ASSURANCE

- A. Upon completion of insulation work, visually inspect the work and verify that it has been correctly installed. This may be done while work is in progress, to assure compliance with requirements herein to cover and protect insulation materials during installation.

3.6 PROTECTION

- A. Replace damaged insulation, which cannot be satisfactorily repaired, including insulation with vapor barrier damage and moisture-saturated insulation.



Plumbing Piping Insulation – VaporWick® Pipe Insulation

Guide Specifications

- B. The insulation contractor shall advise the general and the mechanical contractor as to requirements for protection of the insulation work during the remainder of the construction period, to avoid damage and deterioration of the finished insulation work.

END OF SECTION

Pub. No. 10019401
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