



PLUMBING PIPING INSULATION – FIBERGLAS™ REMOVABLE PADS INSULATION

General Specification Guide SECTION 22 07 19

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 the following:

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 (0°C) to 65°F (18°C).
2. Dual Temperature Systems, 32°F (0°C) to 220°F (104°C).
3. Heating Systems (steam, steam condensate, hot water), ambient up to 450°F (232°C).
4. Domestic and Service Hot Water Systems, ambient up to 180°F (82°C).

B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:

1. Drainage piping located in crawl spaces.
2. Underground piping.
3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

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 C553, Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
 - b. ASTM C795, Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.
 - c. ASTM C1338, Standard Test method for Determining the Fungi Resistance of Insulation Materials and Facings.
 - d. ASTM C1617, Standard Practice for Quantitative Accelerated Laboratory Evaluation of Extraction Solutions Containing Ions Leached from Thermal Insulation on Aqueous Corrosion of Metals.
 - e. ASTM C1695, Standard Specification for Fabrication of Flexible Removable and Reusable Blanket Insulation for Hot Service.
 - f. 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.
3. National Fire Protection Association (NFPA):
 - a. NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems.

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.

1.4 SYSTEM PERFORMANCE

- A. The recommendation contained within this guild is for the UtiliCore® L-Series and HP5 Mat that perform as the thermal component and part of the acoustical system in removable pads.
- B. UtiliCore® product line is used by removable pad manufacturers. All installation and maintenance of these pads needs to follow the pad manufacturer's recommendations.
- C. 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, "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.
- D. Chilled System – For condensation control: To specify the right insulation thickness for condensation control or energy conservation, use the NAIMA 3E Plus® insulation thickness software program. When using the program to determine the right insulation thickness for condensation control, use the design criteria (temperature and humidity) that represents the worst-case scenario for the conditions.
 - The program can be downloaded free of charge from NAIMA at www.pipeinsulation.org or obtained from Owens Corning.
 - In most cases, condensation control as calculated by 3E Plus® can be thicker than what may be stated in the energy tables of ASHRAE Standard 90.1 and the IECC. In all cases, install the thicker requirement between energy recommendation or 3E Plus® recommendation for condensation control. This ensures that insulation thickness will be sufficient to avoid condensation in design conditions.
- E. When Personnel Protection is to be considered, the selection of the thickness of insulation should satisfy the controlling factor of below 140°F (60°C). Use NAIMA 3E Plus® to aid in selecting the correct thickness for Personnel Protection.

1.5 ADMINISTRATIVE REQUIREMENTS

- 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. Shop Drawings:
 1. Detail application of protective shields, saddles, and inserts at hangers.
- C. Sustainable Design Submittals: Submit manufacturer's sustainable design certifications as specified.
- D. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who has been trained by and is acceptable to manufacturer to install manufacturer's products.

1.7 DELIVERY AND STORAGE OF MATERIALS

- A. Delivery: Deliver materials in manufacturer's original packaging.
- B. Storage: 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 job site.
 1. An exception may be allowed in cases where the contractor is able to demonstrate that wet insulation, when fully dried out (either before installation or afterward, following exposure to system operating temperatures), will provide installed performance that is equivalent in respects to new, completely dry insulation. In such cases, consult the insulation manufacturer for technical assistance.

PART 2 – PRODUCTS

2.1 MANUFACTURER

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

2.2 INSULATION MATERIALS

- A. General:
 1. Products shall not contain asbestos, lead, mercury, or mercury compounds.
 2. Owens Corning® UtiliCore® product line insulation is not known to contain penta-, octa, or deca-brominated diphenyl flame retardant substances, such as deca-Bromine (deca-BDE).
 3. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C795.

- B. Certifications:
 - 1. Owens Corning® UtiliCore® L-Series and HP5 Mat Insulation is GREENGUARD Indoor Air Quality Certified® and GREENGUARD Gold Certified.
 - 2. Owens Corning® UtiliCore® L-Series and HP5 Mat Insulation are certified by SCS Global Services to contain a minimum of 53% recycled glass content, 31% pre-consumer, and 22% post-consumer.
 - 3. Owens Corning® UtiliCore® L-Series and HP5 Mat Insulation are UL listed and labeled.
 - 4. Underwriters Laboratories (UL) Listed and Labeled: File No. R3576.
- C. UtiliCore® insulation product: Comply with ASTM C553, Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications, Types I, II, III, IV, V, and VI.
 - 1. For indoor systems operating at temperatures from 0°F (-18°C) to 1,000°F (538°C), no heat-up schedule required.
- D. UtiliCore® HP5 Mat insulation product: Comply with ASTM C553, Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications, Types I, II, III, IV, V, and VI.
 - 1. For indoor systems operating at temperatures from 0°F (-18°C) to 1,100°F (593°C), no heat-up schedule required.

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 that 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 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.

3.3 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.
- B. All work shall conform to accepted industry standards and to manufacturers recommendations. Owens Corning recommends the use of certified mechanical insulation inspectors who maintain current certification by the National Insulation Association (NIA) or the British Columbia Insulation Contractors Association (BCICA) Quality Assurance Certificate Program throughout the project. They will inspect and verify that the materials and the total insulation systems have been installed correctly in accordance with the specifications.

3.4 PROTECTION

- A. 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.

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