

SECTION 07 21 00 -THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Concealed building insulation.
 - 2. Sound attenuation insulation.
- B. Related Sections include the following:
 - 1. Division 09 Section "Gypsum Board" for installation in wood-framed assemblies of insulation specified by referencing this Section.
 - 2. Division 22 Section "Plumbing Insulation."
 - 3. Division 23 Section "HVAC Insulation."

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
 - 1. Product Data for Credits MR 4.1 and MR 4.2: For products having recycled content, submit invoices and documentation from manufacturer indicating percentages (by weight) of post-consumer and pre-consumer recycled content. Include material costs (taxes, fees, shipping, labor, profit, etc. not included) for each product having recycled content.
 - 2. Manufacturing Data for Credits MR 5.1 and MR5.2: Submit invoices and documentation indicating location of manufacture and locations of extraction and/or harvest for each raw material sourced within 500 miles of the project site. Indicate method of calculating distance from location to project site.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for insulation products.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.
- C. Recycled Content: Provide glass and slag-wool-fiber/rock-wool-fiber insulation with recycled content so post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 30 percent.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- C. Package for delivery to best protect product while using the least amount of single-use packaging as possible. If possible, package and ship product using reusable blankets and fabrics or reusable cardboard and crate systems.
- B. Protect materials against weather and contact with damp or wet surfaces from time of delivery through time of installation. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes.
- C. Deliver materials only when environmental conditions meet requirements specified for installation areas. If materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.
- D. When storing prior to installation, raise off floor on pallets, stack flat, wrap weather-tight, and provide for air circulation within and around stacks and under temporary coverings.
- E. Do not store materials near other materials that may off-gas or emit harmful fumes, such as kerosene heaters, fresh paint, adhesives, etc.
- F. Do not allow materials to become damp. Maintain temperatures at 60°F or higher, and humidity between 20% and 60% prior to, during and after installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Products: Subject to compliance with requirements, provide one of the products specified.

2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 GLASS-FIBER BLANKET INSULATION

- A. Products: Subject to compliance with requirements, provide one of the following:
 1. Johns Manville; MR Faced Batts and/or ComfortTherm Batts/Rolls
 2. Owens Corning; Sonobatts (unfaced) and/or Thermal Batts (unfaced)
- B. Recycled Content: Provide insulation with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 22.5 percent.

2.3 AUXILIARY INSULATING MATERIALS

- A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by insulation manufacturers for sealing joints and penetrations in vapor-retarder facings.
- B. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates. Adhesive must comply with the VOC levels of the Air Quality Management District, Rule 1168, for the requirements in LEED IEQ credit 4.1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and for other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.

3.3 DELIVERY, STORAGE AND HANDLING

- A. Package for delivery to best protect materials while using the least amount of single-use packaging as possible. If possible, package and ship product using reusable blankets and fabrics or reusable cardboard and crate systems.
- B. Protect materials against weather and contact with damp or wet surfaces from time of delivery through time of installation. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes.
- C. Deliver materials only when environmental conditions meet requirements specified for installation areas. If materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

- D. When storing prior to installation, raise off floor on pallets and wrap weather-tight.
- E. Do not store materials near other materials that may off-gas or emit harmful fumes, such as kerosene heaters, fresh paint, adhesives, etc.
- F. Do not allow materials to become damp. Maintain temperatures at 60°F or higher, and humidity between 20% and 60% prior to, during and after installation

3.4 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
- E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.5 WASTE MANAGEMENT

- A. Separate and recycle waste materials in accordance with the Waste Management Plan and to the maximum extent possible.
- B. Close and tightly seal all partly used adhesive containers and store protected in well-ventilated, fire-safe area at moderate temperature. Set aside for reuse by Owner or deliver to MRWMD's Last Chance Mercantile.

END SECTION