

SECTION 072100

THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Cavity wall building insulation.
- 2. Sound attenuation insulation.

- B. Related sections include the following:

- 1. Division 05 Section "Cold-Formed Metal Framing" for installation in exterior non-bearing metal-framed cavity walls of insulation specified in this section.
- 2. Division 07 Section "SBS Modified Bituminous Membrane Roofing" for rigid foam insulation specified as part of the roofing system.
- 3. Division 07 Section "Fire-Resistive Joint Systems" for insulation installed as part of a perimeter fire-resistive joint system.
- 4. Division 07 Section "Fluid-Applied Vapor-Retarding Air Barrier Membrane" for rigid foam insulation applied to the outside face of exterior unit masonry walls.
- 5. Division 09 Sections "Gypsum Board" and "Gypsum Board Shaft-Wall Assemblies" for installation in metal-framed assemblies of insulation specified by in this Section.
- 6. Division 15 Section "Mechanical Insulation."

1.3 DEFINITIONS

- A. Mineral-fiber Insulation: Formaldehyde-free insulation composed of rock-wool fibers, slag-wool fibers, or glass fibers; produced in blankets with latter formed into batts (flat-cut lengths) or rolls. Glass fibers are bonded with an acrylic thermosetting binder, in lieu of conventional formaldehyde-based type.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for insulation products.

1.5 DELIVERY, STORAGE, AND HANDLING

- 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-Resistive Ratings: ASMT E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during 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. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2.2 GLASS-FIBER BLANKET INSULATION

- A. Available Manufacturers:
 - 1. CertainTeed Corporation.
 - 2. Guardian Fiberglass, Inc.
 - 3. Johns Mansville.
 - 4. Knauf Fiber Glass.
 - 5. Owens Corning.

- B. Faced, Glass-fiber Blanket Insulation: ASTM C 665, Type II (blankets with reflective membrane facing), Class A (membrane-faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier), faced with foil-scrim-kraft on 1 face.
- C. Where glass-fiber blanket insulation is indicated by the following thicknesses, provide blankets in batt or roll form with thermal resistances indicated:
 - 1. 3 5/8 inches (92 mm) thick with a thermal resistance of 13 deg F x h x sq.ft./Btu at 75 Deg F (2.3 K x sq. ft. m/W at 24 deg C) for use in insulating inside face of below grade concrete walls.
 - 2. 6-1/2 inches (140 mm) thick with a thermal resistance of 19 deg F x h x sq. ft./Btu at 75 def F (3/3 K x sq. ft. m/W at 24 deg C) for use at exterior metal stud walls.

2.3 GLASS-FIBER SOUND ATTENUATION BLANKET INSULATION

- A. Available Manufacturers:
 - 1. CertainTeed Corporation.
 - 2. Guardian Fiberglass, Inc.
 - 3. Johns Mansville.
 - 4. Knauf Fiber Glass.
 - 5. Owens Corning.
- B. Unfaced, Glass-fiber Blanket Insulation: ASTM C 665 Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50 respectively; passing ASMT E 136 for combustion characteristics.
- C. Provide blankets in batt or roll form meeting ASTM E 190 and E 143 for sound absorbent quality:
 - 1. 3 5/8 inches (92 mm) thick with a sound transmission class (STC) rating of 49, when used in the cavity of 3 5/8 inch metal stud partition with a layer of 5/8 inch gypsum board on each side.

2.4 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.

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.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

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

3.3 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.
- F. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated.
- G. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- H. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

3.4 PROTECTION

- A. Protect installed insulation vapor retarder facings from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100