

SECTION 07 21 11
BUILDING INSULATION

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. This Section includes specifications for thermal insulation for roof attic spaces and exterior walls of station structures and other buildings as indicated.
- B. This Section also includes acoustical (sound-retardant) insulation for interior walls and partitions, furred spaces, and ceilings as indicated.

1.02 MEASUREMENT AND PAYMENT

- A. General: Building insulation will not be measured separately for payment but will be paid for as part of the Contract lump sum price for Architectural Work.

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM C553 Specification for Mineral Fiber Blanket and Thermal Insulation for Commercial and Industrial Applications
 - 2. ASTM C665 Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
 - 3. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Fire-Retardant Requirements: Insulation shall have a flame-spread rating of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E84.
- B. Thermal Insulation: Fiberglass or mineral-fiber foil-faced standard building insulation with vapor barrier and flanges for fastening, meeting requirements of ASTM C553 or ASTM C665, as applicable, minimum thermal resistance, R value of 19 with minimum nominal installed thickness of six inches for attic spaces (underside of roof decks), and minimum thermal resistance, R value of 11 with minimum nominal installed thickness of three inches for exterior walls.
- C. Acoustical Insulation: Fiberglass or mineral-fiber foil-faced or unfaced sound-attenuation batts or blankets for tight friction fit between framing members, meeting

requirements of ASTM C553 or ASTM C665, as applicable. Provide minimum three-inch thick batts or blankets for furred spaces, stud walls, and spaces above suspended ceilings. Insulation shall provide a minimum sound transmission class (STC) assembly rating of 50 (45 if field tested) when installed in standard 3-5/8-inch steel-stud wall with single layers of 5/8-inch gypsum board both sides.

- D. Fasteners and Adhesives: Provide fastening or attaching devices, nails, staples, stick clips, and adhesives as required to securely fasten or hold insulation in place, as recommended by the manufacturer of the insulation used.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Insulation shall be installed in all locations as indicated. Insulation shall be installed in accordance with the manufacturer's installation instructions and recommendations, using fasteners and adhesives as required. In attic spaces and exterior walls, insulation shall be installed with the foil face facing the interior of the building.
- B. Insulation shall be installed to the underside of metal roofing in attic spaces with stick clips and adhesive as required to provide a blanket membrane without sags. If sagging occurs, provide No. 10 or No. 12 wire, tautly installed, to help hold insulation in place and to keep insulation from sagging.
- C. Batt or blanket type insulation shall be installed between studs and joists, fitted between (not over) plates, braces, blocking, or solid bridging, with no voids of insulation.
- D. Acoustical insulation shall be installed tightly between studs, joists, plates, braces, and blocking, with no voids of insulation. Provide adhesive, tape, or other appropriate fasteners where required to hold insulation rigidly in place. Openings and penetrations in acoustical walls and partitions shall be sealed airtight.
- E. Provide minimum three-inch thick batt or blanket insulation in wall cavities containing plumbing and heating pipes. Include ceiling cavities within 12 inches of plumbing and heating pipes.
- F. Insulation shall be installed after piping and wiring have been installed, tested, inspected, and approved.

END OF SECTION 07 21 11