

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Board insulation at perimeter foundation wall.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Board insulation as wall sheathing.
- B. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.
- C. Section 07 2500 - Weather Barriers: Separate air barrier and vapor retarder materials.
- D. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2015a.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- D. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS**2.01 MANUFACTURERS****2.02 APPLICATIONS****2.03 INSULATION MATERIALS**

- A. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. R-Value 5/inch
 - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88) per 1 inch thickness at 75 degrees F mean temperature.
 - 4. Board Edges: Square.
 - 5. Surface Burning Characteristics: Flame spread/Smoke developed index of 75 and 450 respectively, when tested in accordance with ASTM E 84.
- B. Storefront Insulation: Non-combustible, semi-rigid, water repellent mineral wool insulation board.
 - 1. Acceptable Manufacturer: CavityRock CurtainRock by Roxul Inc., www.Roxul.com.
 - 2. Thickness: 3 inches.
 - 3. Application: At spandrel glazing.

2.04

- A. Batt Insulation: ASTM C 665; preformed batt; friction fit, conforming to the following:
 - 1. Surface Burning Characteristics: Flame spread index of 25 or less; smoke developed index of 450 or less, when tested in accordance with ASTM E 84.
 - 2. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 3. Formaldehyde Content: Zero.

4. Thermal Resistance: Roof- R38, Exterior Wall- R19
5. Facing: Unfaced.
6. Manufacturers:
 - a. CertainTeed Corporation; _____: www.certainteed.com/#sle.
 - b. Johns Manville; _____: www.jm.com/#sle.
 - c. Bonded Logic: www.BondedLogic.com.
- B. Alternate Material: Natural Cotton Fiber Insulation
 1. R-value: 3.5 Inch = R-13, 5.5 Inch = R-19
 2. Fire Rating: Flame Spread -- 5(Class A), Smoke Developed -- 35 (Class A)
 3. Fire Rating: 1-hour
 4. Must Pass ASTM C 739)

2.05 ACCESSORIES

- A. Exterior Wall Vapor Retarder: Scrim-reinforced polyethylene or foil laminated to scrimreinforcedKraft paper; laboratory-tested vapor transmission rating of 0.03 perms. Flamespread: 25 maximum.
 - 1.Application: On inside of insulated wood stud framing at perimeter of building, underside of wood roof trusses, and where indicated on drawings.
 2. Tape: 3M "Contractor Sheathing Tape" No. 8086 or equivalent, as recommended by manufacturer of insulation to be taped; flame spread 0 to 25.
- B. Nails or Staples: Steel wire; electroplated or galvanized; type and size to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Install boards horizontally on foundation perimeter.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

- A. Install boards horizontally on walls.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall, roof, ceiling, and sound attenuation blankets at toilet rooms, exam rooms and office walls spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over member face.
- F. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- G. Tape seal tears or cuts in vapor retarder.
- H. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.05 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION