

SECTION 07 2100
BOARD AND BATT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- ~~A. Extruded Polystyrene Board Insulation on:
 - 1. Perimeter foundation walls.~~
- ~~B. Polyisocyanurate Board Insulation:
 - 1. On existing roof deck, beneath new decking.~~
- C. Batt/Blanket Insulation in:
 - 1. Wood stud walls.
 - 2. Wood ceiling joists.

1.02 REFERENCES

- A. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2007.
- B. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2006.
- C. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2007.
- D. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.
- E. ICC (IBC) - International Building Code; 2006.
- F. ICC-ES Evaluation Report; current edition.

1.03 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. Refer to Section 01 6000 - Product Requirements.

~~2.02 FOAM PLASTIC BOARD INSULATION MATERIALS~~

- ~~A. Extruded Polystyrene Board Insulation: ASTM C 578; Extruded polystyrene board with natural extruded skin surfaces; with the following characteristics:
 - 1. Board Size: 48 x 96 inch.
 - 2. Board Thickness: As indicated on the drawings.
 - 3. Board Edges: Square.
 - 4. Vertical application:
 - a. Between 0 and 8 feet below grade: At least 25 psi compressive strength (Type IV).
 - b. Between 8 and 12 feet below grade: At least 40 psi compressive strength (Type VI).
 - c. Between 12 and 16 feet below grade: At least 60 psi compressive strength (Type VII).
 - 5. Adhesive: Type recommended by insulation manufacturer for application.~~

- ~~B. Polyisocyanurate Board Insulation: Rigid cellular foam, complying with ASTM C 1289.~~
- ~~1. Facing: Manufacturer's standard facers for steep slope roofing.~~
 - ~~2. Board Size: 48 x 96 inch.~~
 - ~~3. Board Thickness: Two layers of 2" for a total thickness of 4".~~
 - ~~4. Board Edges: Square.~~
 - ~~5. Surface Burning Characteristics: Flame spread / smoke developed index not greater than 75/450; ASTM E 84.~~
 - ~~6. Labeling: Packaging, containers, and insulation shall be labeled as required by IBC.~~
 - ~~7. Exterior Wall Assemblies: Approved for use by ICC Evaluation Service for Type V Construction.~~

2.03 BATT/BLANKET INSULATION MATERIALS

- A. Batt/Blanket Insulation: ASTM C 665; preformed glass fiber blanket; friction fit, conforming to the following:
1. Facing: Kraft faced.
 2. Width of Batt/Blankets: Sized for tight friction fit between faces of studs without sagging or slumping.
 3. Depth of Glass Fiber Batts installed in Stud Walls / minimum rated R-value:
 - a. 2x4 nominal wood studs: R-13, 3-1/2".
 - b. 2x6 nominal wood studs: R-19, 6-1/4".
 - c. 2x8 nominal wood studs: R-25, 8".
 4. Depth of Glass Fiber Batts installed between Ceiling Joists / minimum rated R-value:
 - a. 2x8 wood joists: R-19, 6-1/4".
 - b. 2x10 wood joists: R-25, 8".
 - c. 2x10 wood joists: R-30, 8-1/4" ("cathedral" type batt).
 - d. 2x12 wood joists: R-30, 9-1/2".
 - e. 2x12 wood joists: R-38, 10-1/4" ("cathedral" type batt).

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, or irregularities.

~~3.02 POLYSTYRENE BOARD INSTALLATION AT FOUNDATION PERIMETER~~

- ~~A. Apply adhesive to back of boards:
 1. Apply a continuous bead 1 to 2 inches from the perimeter of each board plus an "X" running from corner to corner.~~
- ~~B. Install boards horizontally on foundation perimeter.~~
- ~~C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.~~

~~3.03 POLYISOCYANURATE BOARD INSTALLATION~~

- ~~A. Butt boards snug together without gaps.~~
- ~~B. Temporarily secure board against displacement. (Provide permanent fastening when attaching plywood roof sheathing.)~~

3.04 BATT/BLANKET INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions, without gaps or voids.
- B. Install in exterior wall spaces.
- C. Install in exterior ceiling spaces.

- D. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- E. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- F. Tape seal butt ends, lapped flanges, and tears or cuts in vapor retarder.

3.05 MISCELLANEOUS VOIDS

- A. Fill shim spaces around doors, windows, and other openings with insulation. Fill voids and crevices with insulation.

3.06 PROTECTION OF FINISHED WORK

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

END OF SECTION

SECTION 07 2616
UNDERSLAB VAPOR RETARDERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sheet vapor retarders.
- B. Tape.

1.02 REFERENCES

- A. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; 2005.
- B. ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs; 1998 (Reapproved 2005).
- C. ASTM E 1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 1997 (Reapproved 2004).

1.03 SUBMITTALS

- A. Product Data: Provide product data, installation instructions, and standard details illustrating sealing of laps, penetrations, and perimeters and other typical conditions.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. Refer to Section 01 6000 - Product Requirements.

2.02 VAPOR RETARDERS

- A. Vapor Retarder: ASTM E 1745, Class A, polyolefin or polyethylene sheet.
 - 1. Products:
 - a. Raven Industries; VaporBlock 15: www.ravenind.com.
 - b. Reef Industries, Inc.; Griffolyn 15: www.reefindustries.com.
 - c. Fortifiber Corporation; Moistop Ultra 15: www.fortifiber.com.
 - 2. Thickness: 15 mils.
 - 3. Puncture Resistance (ASTM D-1709B): Not less than 3100 grams.
 - 4. Water Vapor Permeance (ASTM E 96 Procedure E): Not greater than 0.025 perms.

2.03 ACCESSORIES

- A. Tape: Pressure sensitive; compatible with sheet material.
 - 1. Fortifiber Corporation; Moistop Tape.
 - 2. Raven Industries; Dura-Tape.
 - 3. Reef Industries, Inc.; Fab Tape.
- B. Pipe Boots: Factory fabricated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove large, sharp, and foreign matter which might impair adhesion of materials.
- B. Surfaces to receive tape must be clean and dry.

3.03 INSTALLATION

- A. Vapor Retarder: Place, protect, and repair vapor retarder sheets according to ASTM E 1643 and manufacturer's written instructions.
1. Install vapor retarder over the compacted base specified for the concrete slab.
 2. Install vapor retarder to provide continuous sealed barrier under concrete slab. Install with longest dimension of sheets parallel to the direction of the concrete pour.
 3. Lay vapor barrier over footings and tape to foundation walls.
 4. Lap seams between adjacent sheets of vapor barrier material at least 6 inches. Tape continuously along seams.
 5. Seal laps, penetrations, and perimeters in accordance with manufacturer's instructions.

END OF SECTION