

SECTION 072100

POLYISOCYANURATE FOAM SHEATHING FOR INTERIOR EXPOSED APPLICATIONS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Foil-glass-faced polyisocyanurate foam insulation board for interior exposed insulation for the following applications.
 - a. Interior wall insulation.
 - b. Masonry walls (above grade and tilt up).
 - c. Below-grade basement walls.
 - d. Crawlspace.
 - e. Framed walls.
 - f. Pre-engineered metal buildings.
 - g. Ceilings.
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
 - 1. Section 033000 - CAST-IN-PLACE CONCRETE for concrete substrate.
 - 2. Section 042000 - MASONRY for masonry substrate.
 - 3. Section 054000 - COLD-FORMED METAL FRAMING for metal framing.
 - 4. Section 061000 - ROUGH CARPENTRY for wood framing.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data sheets including the following:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. ICC-ES Evaluation Report: Submit current ESR-3398, Johns Manville CI Max® Foam Sheathing

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain insulation from a single source manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver insulation to Project site with original packaging unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and installing with other components.
- B. Store insulation flat on pallets elevated above the floor or ground and standing water. If stored outdoors, keep dry by covering completely with a waterproof tarpaulin and weigh down loose boards until securely fastened. Comply with all local building and fire codes.
- C. Handle insulation to avoid damaging materials.

PART 2 - PRODUCTS

2.1 POLYISOCYANURATE FOAM INSULATION

- A. Basis-of-Design: CI Max Polyisocyanurate Foam Sheathing by Johns Manville; 717 17th Street, Denver, CO 80202. Tel. 800-653-3103. www.jm.com.
 - 1. Description: Foil glass-faced, closed-cell rigid foam sheathing product recommended for interior exposed uses in commercial and residential construction, complying with ASTM C 1289, Type 1, Class 1.
 - 2. Construction: Foam bonded on both sides in the manufacturing process to foil glass facers.
 - a. Color Version: Unprinted silver/printed silver.
 - b. Color Version: Unprinted white/printed silver.
 - 3. Foam: Closed cell polyisocyanurate, CFC- and HCFC-free.
 - 4. Service Temperature: -100 degrees F to 250 degrees F (-73 degrees C to 122 degrees C).
 - 5. Physical Properties:
 - a. Conditioned Thermal Resistance: Refer to R-values below.
 - b. Dimensional Stability (Thickness), Percent Change: 0.1 percent at minus 40 degrees C (minus 40 degrees F), ambient humidity; 1.6 percent at 70 degrees C (158 degrees F), 97 percent relative humidity; 0.3 percent at 93 degrees C (200 degrees F), ambient humidity.
 - c. Dimensional Stability (Width), Percent Change: -0.1 percent at minus 40 degrees C (minus 40 degrees F), ambient humidity; 0.1 percent at 70 degrees C (158 degrees F), 97 percent relative humidity; 0.1 percent at 93 degrees C (200 degrees F), ambient humidity.
 - d. Dimensional Stability (Length), Percent Change: 0.0 percent at minus 40 degrees C (minus 40 degrees F), ambient humidity; 0.1 percent at 70 degrees C (158 degrees F), 97 percent relative humidity; 0.0 percent at 93 degrees C (200 degrees F), ambient humidity.
 - e. Flexural Strength Breaking Load, ASTM C 203: 74 N (17 lbf).
 - f. Flexural Strength Modulus of Rupture, ASTM C 203: 553 kPa (80 psi).
 - g. Compressive Strength at Maximum Load (Break), ASTM C 203: 122 kPa (2548 psi).
 - h. Tensile Strength at Maximum Load (Break), ASTM C 203: 122 kPa (2548 psi).
 - i. Water Absorption After 2 Hour Immersion, ASTM C 209: 0.55 percent.
 - j. Water Vapor Permeance, ASTM E 96, 1.4 ng/Pa.s.m² (0.02 perm).

- k. Surface Burning Characteristics, ASTM E84, 25 or less flame spread, 450 or less smoke developed.

- B. Size: 48 inches wide by 96 inches long typical; 108 inch and 120 inch lengths available as made to order. Refer also to the Drawings for required thicknesses.
 - 1. R-Value: 0.50 inch (12.7 mm) thickness, R-Value 2.7, RSI-Value 0.48.
 - 2. R-Value: 0.77 inch (19.6 mm) thickness, R-Value 4.5, RSI-Value 0.79.
 - 3. R-Value: 0.85 inch (21.6 mm) thickness, R-Value 5.0, RSI-Value 0.88.
 - 4. R-Value: 1.00 inch (25.4 mm) thickness, R-Value 6.0, RSI-Value 1.06.
 - 5. R-Value: 1.50 inches (38.1 mm) thickness, R-Value 9.3, RSI-Value 1.63.
 - 6. R-Value: 1.55 inches (39.4 mm) thickness, R-Value 9.6, RSI-Value 1.69.
 - 7. R-Value: 1.65 inches (41.9 mm) thickness, R-Value 10, RSI-Value 1.81.
 - 8. R-Value: 2.00 inches (50.8 mm) thickness, R-Value 13, RSI-Value 2.21.
 - 9. R-Value: 2.50 inches (63.5 mm) thickness, R-Value 16, RSI-Value 2.79.
 - 10. R-Value: 3.00 inches (76.2 mm) thickness, R-Value 19, RSI-Value 3.36.
 - 11. R-Value: 3.50 inches (88.9 mm) thickness, R-Value 22, RSI-Value 3.94.
 - 12. R-Value: 4.00 inches (101.6 mm) thickness, R-Value 26, RSI-Value 4.52.

- C. Compliances:
 - 1. ASTM C1289, Type 1, Class 1.
 - 2. CAN/ULC S704, Type 1, Class 1.
 - 3. ICC-ESR-3398 .
 - 4. International Building Code.
 - 5. International Residential Code.
 - 6. California State Insulation Quality Standards.

- D. Performance Standards: Product is under third party quality control agency follow-up service (Intertek: ASTM-1289, ASTM E84, NFPA 286) and meets the following performance standards:
 - 1. ASTM C1289, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 2. CAN/ULC S704 Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
 - 3. ASTM E84, Test for Surface Burning Characteristics of Building materials..
 - 4. CAN/ULC S102, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
 - 5. NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.
 - 6. CDPH/EHLB/Standard Method V1.1 (Section 01350), VOC Emissions from Building Products.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2 INSTALLATION

- A. Install insulation in strict accordance with manufacturer's recommendations including the following:

1. Insulation is designed to be installed in the applications described for walls and ceilings without the addition of a thermal barrier.
2. Insulation is not a structural material. Do not use as a nailing base for other building products.
3. Comply with requirements of local building codes and authorities having jurisdiction when using insulation as an exposed product.
4. Repair insulation damaged during installation. Patch holes less than one inch across with seam tape. Patch holes greater than one inch across with matching board material and then seal with flashing tape that have a flame spread of 25 or less and a smoke development of 450 or less.

3.3 PROTECTION

- A. Protect materials from damage during installation and subsequent construction. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION