XSPECT® ISOFOAM APF BOARD

FOIL-FACED RIGID INSULATION FOR EXTERIOR APPLICATIONS

GUIDE SPECIFICATION – CSI MASTERFORMAT

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:
   1. Foil-faced polyisocyanurate rigid foam thermal insulation for rooftop ducts (XSPECT® ISOFOAM board).

1.2 RELATED WORK

A. 23 00 00 Heating, Ventilating and Air Conditioning (HVAC)
Section 054000 - Cold-Formed Metal Framing.
Section 076000 - Flashing and Sheet Metal

1.3 REFERENCES

A. ASTM International:
   1. ASTM C 203 - Standard Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation.
   2. ASTM C 209 - Standard Test Methods for Cellulosic Fiber Insulating Board.
   3. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
   4. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
   5. ASTM D 1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
   6. ASTM D 2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
   7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics.
   8. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.

B. Canadian Test Methods and Specifications:
   1. CAN/ULC-S704.
   2. CAN/ULC-S102.

1.4 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. Samples: Submit 12 inch square insulation panel.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by insulation system manufacturer to install manufacturer's product.

B. Manufacturer Qualifications: A qualified manufacturer that has ASTM C 1289 and ASTM E84 listing for continuous insulation system identical to that used for this Project.

C. Preconstruction Meeting: Before installation, conduct conference at Project site. Comply with requirements for pre-installation conferences in Division 01 Section "Project Management and Coordination." Review methods and procedures related to continuous insulation construction and including the following:
   1. Meet with Owner, Architect, Installer, manufacturer's representative, and installers that interface with or affect the installation of continuous insulation sheathing.
   2. Review metal wall framing assemblies for potential interference and conflicts.
   3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review continuous insulation sheathing guidelines as required by Manufacturer's installation manual.
   5. Review governing regulations and requirements for insurance and certificates if applicable.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver insulation materials 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 materials in clean, dry area in manufacturer's unopened packaging until ready for installation and in accordance with manufacturer's instructions and temperature recommendations. Packaging shall be intact with no exposed foam or loose flaps, labels and feet/legs must be securely affixed.

C. Handle and store insulation materials in a manner to avoid damaging materials.

1.7 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit system to be installed according to manufacturer's written instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 POLYISOCYANURATE FOAM INSULATION

A. Polyisocyanurate Board Insulation: XSPECT® ISOFOAM Board, manufactured by Johns Manville, complying with the following:
   1. Description: Foil-faced, rigid foam insulation product recommended for use in commercial and residential rooftop duct construction, complying with ASTM C 1289, Type 1, Class 1.

2. Construction: Foam bonded on both sides in the manufacturing process to foil facers.
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. Thermal Resistance, 1 Inch, ASTM C 518: 6.0 degrees F per square foot per hour per BTU.
   b. Compressive Strength, ASTM D 1621: 16 psi or greater.
   c. Flexural Strength, ASTM C 203: 40 psi or greater.
   d. Water Absorption, ASTM C 209: 0.1 percent by volume.
   e. Water Vapor Permeance, ASTM E 96, 0.05 perms.
   f. Surface Burning Characteristics, ASTM E84, foam core 25 or less flame spread, 450 or less smoke developed.

B. Size: 48 inches wide by 96 inches long; custom sizes available. Refer to the Drawings for required thicknesses.
   1. Nominal Thickness: 1 inch, R-value 6.0.
   2. Nominal Thickness: 1-1/2 inches, R-value 9.3.
   3. Nominal Thickness: 2 inches, R-value 13.
   4. Nominal Thickness: 2-1/2 inches, R-value 16.
   5. Nominal Thickness: 3 inches, R-value 19.
   6. Nominal Thickness: 3-1/2 inches, R-value 22.
   7. Nominal Thickness: 4 inches, R-value 26.

C. Compliance: Third party quality control agency follow-up service requirements:
   1. Intertek: Complies with ASTM C1289, and ASTM E84 requirements.
   2. AATCC Test Method 127: Accepted; weathered specimens do not exhibit water leakage on the underside of any specimen tested.
   3. ASTM Test Methods and Specifications:
      a. ASTM D 2126 (Dimensional Stability): 2 percent maximum linear change at minus 40degF/amb R.H. and at 158degF/97percent R.H, 4 percent maximum linear change @ 200°F/amb R.H.
      b. ASTM E 2178: Air permeance average, with differential pressure of 75 Pa (1.57 lbs./sq.ft), resulting in calculated air flow of 0.0007 L/second sq.m (0.00013 cfm/sq.ft.).
      c. ASTM E 2357: Air leakage rating of 0.00426 liters per second square meter, with the specified design value of Qsub10 greater than 0.20 kPa.
   4. Canadian Test Methods and Specifications:
      a. CAN/ULC-S704-11: Type 1, Class 1.
      b. CCMC Listing: 13104-L: Type 1, Class 1.
   5. Air Barrier Association of America (ABAA): ABAA approved material.

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

1. To insure the proper installation of the insulation board, be sure that adequate clearance is provided to accommodate the full thickness of the specified insulation.
2. Before applying XSPECT® ISOfoam APF, the ductwork shall be clean, dry and tightly sealed at all joints and seams.
3. Use mechanical fasteners as required to secure insulation, starting 3" (75mm)maximum from butt joint. The underside of duct work 24" (610 mm) or more wide shall be secured with mechanical fasteners spaced approximately 18" (460 mm) on center. Stick or welded pins can be used to mechanically fasten the boards to the duct. The protruding ends of studs or pins should be cut off flush after the speed clips are installed. Wires, bands or adhesives may be used as options under certain conditions. Do not pin the JM XSPECT Tapered top board. MS and polyurethane adhesives are recommended. Read and follow instructions for specific adhesive. For rooftop ducts that have joints or flanges ensure that the insulation thickness is sufficient enough to protrude past the height of the joint. When insulating, measure the height and position of the joint and groove the insulation out to fit snuggly around the joint and ensure the insulation sits flush to the surface of the duct.
4. Adjacent insulation pieces shall be snugly butted. Any voids or cracks in the insulation should be filled to create a continuous and consistent insulation system. For double layer systems, stagger seams and joints to prevent thermal shorts within the insulation system.
5. It is recommended for ductwork over 32" wide that the top surface of the duct work use JM XSPECT Tapered Boards to allow for moisture to naturally run off the duct system and prevent pooling. If snow is a concern position the slope of the tapered board to face the south for maximum sun exposure and snow melt run-off.
6. The polyiso board insulation may be used to seal the system as a second vapor retarder system. Use a UL 181A compliant tape or vapor retardant mastic to close all board seams and penetrations to create the additional vapor retarder closure. Corner bead coves may be added to enhance the finished appearance and durability.

7. Cover insulation with a metal jacket cladding system or weather barrier cladding with a self-stick closure system. For metal cladding systems, follow common industry accepted practices like those described in the MICA Insulation Standards. For weather barrier cladding with self-stick closure systems, see the manufacturer's installation instructions for proper application procedures.

3.3 PROTECTION AND CLEANING

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

END OF SECTION

Johns Manville

717 17th St.
Denver, CO 80202
(800) 866-3234
JM.com

New 09/26/24