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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, contained in the *CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 07 21 00 THERMAL INSULATION SECTION 07 21 53 REFLECTIVE INSULATION

Specifier Notes: This section covers Fi-Foil's RetroShield® System which combines Fi-Foil's RBI Shield™ (reflective bubble insulation) and their patented Clip & Pin Components to insulate new or existing metal buildings.

Consult Fi-Foil for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Reflective insulation.
- B. Clip & Pin components.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

- A. Section 06110 - Wood Framing.
- B. Section 07260 - Vapor Retarders.
- C. Section 07270 - Air Barriers.
- D. Section 09110 - Metal Furring Systems

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ASTM C 1224 - Reflective Insulation for Building Applications.
- B. ASTM D 3310 - Determining Corrosivity of Adhesive Materials.
- C. ASTM C 1338 - Determining the Fungi Resistance of Insulation Materials and Facings.
- D. ASTM E 84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E 96 - Water Vapor Transmission of Materials.

1.4 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including installation instructions. Indicate compliance with material requirements.
- C. Samples: Submit manufacturer's sample, minimum 6 inches square of RBI Shield™, along with samples of the Clip & Pin components.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying material name and manufacturer.
- B. Storage: Store materials in a clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Fi-Foil Company, Inc., PO Box 800, Auburndale, Florida 33823. Toll Free (800) 448-3401. Phone (863) 965-1846. Fax (863) 967-0137. Website www.fifoil.com. E-Mail info@fifoil.com.

2.2 REFLECTIVE INSULATION

- A. Reflective Insulation: Fi-Foil RBI Shield™ (reflective bubble insulation).
▶ **This product contains anti-oxidants that reduce the impact of harmful ultraviolet radiation and oxidation.**
- B. Description: 5/16 inch double bubble with facing on both sides.
- C. Compliance:
 - 1. ASTM C-1224-03 Standard Specification of Reflective Insulation

2.2 REFLECTIVE INSULATION (continued)

2. Energy Star Partner
 3. US Green Building Council Member
 4. Helps you qualify for Energy & Atmosphere credits (energy efficiency category) on Certified Green Buildings
- D. Facing: [Metalized film on both sides] [Metalized film on one side and white or black polyethylene on other side].
- E. Testing:
1. Water Vapor Performance, ASTM E 96: 0.00.
 2. Flammability, ASTM E 84/2599:
 - a. Facing: Reflective/Reflective, Reflective/Poly
 - 1) Flame Spread Rating : <25 (Double Bubble)
 - 2) Smoke Developed Rating: <50 (Double Bubble)
 - 3) Category: Class A; includes flame retardant additives throughout plastic layers
 3. Corrosiveness, ASTM D 3310 : None.
 4. Pliability, ASTM C-1224-03, Section 9.5.2.4 : None.
 5. Bleeding & Delamination, ASTM C-1224-03, Section 9.5.1.4 : None.
 6. Mold & Mildew, ASTM C-1338 : Pass.
 7. Tensile Test, ASTM D 638-01: Double Bubble
 - a. Tensile Strength MD 38.9 psi
 - b. Tensile Strength TD 27.6 psi
 - c. Tear Strength MD 6.9 psi
 - d. Tear Strength TD 7.3 psi
 - e. Compression Strength 279 psi
 8. Thermal Performance, ASTM E408-71 (2002):
 - a. Emissivity : 0.03.
 - b. Reflectivity: 97%.
 - c. Service Temperature: -50 degrees F to 180 degrees F.
 9. R-Values are based on Heat Flow Down and Includes Lower Air Film - Tested in accordance with ASTM C 236, ASTM STP 1116, and ASHRAE Book of Fundamentals and National Bureau of Standards.
 - a. Attached to the bottom of 6" or 8" Purlin:
 - 1) Reflective/Reflective Facing: R-16
 - 2) Reflective/Poly Facing: R-12Note: The RetroShield® System can be back-loaded with mass insulation (such as Fiberglass batts) for higher R-value building envelope requirements. Contact Fi-Foil for R-value calculations.

2.3 CLIP & PIN COMPONENTS

- A. Clip & Pin components: Patent NO.6,324,808 B1 & NO.6,835,935 B2
1. Beam/Bar Joist Clip for Beams or Bar Joists
 2. C or Z Purlin Clip for C Type Purlins or Z Type Purlins
 3. Angle Clip for Sidewalls and Floors
 4. Tube Clips (2" – 2 ½" or 3" – 4")
 5. Locking Washers – available in aluminum, white or black to match RBI Shield™ facing color.
- B. Description: clips are designed to be used with RBI Shield™ double bubble tape tab reflective insulation, for metal building and framing applications, to provide a secure mechanical

2.3 CLIP & PIN COMPONENTS (continued)

connection. Sold in boxes of 12 each or 120 (90 C or Z Purlin and 30 Beam/BarJoist clips). The system is designed for one box of 120 clips and one roll of RBI Shield.

- C. Test Data:
 - 1. Type Metal: Electro Galvanized
 - 2. Temper : ½ Hard
 - 3. Thickness : 0.03
 - 4. Physical Properties (Hardness): 30168

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine area of the building for installation of the insulation system. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A. Install the RetroShield® System in accordance with manufacturer's instructions at locations indicated on the drawings.

3.2 INSTALLATION (continued)

- B. Seal joints in reflective insulation with integrated tape tab or with manufacture approved foil or poly tape.
- C. Replace damaged material as directed by Architect.

3.3 PROTECTION

- A. Protect reflective insulation from damage during construction.

END OF SECTION