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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 RBI Shield™ (reflective bubble insulation), a multipurpose insulation for residential, commercial and agricultural applications in roofs, floors, slabs, and walls.

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

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Reflective insulation.

##### 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.

### 1.3 REFERENCES (continued)

- 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.

### 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](http://www.fifoil.com). E-Mail [info@fifoil.com](mailto: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: 3/16 inch single bubble and 5/16 inch double bubble with facing on both sides.
- C. Compliance:
  - 1. ASTM C-1224-03 Standard Specification of Reflective Insulation
  - 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

## 2.2 REFLECTIVE INSULATION (continued)

- 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 (Single Bubble and Double Bubble)
      - 2) Smoke Developed Rating: <50 (Single Bubble and 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:

	Single Bubble	Double Bubble
a. Tensile Strength MD	33.0 psi	38.9 psi
b. Tensile Strength TD	21.4 psi	27.6 psi
c. Tear Strength MD	2.6 psi	6.9 psi
d. Tear Strength TD	3.2 psi	7.3 psi
e. Compression Strength	57.3 psi	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. 

Drape over Purlins with 1" airspace:	<u>Double</u>	<u>Single</u>
1) Reflective/Reflective Facing:	R-10	R-10
2) Reflective/Poly Facing:	R-6.5	R-6.0
    - b. Attached to the bottom of 6" or 8" Purlin:
      - 1) Reflective/Reflective Facing: R-16 R-16
      - 2) Reflective/Poly Facing: R-12 R-12

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to receive reflective insulation. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

### 3.2 INSTALLATION

- A. Install reflective insulation in accordance with manufacturer's instructions at locations indicated on the drawings.
- B. Seal joints in reflective insulation with integrated tape tab or with manufacture approved foil or white poly tape.
- C. Replace damaged material as directed by Architect.

### **3.3 PROTECTION**

- A. Protect reflective insulation from damage during construction.

**END OF SECTION**