Fi-Foil Company, Inc. July 2020

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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat,* as described in *The CSI Construction Specifications Practice Guide.*

This 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” after editing this section.

Section numbers and titles are based on *MasterFormat 2018 Update.*

1. 07 21 54

RADIANT BARRIER AND INSULATION FACING

Specifier Notes: This section covers Fi-Foil “FSK Shield” radiant barrier and insulation facing intended for use as an attic, roof, or wall radiant barrier and as a Class A insulation facing. The product also can be used as a vapor barrier. Consult Fi-Foil Company, Inc. for assistance in editing this section for the specific application.

* 1. GENERAL
     1. SECTION INCLUDES
        1. Radiant barrier and insulation facing.
     2. RELATED REQUIREMENTS

Specifier Notes: Edit the following list of related sections as necessary. Limit the list to sections with specific information that the reader might expect to find in this section, but is specified elsewhere.

* + - 1. Section 06 11 00 – Wood Framing.
      2. Section 07 26 00 – Vapor Retarders.
      3. Section 07 27 00 – Air Barriers.
      4. Section 09 22 13 – Metal Furring.
    1. REFERENCE STANDARDS

Specifier Notes: List reference standards used elsewhere in this section, complete with designations and titles.

* + - 1. ASTM C 665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
      2. ASTM C 1136 – Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
      3. ASTM C 1158 – Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Building Construction.
      4. ASTM C 1313 – Standard Specification for Sheet Radiant Barriers for Building Construction Applications.
      5. ASTM C 1338 – Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
      6. ASTM C 1743 – Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Residential Building Construction.
      7. ASTM C 1744 – Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Commercial/Industrial Building Construction.
      8. ASTM D 1204 – Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.
      9. ASTM D 1970 / D 1970M – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
      10. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
      11. ASTM E 96 – Standard Test Methods for Water Vapor Transmission of Materials.
      12. ASTM E 408 – Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
      13. ICC-ES AC 220 – Acceptance Criteria for Sheet Radiant Barriers.
      14. UL 723 – Test for Surface Burning Characteristics of Building Materials.
    1. SUBMITTALS

Specifier Notes: Edit submittal requirements as necessary. Delete submittals not required.

* + - 1. Comply with Section 01 33 00 – Submittal Procedures.
      2. Product Data: Submit manufacturer’s product data, including installation instructions.
      3. Samples: Submit manufacturer’s sample of radiant barrier and insulation facing, minimum 6 inches square.
      4. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.
      5. Warranty Documentation: Submit manufacturer’s standard warranty.
    1. DELIVERY, STORAGE, AND HANDLING
       1. Delivery Requirements: Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
       2. Storage and Handling Requirements:
          1. Store and handle materials in accordance with manufacturer’s instructions.
          2. Keep materials in manufacturer’s original, unopened containers and packaging until installation.
          3. Store materials in clean, dry area indoors.
          4. Protect materials during storage, handling, and installation to prevent damage.
  1. PRODUCTS
     1. MANUFACTURERS
        1. Manufacturer: 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.

Specifier Notes: Specify if substitutions will be permitted.

* + - 1. Substitutions: [Not permitted] [In accordance with Division 1].
    1. RADIANT BARRIER AND INSULATION FACING
       1. Radiant Barrier and Insulation Facing: Fi-Foil “FSK Shield”.
       2. Description: Single-sided foil facing comprised of 0.0003-inch aluminum foil bonded to 30-pound natural kraft paper with flame-retardant adhesive and reinforced with tri-directional fiberglass scrim.
       3. Compliance and Approvals:
          1. Compliance: ASTM C 1313.
          2. Evaluated: ICC-ES AC 220.
       4. Testing:
          1. Water Vapor Permeance, ASTM E 96: 0.02 perm.
          2. Surface Burning Characteristics, ASTM E 84 and UL 723:

Kraft Paper Exposed:

Flame Spread Rating: Less than 25.

Smoke Developed Rating: Less than 450.

Foil Exposed:

Flame Spread Rating: Less than 25.

Smoke Developed Rating: Less than 450.

“FSK Shield” and Unfaced Fiberglass Batt:

Flame Spread Rating: Less than 25.

Smoke Developed Rating: Less than 450.

Interior Wall and Ceiling Finish Classification: Class A.

* + - * 1. Emissivity, ASTM E 408: 0.03.
        2. Tensile Strength, ASTM C 1136:

Machine Direction: 40 pounds per inch width.

Cross Direction: 25 pounds per inch width.

* + - * 1. Scrim Pattern, ASTM C 1136:

Machine Direction: 2 pounds per inch.

Cross Direction: 3 pounds per inch.

* + - * 1. Mold Resistance, ASTM C 665 and C 1338: No growth.
        2. Dimensional Stability, ASTM D 1204: 0.25 percent.
        3. Temperature Resistance, ASTM D 1970:

Low-Temperature Resistance: Minus 40 degrees F, no cracking or delamination.

High-Temperature Resistance: 240 degrees F, no cracking or delamination.

* + - * 1. Puncture Resistance, ASTM C 1136: 25 beach units (0.7 joules).
    1. ACCESSORIES
       1. Facing Tape: Fi-Foil “FSK” facing tape.
          1. Description: Reinforced with fiberglass scrim and coated with cold weather acrylic adhesive.
          2. Compliance: ASTM C 1136.
          3. UL Classified facing.
          4. Width: 3 inches.
          5. Thickness: 6.5 mils, exclusive of liner.
          6. Adhesion: 92 oz/inch width.
          7. Elongation: 2 percent.
          8. Tensile Strength: 40 lbs/inch width.
  1. EXECUTION
     1. EXAMINATION
        1. Examine areas to receive radiant barrier and insulation facing.
        2. Notify Architect of conditions that would adversely affect installation.
        3. Do not begin installation until unacceptable conditions are corrected.
     2. INSTALLATION
        1. Install radiant barrier and insulation facing in accordance with manufacturer's instructions and ASTM C 1158.
        2. Install radiant barrier and insulation facing at locations indicated on the Drawings.
        3. Use as Facing for Unfaced Batts in Walls (Class A Fire Rating):
           1. Install radiant barrier and insulation facing with kraft paper facing batts and foil exposed.
           2. Install product flat to face of wall, stapling every 4 to 8 inches to wood studs and furring.

Metal Studs and Furring: Use double sided tape or spray adhesive.

* + - * 1. Overlap layers a minimum of 1/2 inch.
        2. Tape joints.
        3. Cut material to fit snugly around electrical wall outlets and other cutouts.
        4. Tape edges of material to outlets and cutouts.
      1. Use as Facing for Unfaced Batts Above Drop Ceilings (Class A Fire Rating):
         1. Lay over grids with kraft paper facing up and foil facing down.
         2. Overlap layers a minimum of 1/2 inch.
         3. Tape joints.
         4. Lay unfaced batt insulation over top of kraft paper facing up.
      2. Use as Facing for Unfaced Batts Attached to Bottom Exposed Wood or Metal Floor Joists:
         1. Attach to bottom of floor joists with kraft paper facing up and foil facing down.
         2. Overlap layers a minimum of 1/2 inch.
         3. Tape joints.
         4. Use steel screws with washers every 12 inches, in addition to or stapling every 4 to 8 inches when attaching to wood joists and spray adhesive when attaching to metal joists.
      3. Tape tears in radiant barrier and insulation facing.
      4. Replace damaged radiant barrier and insulation facing as directed by Architect.
    1. PROTECTION
       1. Protect installed radiant barrier and insulation facing from damage during construction.

END OF SECTION