SECTION 072116 - BLANKET INSULATION FOR METAL BUILDINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Thermal insulation and moisture control system for metal buildings for the following applications:

1. Walls.
2. Roofing

B. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 13 34 19 - Metal Building Systems.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM C991 - Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings.
2. ASTM C1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
3. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
4. ASTM E 96 - Standard Test Method for Water Vapor Transmission of Materials in Sheet Form (Procedure A).

B. North American Insulation Manufacturers Association (NAIMA):

1. NAIMA 202-96(R) (Rev. 2000) STANDARD For Flexible Fiberglass Insulation to be Laminated for Use in Metal Buildings.

C. National Fire Protection Association (NFPA):

1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

D. Underwriters Laboratories (UL):
UL 723 - Test for Surface Burning Characteristics of Building Materials.

1.3 SYSTEM DESCRIPTION

A. Design Requirements:

1. Insulation R-Value of 30 for installed roof system.
2. Insulation R-Value of 19 for installed wall system.

3. The installed roof and wall systems shall provide a continuous vapor barrier.

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's data for each of the following including:

1. Roof installation instructions.
2. Wall installation instructions.
3. Product data sheet.
4. Design considerations guide.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Companies shall be familiar with the installation practices associated with banded liner systems.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products indoors or in a dry, covered area. Do not open products until ready to use.
B. Protect products from potential construction site damage. Use care when opening products as pallets may shift during shipment.
C. Banding has sharp edges. Wear cut proof gloves when handling. Wear safety glasses when unpacking materials.

1.7 PROJECT CONDITIONS

A. For best results, do not install this system outside of the temperature, humidity, ventilation and environmental limits recommended by the manufacturer. Products should be kept covered and dry at temperatures less than 100 degrees F prior to installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Basis of Design: Opitliner™ Banded Liner System
B. Components:

1. Polyethylene vapor retarder liner fabric in white color.
2. Galvanized metal support straps (bands).
3. EcoTouch Certified R metal building insulation in two layers.

C. Metal Building Insulation:

1. Complies with ASTM C991 Type 1.
2. Complies with NAIMA 202-96-REV 2000.
3. Surface Burning Characteristics: Flame Spread Index less than 25 and Smoke Developed Index less than 50 when tested in accordance with ASTM E84, NFPA 255 and UL 723.
4. Certified by SCS Global Services to contain a minimum of 65 percent recycled glass content, 18 percent pre-consumer and 47 percent post-consumer.
5. Thermal Resistance: Available R-Value: 10,11,13,16,19,25,30.

6. Unfaced.
7. GREENGUARD Indoor Air Quality Certified.
8. GREENGUARD Gold Certified.

D. Fabric liner facing/vapor barrier composed of woven high-density polyethylene coated on both sides with polyethylene. Complies with the following:

1. Color: WHITE.
2. ASTM C1136, Types I through Type VI. Type I-IV exception for dimensional stability (value is less than 2.0 percent).
3. Perm Rating: Maximum 0.02 when tested in accordance with ASTM E 96 Procedure A.
4. Surface Burning Characteristics: Flame Spread Index of 0 and Smoke Developed Index less than 50 when tested in accordance with ASTM E 84.

E. Vapor Barrier Adhesive: Application temperature of 0 to 110 degrees F.
F. Double Sided Vapor Barrier Tape: Width 0.75 to 1.5 inches, rubber or acrylic base.
G. Patch Tape: Adhesive added to one side; installation temperature of 10 to 110 degrees F, width: 3 inches.
H. Metal Banding/ Straps: Coated steel, width 1.0 inch, structural steel Grade 50 per ASTM C 653, exposed color to match vapor barrier, gray backing color.
I. Thermal Breaks:

1. Closed cell vinyl foam tape for wall applications:
   1) Thickness: 0.125 to 0.375 inches.
   2) Width: 3.0 inches.

2. Thermal spacer blocks:
   1) Extruded or expanded polystyrene.
   2) Thickness: 0.5 to 1.0 inches.
   3) Minimum width: 3.0 inches.

J. Light Gage Steel Fasteners:

1. Material: Zinc plated, cold forged steel.
2. Head color to match vapor barrier.
3. Contain rubber sealing washer.

K. Heavy Gage Steel Fasteners:

1. Material: Zinc plated, cold forged steel.
2. Head color to match vapor barrier.

L. Insulation Hangers: Insul-hold insulation hangers.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the areas and conditions under which work of this section will be installed. Verify that adjacent materials are dry and ready to receive insulation. Verify structure, bracing, and concealed building systems have been tested and inspected.
B. Provide written report listing conditions detrimental to performance of work in this section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install liner system in accordance with manufacturer's installation instructions and approved Shop Drawings.
B. Purlin and girt attachment surfaces should be clean and dry prior to attaching two-faced tape or sealing adhesive.
C. Installed fiberglass insulation should fit snugly against purlin and girt walls in the cavity space. Avoid gaps, voids and any excess compression.

3.3 CLEANING

A. Clean dirt from vapor barrier fabric using a soft cloth with soap and water or non-abrasive household cleaner. Solvent-based cleaners and abrasive pads should be avoided.

END OF SECTION 072116