

SECTION 07220

ROOF BOARD INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing roof board insulation.
- B. Related Sections:
 - 1. Thermal insulation is specified in Section 07210.
 - 2. Polyvinyl-chloride roofing is specified in Section 07542.
 - 3. Firestopping insulation is specified in Section 07840.

1.02 SUBMITTALS

- A. Shop Drawings: Show layout and identification of tapered roof insulation pieces. Coordinate with architectural roof plans and roof details.
- B. Certification from roofing system manufacturer that insulation proposed for use is acceptable for application of roofing.

1.03 QUALITY ASSURANCE

- A. Design Criteria: Insulation and roof assembly shall provide a minimum thermal rating of LTTR R-30 over conditioned spaces. Provide insulation of indicated thickness at canopies and roof overhangs. At roof areas with tapered insulation, provide average LTTR R-values.
- B. Labels and Approvals: Roof insulation shall be listed by UL for use with UL Class A roof covering systems, and bear the UL label or be delivered with a UL certification of compliance.
- C. Roof insulation shall be approved by the manufacturer of the polyvinyl-chloride roofing materials specified in Section 07542.
- D. Roof insulation shall comply with EPA Energy Star – Program Requirements for Roof Products.

PART 2 - PRODUCTS

2.01 ROOF INSULATION AT POLYVINYL-CHLORIDE ROOFING

- A. Polyisocyanurate Board Roof Insulation: HCFC-free rigid closed-cell, non-composite, polyisocyanurate board insulation integrally laminated to heavy non-asphaltic fiber-reinforced felt facers conforming to ASTM C1289, Type II, Class 1.
 - 1. Approved Manufacturers: Atlas Roofing Corporation, Johns Manville or approved equal.
 - 2. Thickness: As required to result in specified LTTR-value.
 - 3. Compressive Strength: Minimum 25-psi.
 - 4. Blowing Agent: HCFC free hydrocarbon.
 - 5. Fire-Ratings: ASTM E108 Class A; ASTM E119 non-combustible.
 - 6. Provide tapered units where indicated or required for slope to drain. Minimum thickness at tapered boards shall be ½-inch. Minimum slope to drains shall be ¼-inch per foot.
 - 7. Provide in two layers. Minimum thickness of first layer shall be 1-inch or as recommended by roof insulation manufacturer for spanning metal deck flutes.

2.02 INSULATION FASTENERS

- A. Mechanical Fasteners: As recommended by roof insulation manufacturer for securing roof insulation to metal decking and as required for Factory Mutual wind uplift resistance rating of I-90.
- B. Asphalt Adhesive: Steep asphalt, as recommended by roof insulation manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Test concrete substrate for excessive moisture by pouring one pint of hot bitumen at 400-deg. F. or EVT on deck, at start of each day's work, and at start of each roof area or plane. Do not proceed with roofing work if test sample foams or can be easily stripped after cooling.

3.02 INSTALLATION

- A. Insulation, General:
 - 1. Install roof insulation in conformance with the manufacturer's printed instructions.
 - 2. Do not apply more insulation in one day than can be covered with roof membrane.
- B. Asphalt Adhesive:
 - 1. Prime surface of concrete deck with asphalt primer at the rate of 3/4-gallon per 100-sq. ft. and allow to dry.
 - 2. Set insulation in hot solid mopping of steep asphalt, applied at a rate of 25-lbs. per 100-sq. ft.
 - 3. Run long joints of insulation in continuous straight line, with end joints staggered between rows. Butt joints tightly.
 - 4. Install tapered pieces in accordance with approved layout drawings. Begin installation at roof drains or low points and work up toward ridges, parapets and roof edges.
- C. Mechanical Fasteners: Secure insulation using fasteners designed and sized for attaching roof insulation to metal decking. Fasten insulation over entire area of roofing at spacing required by Factory Mutual for Windstorm Resistance Classification I-90.
- D. Cover Board Installation: Install perlite insulation over tapered rigid polyisocyanurate boards with joints staggered a minimum of 12-inches. Install second layer in a full mopping of steep asphalt applied at a rate of 25-lbs. per 100-sq. ft.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush with ring of drain.

3.03 CLEANUP

- A. Remove debris resulting from work under this Section from roof surfaces and Project site,
- B. Leave surfaces in a condition acceptable to roof membrane installer.

END OF SECTION