

SECTION 07520 - MODIFIED BITUMEN ROOFING MEMBRANE

PART I - GENERAL

1.01 DESCRIPTION

- A. Furnish and install an APP or SBS mineral surfaced modified bitumen roofing system, including but not limited to; preparation of the roof deck, installation of roofing insulation, installation of a new membrane system, flashing, sheet metal, expansion joints, counter-flashing and other related items.
- B. The requirements of Section 07500 apply to this section.

PART II - PRODUCTS

2.01 ROOF INSULATION

- A. Base layer insulation; rigid boards, minimum density 2 lbs./cu. ft. complying with ASTM C-1289, Type II, Class 1, Grade 2, ASTM C-1330 and ASTM D-1622, polyisocyanurate with fiberglass perforated facer sheet, 20 psi compressive strength complying with ASTM D-1621. Dimensional stability shall comply with ASTM D-2126-87. Provide 2.5" x 48" x 96" size. R-value 15.3 minimum (15 yr. time weighted average).
 - 1. Approved insulation:
 - a. "EnergyGuard™ ISO" as manufactured by GAF.
 - b. "Energy 3™ polyisocyanurate" as manufactured by Johns Manville, Inc.
 - c. "Derbiboard" as manufactured by Performance Roof Systems.
 - d. "ISO 95+ GL" as manufactured by Firestone.
- B. Top layer insulation; 3/4" x 48" x 48" perlite or 1/2" x 48" x 48" wood fiberboard as approved by membrane manufacturer. R-value 1.32 minimum.
 - 1. Approved perlite insulation:
 - a. "BMCA™ Permalite®" as manufactured by GAF.
 - b. "Fesco Board" as manufactured by Johns Manville, Inc.
 - c. "Permalite" as manufactured by Performance Roof Systems.
 - 2. Approved wood fiber insulation:
 - a. "BMCA™ Permalite® Recover Board" as manufactured by GAF.
 - b. 1/2" Retro-Fit" manufactured by Johns Manville.
 - c. 1/2" Recover Board" as manufactured by Performance Roof Systems.
 - d. 1/2" "Fiber Top" as manufactured by Firestone.
- C. Tapered insulation for saddles and crickets; sloped 1/2" per ft. tapered perlite panels.
 - 1. Approved tapered insulation:
 - a. "BMCA™ Permalite® Tapered Roof System" as manufactured by GAF.
 - b. "Tapered Fesco Board" as manufactured by Johns Manville, Inc.
 - c. "Permalite Tapered Roof Insulation" as manufactured by Performance Roof Systems.
 - d. Approved insulation as listed and approved by Firestone.

2.02 ROOFING MEMBRANE

- A. Provide a fire rated white mineral surfaced modified bitumen membrane.
 - 1. Acceptable modified bitumen membrane and manufacturers:
 - a. RUBEROID TORCH GRANULE FR or RUBEROID MOP 170 FR by GAF.

- b. APPeX 4.5M FR or DYNALASTIC 180 FR by Johns Manville, Inc.
 - c. DERBICOLOR GP FR by Performance Roof Systems.
 - d. APP 180 FR or SBS Premium FR "CAP" as manufactured by Firestone.
 - e. RUBEROID EnergyCap SBS Heat-Weld Plus FR or RUBEROID EnergyCap Torch Granule by GAF (for Title 24 and Energy Star compliance).
- B. Fiberglass felts, conforming to ASTM D-2178 Type VI, continuous strand fiberglass mat, 60 lb./inch minimum average tensile strength in both machine and cross machine directions. Felt type shall provide warranty as specified in Section 07500 – Paragraph 1.05, Part A.
- 1. Approved fiberglass two ply base sheet:
 - a. "GlasPly Premier" by Johns Manville, Inc.
 - b. "GAFGLAS PLY 6" by GAF.
 - c. "PRS Ply VI" by Performance Roof Systems.
 - d. "Ply VI (6) M" as manufactured by Firestone.
- C. Asphalt Primer: Conforming to ASTM D-41.
- D. Flashing membrane: White mineral surfaced APP or SBS modified bitumen, as manufactured and approved for use by the membrane manufacturer to be installed.
- E. Interply Bitumen: Type III roofing asphalt conforming to ASTM D-312.
- F. Wood Decks (with primary insulation installed at interior side) provide only the following systems:
- 1. GAF Modified Bitumen #I-2-1-MGFR
 - Insulation: ½" Permalite Recover Board mechanically fastened with metal plates and screws.
 - Base Sheet: One ply of #75 Base Sheet fully adhered in solid mopping of Type III asphalt.
 - Ply Sheets: One ply of GAF GlasPly 6 fully adhered in solid mopping of Type III asphalt.
 - Membrane: Rubberoid Mop 170 FR (granule) fully adhered on solid mopping of hot Type III asphalt.
 - 2. Johns Manville Modified Bitumen #3-C-I-D
 - Insulation: ½" Retro-Fit Board or ½" Fesco Board mechanically fastened with metal plates and screws.
 - Base Sheets: Two plies of GlasPly Premier fully adhered in solid mopping of Type III asphalt.
 - Membrane: DynaKap FR fully adhered into a solid mopping of hot Type III asphalt.

2.03 MISCELLANEOUS MATERIALS

- A. Fasteners: Gripdek plates and screws as manufactured by ITW Builder Corporation or equal as approved by roof system manufacturer. Provide fastener length sufficient to anchor base layer of insulation and penetrate through the deck 3/4" minimum. Fasteners shall be Factory Mutual listed and approved for use with the insulation used.
- B. Copings, gravel stops, gutters, downspouts, scuppers, etc. as per section 07600.
- C. Sealant: As provided by membrane manufacturer.

- D. Termination bars: 0 040 mill finished aluminum with 3 1/2" vertical drop and 1/2" top caulk receiver.
- E. Sump pans: Recessed 20 Ga. metal.
- F. Drain and Stack vents: Provide one of the following:
 - 1. 4-lb desilverized pig lead flashing.
 - 2. Portals Plus "Alumi-Flash" XT with C-126 cap.
 - 3. Portals Plus "Pipe Portal System" with RC-4A ABS cover and C-126 cap.
- G. Single Pipe Penetrations (natural gas & electric): Provide one of the following:
 - 1. Portals Plus "Alumi-Flash" XT with EPDM capsized to fit pipe.
 - 2. Portals Plus "Pipe Portal System" with ABS cover and EPDM capsized to fit pipe.
 - 3. Pate Pipe Curb with ABS cover #pcc-2 and PVC capsized to fit pipe.
- H. Condensate Drains (where internal piping is required): Provide Portals plus Alumi-Flash (standard) with C-126 cap or Pate Pipe Seal #pps-3 with spun aluminum base.
- I. Plastic Cement: Conform to FS SS-C-153C.
- J. Traffic Pads: provide 3/8" thick "DynaTred Plus Roof walkway or approved equal as supplied by the manufacturer of the membrane being installed.

PART III - EXECUTION

3.01 INSTALLATION

- A. The requirements of Part III, Section 07500 applies to this section.

3.02 INSTALLATION - Insulation

- A. Mechanically attach first layer of double layered insulation in compliance with FM Class I construction and I-60 Windstorm Classification minimum, or in accordance with local wind storm classifications, which ever is higher. Install base layer with long dimension of board perpendicular to metal deck flutes.
- B. Install top layer in 30 lb. of hot asphalt adhesive to achieve full adhesion of the board. Install board with long dimension perpendicular to the long direction of base layer and parallel to the deck flutes. Offset insulation joints 6" minimum between top and bottom layers.

3.03 INSTALLATION - Membrane

- A. A two-ply base sheet underlayment of fiberglass felt (Type VI) shall be installed in 25 lbs. of hot asphalt per ply per 100 sf of roof area. Fiberglass base sheets shall be lapped 19" in such a manner that a two-ply configuration is attained over all roof areas.
- B. Modified bitumen membrane shall be applied only over all areas of base ply in strict accordance with the membrane manufacturer's requirements. (Phase construction is not acceptable.)

- C. Apply and secure walkway protection pads in strict compliance with roof manufacturer's instructions.
- D. Over wood roof decks only, with primary insulation installed on the interior, a single layer of FM Global listed/approved and UL listed/approved perlite board roof insulation shall be mechanically fastened over the wood deck in strict compliance with FM Global wind up-lift requirements and membrane manufacturer's requirements. Only those roofing membranes indicated in Part II under "Wood Decks" as listed and rated by UL as Class A are approved for this type of construction. All insulation joints must be offset from roof deck joints 6" minimum.
- E. Terminate the flashings of all roof curb corners with transition flashing or cover with three course of roofing cement and fabric reinforcement. All exposed roofing cement shall be protected with granules.
- F. Cover all asphalt bleed-out at field side and end laps with white roof granules while still hot.

END OF SECTION