SECTION 07 5323
EPDM THERMOSET SINGLE-PLY ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Adhered roof system with ethylene propylene diene terpolymer (EPDM) roofing membrane.
B. Insulation, flat and tapered.
C. Flashings.
D. Roofing cant strips, stack boots, roofing expansion joints, and walkway pads.

1.02 REFERENCE STANDARDS
F. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; Factory Mutual System; 2006.

1.03 ADMINISTRATIVE REQUIREMENTS
A. Preinstallation Meeting: Convene one week before starting work of this section.
   1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.04 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturer's written information listed below.
   1. Product data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements.
C. Installer's Qualification Statement.
D. Specimen Warranty: For approval.
E. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and paver layout.
F. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
G. Warranty:
   1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
   2. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.
1.05 FIELD CONDITIONS
   A. Do not apply roofing membrane during unsuitable weather. Refer to manufacturer's written
      instructions.
   B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 90
      degrees F.
   C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is
      expected or occurring.
   D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be
      weatherproofed the same day.
   E. Proceed with work so new roofing materials are not subject to construction traffic as work
      progresses.
   F. Do not allow grease, oil, fats, or other contaminants to come into direct contact with membrane.

1.06 WARRANTY
   A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
   B. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing
      that leaks or is damaged due to wind or other natural causes.
      1. Warranty Term: 30 years.
      2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER
   B. Firestone Roofing: www.firestonebpco.com

2.02 ROOFING APPLICATIONS
   A. EPDM Membrane Roofing: One ply membrane, fully adhered, over insulation.
   B. Roofing Assembly Performance Requirements and Design Criteria:
      1. Solar Reflectance Index (SRI): Minimum of 64 based on three-year aged value; if
         three-year aged data is not available, minimum of 82 initial value.
         b. Field applied coating may not be used to achieve specified SRI.
      2. Roof Covering External Fire Resistance Classification: Class A when tested per UL 790.
      3. Wind Uplift:
         a. Designed to withstand wind uplift forces calculated with ASCE 7.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS
   A. Membrane:
      1. Material: Ethylene propylene diene terpolymer (EPDM); ASTM D4637/D4637M, Type I
         (non-reinforced).
      2. Thickness: 60 mils (0.060 inch), minimum.
      3. Sheet Width: Factory fabricated into largest sheets possible.
   B. Seaming Materials: As recommended by membrane manufacturer.
   C. Flexible Flashing Material: Same material as membrane.
   D. Base Flashing: Provide waterproof, fully adhered base flashing system at all penetrations,
      plane transitions, and terminations.

2.04 INSULATION
   A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, fiber reinforced felt both
      faces; Grade 2 and with the following characteristics:
      1. Compressive Strength: 20 pounds per square inch.
2.05 ACCESSORIES

A. Prefabricated Flashing Accessories:
   1. Corners and Seams: Same material as membrane, in manufacturer's standard thicknesses.
   2. Penetrations: Same material as membrane, with manufacturer's standard cut-outs, rigid inserts, clamping rings, and flanges.
   3. Sealant Pockets: Same material as membrane, with manufacturer's standard accessories, in manufacturer's standard configuration.
   4. Sure-Seal Pressure-Sensitive Reinforced Universal Securement Strip (RUSS):

B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
   1. Length as required for thickness of insulation material and penetration of deck substrate, with metal washers.

C. Membrane Adhesive: As recommended by membrane manufacturer.

D. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.

E. Sealants: As recommended by membrane manufacturer.

F. Cleaner: Manufacturer's standard, clear, solvent-based cleaner.

G. Edgings and Terminations: Manufacturer's standard edge and termination accessories.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions.

B. Do not apply roofing membrane during unsuitable weather.

C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.

D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.02 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.03 PREPARATION, GENERAL

A. Clean substrate thoroughly prior to roof application.

3.04 INSULATION

A. Attachment of Insulation:
   1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and Factory Mutual requirements.

B. Lay subsequent layers of insulation with joints staggered minimum 24 inch from joints of preceding layer.

C. Lay boards with edges in moderate contact without forcing, and gap between boards no greater than 1/4 inch. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
D. Do not apply more insulation than can be completely waterproofed in the same day.

3.05 MEMBRANE APPLICATION
A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
B. Shingle joints on sloped substrate in direction of drainage.
C. Fully Adhered Application: Apply adhesive at manufacturer’s recommended rate. Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches. Seal permanently waterproof.
E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.
F. Coordinate installation of roof drains and sumps and related flashings. Locate all field splices away from low areas and roof drains. Lap upslope sheet over downslope sheet.
G. Daily Seal: Install daily seal per manufacturer’s instructions at the end of each work day. Prevent infiltration of water at incomplete flashings, terminations, and at unfinished membrane edges.

3.06 CLEANING
A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
B. Remove bituminous markings from finished surfaces.
C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
D. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION
A. Protect installed roofing and flashings from construction operations.
B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION 07 5323