



Quality JM EPDM Ballasted Membrane System Over Approved Decks or JM Insulation

General

This specification is for use over any type of approved structural deck which is suitable to receive a ballasted membrane system. This specification is also for use over certain JM roof insulations which provide a suitable surface for the JM EPDM membrane. Insulation should be installed in accordance with the appropriate JM Insulation Specification detailed in Section 1 of the current EPDM Commercial Roofing Application Guide book. This specification can also be used in certain re-roofing applications.

Note: Consider all general instructions contained in the current EPDM Commercial Roofing Application Guide book as part of the specification.

Design

Consider local conditions and characteristics when designing, specifying and installing any roofing system. Information from the Single Ply Roofing Industry (SPRI), FM Global® and local building codes can provide guidelines for the designer.

This specification shall only be installed where the structure can accommodate the weight of the complete roofing system, including insulation, membrane, ballast, snow loads, etc. The determination of whether or not the structure is capable of supporting the weight of the complete roofing system is solely the responsibility of the owner and their design professional.

Design and installation of the deck and/or roof substrate must result in the roof draining freely to outlets numerous enough and so located as to remove water promptly.

Deck Preparation

Ensure the deck is clean, dry and smooth. All deck fasteners should be driven flush to the substrate with no sharp edges. Holes and gaps should be evaluated and patched as appropriate.

Flashings

Refer to the Flashing Details in Section 3 of the EPDM Commercial Roofing Application Guide Book, or on the Web at www.jm.com/roofing.

Insulation Application

Store products per manufacturer's recommendations. Remove any wet product and discard.

A minimum offset of 6" (15.2 cm) is recommended from the previous layer of insulation. The top layer of insulation must be a minimum 1.5" (3.8 cm) thick.

Position the insulation with the long side of the board running parallel with the flutes of the steel deck only. Each of the edges must be centered on the flute top of a steel deck. No board widths less than 6" (15.2 cm) are allowed. Perimeters and corners fastener density must be enhanced per FM publication 1-29.

EPDM Membrane Application

It is essential that JM products be correctly installed in order for the completed roofing system to perform properly. The following procedures are to be used in performing the various operations in installing roofing products:

Position the roll at the approximate application point, and unroll. If the membrane is wider than 16'8" (5.08 m), unfold the membrane to its fullest width. Move the membrane into place without stretching. Allow a minimum of 30 minutes before fastening or splicing so that the membrane can relax and release any tension induced by packaging and handling.

After unrolling the first sheet position adjoining sheets in the same manner, lapping the edges a minimum of 3" (7.62 cm) for Field Fabricated 3" Seam Tape applications and 6" (15.24 cm) for 6" Seam Tape applications. Sheets should be laid out in an offset pattern, with a minimum of 3' (91.44 cm) between adjacent end laps. Laps should be constructed with the upslope sheet overlapping the adjoining sheet in a shingle manner to avoid any laps opposing natural drainage.



JM EPDM MEMBRANE SPECIFICATIONS

SE4B, SE6B, SE9B, SE4RB, SE6RB, SE7RB Ballasted Installation

Seaming of Laps

The splice area must be completely free of all dust, debris and other contaminants. Fold back the top sheet and hold the membrane away from the seam area using the "tack back" primer method or other acceptable means. Using a scrub pad apply primer to both the folded EPDM membrane and bottom sheet in an area wider than the lap to ensure bonding to a primed surface. Allow the primer to flash off to a tacky state.

Unroll approximately a 15" (38.1 cm) length of the tape and apply to the bottom sheet along the lap edge. Continue unrolling 15" (38.1 cm) lengths of EPDM Seam Tape and secure in place along the entire length of the seam. With the release liner still in place, roll the entire length of the seam with an appropriate roller to ensure good contact of the EPDM Seam Tape with the bottom EPDM sheet. Roll the top EPDM sheet back over the EPDM Seam Tape, with the release liner still in place, leaving approximately ¼" (6 mm) of tape exposed. Remove the release liner from the EPDM Seam Tape by peeling it back parallel to the roof surface and away from the splice at a 45° angle.

Hand roll first diagonally across the entire splice toward the outside edge, and then along the length of the splice. Provide sufficient pressure to ensure a good seal but avoid excessive pressure that could stretch or deform the tape. EPDM Seam Tapes splices must be overlapped a minimum of 2" (50 mm) to ensure a continuous tape surface. When there is a splice in the seam tape, that location must be stripped in with either 6" minimum Peel & Stick Flashing or a T-Joint patch.

Surfacing

Requirements for type and amount of ballast are as follows:

Ballast Surfacing

The ballast should be of a suitable type, and of sufficient amount, to provide protection against wind uplift. Local wind conditions and characteristics should be taken into account when assessing the ballast requirements. The Single Ply Roofing Industry (SPRI) has issued guidelines to assist the designer in its "Wind Design Guide for Ballasted Single Ply Roofing Systems" (ANSI/SPRI RP-4). Information can also be obtained from local building codes and from FM Global Loss Prevention Data Sheet 1-29. The final decision on type and amount of ballast ultimately rests with the building owner or his or her technical representative but should not be less than 10 lb/ft² (1000 lb/100 ft² [48.8 kg/m²]).

Note: this amount may not provide complete coverage of the EPDM membrane. JM does not supply ballast materials; however, the following materials are approved for use with ballasted Specifications SE4B and SE6B:

Nominal 1½" (40 mm) Aggregate: Clean, smooth, river bottom stone consisting of ballast gradation Size #4 (or, alternatively, Size #3), as specified in ASTM D 448 "Standard Sizes of Coarse Aggregate". The ballast should consist of (#4) ¾" to 1½" (20 mm to 40 mm) or (#3) 2" to 1" (50 mm to 25 mm) washed river stone with a minimum of 85% retained on a ¾" (20 mm) screen (#4) or a 1" (25 mm) screen (#3).

Nominal 2½" (65 mm) Aggregate: Clean, smooth river bottom stone consisting of ballast gradation Sizes #1 or #2 as specified in ASTM D 448 "Standard Sizes of Coarse Aggregate".

It should consist of 3½" to 1½" (90 mm to 40 mm) (#1) or 2½" to 1½" (65 mm to 40 mm) (#2) washed river stone with a minimum of 85% retained on a 1½" (40 mm) screen.

If crushed rock or ballast with sharp edges is used, a protective layer of JM Polyester Mat Protection Material, or other approved protection material must be used under the ballast. Gravel ballast must be clean and free of excessive fines, to avoid clogging the drains.

Pavers

Standard pavers (minimum 18 psf [87.9 kg/m²]), or interlocking lightweight pavers (minimum 10 psf [48.8 kg/m²]) may be substituted for nominal 1½" (40 mm) stone. Interlocking, lightweight pavers with documented or demonstrated equivalent wind performance data or 22 psf (107.4 kg/m²) standard pavers may be substituted for nominal 2½" (65 mm) stone. When pavers are used as ballast, and these pavers do not incorporate integral drainage channels, the pavers must be placed on supports or pedestals. These supports should be located at the intersection of the corners of the paver blocks. All four corners of adjacent pavers should rest on the same 6" (150 mm) square support or pedestal. The approximate ½" (15 mm) air space between the pavers and the membrane will allow moisture vapor to vent to the atmosphere. When concrete pavers are not installed on pedestals or supports, one layer of JM Polyester Mat Protection Material, or another approved slip sheet must be installed between the paver and the membrane.

JM recommends that sufficient ballast be applied to the membrane surface as soon as areas are completed, to provide immediate protection against wind uplift.