

Introduction

This application guide describes standard procedures for installing Johns Manville (JM) EPDM roofing systems and has been prepared for:

The Roofing Mechanic

JM recognizes that the success and long-term performance of our roofing systems depends upon the personal skill, experience and knowledge of the roofing mechanic.

JM EPDM roofing systems offer important advantages for roofing crews. Roofing membranes can be installed year-round with proper roof deck preparation and some adjustments for weather conditions.

About This Guide

This guide is designed for your convenience. These step-by-step instructions should answer your installation questions and help you maintain top-quality craftsmanship when applying a JM EPDM roofing system.

JM EPDM Membranes

There are three basic types of JM EPDM roofing systems: mechanically fastened, fully adhered and ballasted.

Mechanically fastened roofs secure the membrane to the roof with fasteners and plates, which vary depending on the roof deck material.

Several construction variations are possible with mechanically fastened roofs.

In fully adhered roofing systems, the membrane is bonded to the substrate with JM EPDM Membrane Adhesive (solvent based), JM EPDM Membrane Adhesive (Low VOC) or JM EPDM Membrane Adhesive (water based).

Ballasted roofing systems rely on the weight of the aggregate to resist wind uplift forces.

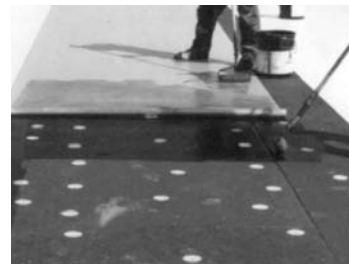


Roof Preparation (Re-Roofing)

Proper roof deck preparation is essential to simplify installation and prevent future conditions that may lead to roof leaks.

Carefully sweep all roof surfaces to remove all debris and dirt. Make sure the roofing area is completely smooth. Cut out large blisters on asphalt or coal tar pitch roofs. Cut small blisters to release air or trapped gases. Remove loose nails and sharp ridges or burrs on concrete, if no insulation is used. Repair holes or cracks in concrete, less than ¼" (6.35 mm) wide with nonshrink grout. All perimeter and penetration flashings should be removed.

A slipsheet and/or insulation is often used under the membrane in mechanically fastened and ballasted systems. It provides a smooth surface and acts as a separator layer between an existing, damaged roof and the new roof to be applied.



A layer of insulation board to act as a separator may be required for some JM EPDM re-cover systems. For full details, contact JM Technical Services.

When using mechanical fasteners, if you are unsure of the deck condition, perform pull-out tests of the fasteners being used to confirm sufficient pull-out strength. For full details, contact JM Technical Services.

Roof Decks

See "Peak Advantage Guarantee Charges and Requirements – EPDM" on the JM Roofing Web site for acceptability of roof decks with EPDM roofing systems.



JM EPDM Installation Guide

Equipment

The following equipment may be needed to install JM EPDM roofing systems:

Hammer drill	Scissors
Electric drill	Wire brush
Snips	Chalk line
Gravel pusher	Shovel
Hammer	Pliers
Pull-out tester	Tongs
Brooms (soft & stiff)	Gravel-moving equipment
Screw gun	Notched squeegee (adhered)
Gloves	Drill bits (carbide, steel)
Measuring tape	Reciprocal saw
Ladder	Grounded extension cords
Rope	Seam probe
Eye protection	First-aid kit
Wood saw	Utility knife
Metal crimpers	Screwdriver set
Vise-grip pliers	Rubber mallet
Solvent-resistant pan	Rags
Caulk gun	Writing/marketing instruments
Seam roller	T-square
Paint roller	Rollers and brushes

General Information

This section provides application information for JM EPDM and outlines specifications currently available through JM Technical Services.

All general information contained in this section and in the current JM Single Ply Roofing Systems Manual shall be considered part of these specifications.

JM offers JM EPDM specifications for ballasted, mechanically attached and fully adhered systems. These specifications can be installed over insulation, and over nailable, non-nailable and lightweight fill substrates.

Each specification in this section is eligible to receive a JM Peak Advantage Guarantee. Refer to Section 1c on "Peak Advantage Guarantees" in the current JM Single Ply Roofing Systems Manual or contact a JM representative for additional information.

Positive drainage of water off any roof membrane is necessary to prolong the service life of the system. JM, therefore, has the following policy:

Drainage: Design and installation of the deck and/or membrane substrate must result in the roof draining freely, to outlets numerous enough and so located as to remove water promptly and completely within 48 hours.

Flashings: Refer to Section 3i of the current JM Single Ply Roofing Systems Manual for JM EPDM single ply flashing specifications and details.

Membrane Substrate

The surface on which the single ply roofing membrane is to be applied should be one of JM's roof insulations (RetroPlus, SECUROCK, ENRGY 3, Invinsa Roof Board) or an approved structural substrate. The surface must be clean, smooth and dry. Certain insulations are not acceptable for fully adhered, ballasted or mechanically attached single ply applications. Contact JM Technical Services for details.



General Guidelines for Application of Materials

The proper application of roofing materials is as important to the satisfactory performance of the roofing system as the materials themselves. JM strongly recommends the following guidelines for the application of EPDM materials be followed:

- A. Never use wet or damaged materials.
- B. Never apply any roofing materials during rain or snow, or to wet or damp surfaces. Moisture trapped within the roofing system can cause severe damage to the roofing membrane, insulation and deck, as well as cause poor quality of adhesive bonds.
- C. Heed the specific cold weather application procedures described in the specifications.
- D. Always install the complete roofing system at one time. Phase construction is unacceptable for any JM roofing system.
- E. Always install water cutoffs at the end of each day's work to prevent moisture from getting into and under the completed roof system. Water cutoffs should be completely removed prior to resuming work.
- F. Never use bituminous materials in contact with any JM EPDM Single Ply Membrane. These materials are not compatible and may damage the EPDM sheet.
- G. Thoroughly review the guidelines and procedures for application of the roofing system, flashings and other materials before starting work.
- H. **Always review the warning label and MSDS for any product, and comply with the published safety procedures for all products being used. See the "Introduction" section of the current JM Single Ply Roofing Systems Manual for health and safety recommendations.**

JM EPDM Single Ply Membrane Systems

JM EPDM single ply roofing systems consist of a single membrane layer of EPDM sheeting. The material is supplied in rolls of various widths and lengths. Standard sizes are:

Widths	Lengths
10', 16' 8"	50', 100'
20'	50', 100'
30'	100'
40', 50'	100'

*Not all sizes are available in every thickness

Ballasted Systems [SE4B-(T), SE6B-(T), SE9B-(T)]

Ballasted systems are those in which the sheet is loose laid over the substrate, without any means of attachment other than at the perimeter and at penetrations. The system is held in place by stone ballast or pavers. Nonreinforced membranes are typically used in these systems.

Mechanically Attached Systems (SE4RM, SE6RM, SE7RM):

In mechanically attached systems, the sheet is attached to the substrate at regularly spaced intervals, via anchor disc or anchor bar systems. These systems employ a reinforced sheet as the membrane. Black 45 mil (.045" [1.1 mm]) thick, 60 mil (.060" [1.5 mm]) thick, and 75 mil (.075" [1.9 mm]) thick reinforced sheets are available for these systems.

Fully Adhered Systems [SE4A-(T), SE6A-(T), SE9A-(T), SE4RA-(T), SE6RA-(T)]

Fully adhered systems are totally attached to the substrate by means of adhesive. All JM EPDM Membranes may be used in these assemblies.

The letter "T" in parentheses following the specification designation indicates that the JM EPDM Membrane laps shall be sealed using JM EPDM Seam Tape. It is not acceptable to use JM Lap Cement for field seams.

Membrane formulations offer superior ozone resistance and remain elastic and flexible through wide temperature ranges. An EPDM single ply membrane is impervious to water entry and resistant to weathering and UV rays.

The product line includes flashing materials, adhesives, sealants, coatings and accessories, providing a single source systems approach to the roofing assembly. JM roofing systems are adaptable to many sizes and shapes of new or existing roofs. They are recommended for slopes not exceeding 2:12 for ballasted systems and not exceeding 6:12 for fully adhered and mechanically attached systems. All three systems are suitable for new construction, as well as re-roofing applications.

The JM EPDM single ply specifications are written as installation guidelines only. These documents are intended to assist the specifier in developing a comprehensive bid package, in a clear and concise format. The information is presented in an explanatory fashion rather than the authoritative, instructive manner commonly utilized in construction specifications. When experience, technical knowledge or established testing procedures support a policy or position, it is clearly identified (i.e., "JM requires" or "is not acceptable"). When the use of a particular product or practice is desirable, the reference is stated as an opinion rather than absolute fact, (i.e., "JM recommends" or "JM suggests").



JM EPDM Installation Guide

Adhesive Use

All membranes and substrates to be adhered must be approved by Johns Manville. Both surfaces must be clean, smooth, dry, compatible and free of contaminants and grease/oil. All fasteners, if required, must be properly seated and plates flush, leaving an acceptable surface to receive adhesive.

Unroll the membrane and allow it to relax at least 30 minutes before applying adhesive, longer time is necessary in colder weather.

Position the membrane with an overlap appropriate for width of seam type being used. Fold membrane back one-half of the length of the first sheet's length to expose its bottom side.

Make sure adhesive container is sealed. Turn upside-down and wait a minimum of five minutes. Turn containers right-side up. Carefully open and vigorously stir until adhesive is a uniform color and all solids are dispersed, with – NO SWIRLS.

Saturate roller by dipping into can. Roll adhesive onto substrate and membrane for smooth-backed membranes.

For solvent-based adhesives, the appearance of a spider web effect will occur with stringers off the roller when the roller needs to be redipped into the adhesive. It will also be hard to push the roller.

When adhesive is ready, carefully roll the membrane into the substrate, avoiding wrinkles. Apply even pressure with a lawn or linoleum roller (minimum 75 lb [34 kg]) to ensure good contact between the membrane and substrate.

Do not apply adhesive in the seam area; seams are to remain clean and dry. Avoid puddling of adhesive. With adhesives, more is not necessarily better. "Over-coating" adhesives will lead to poor adhesion.

Do not use in direct contact with polystyrene foam.

Adhesive coverage, open time and dry time rates can vary dramatically depending on the particular substrate and environmental conditions. Coverage rate charts, stated herein, are approximate only. If FM Global® or UL® approval is required, please consult the specific RoofNavSM or UL Certification Directory for specific application rates.

Substrate for Adhered Membrane

	Lightweight Concrete	Concrete	Invinsa®	SECUROCK® Gypsum Fiber Roof Board	Wood Fiber	ENRGY 3®	Dens Deck®
JM EPDM	N/A	N/A	WB/SB	WB/SB	WB/SB	WB/SB	WB/SB

Key:

WB - Water-Based
SB - Solvent-Based
N/A - Not Applicable

Notes:

- Water-Based Adhesive: Use the two-sided contact application method for all smooth-backed single ply membranes.
- DensDeck: Priming of the board is required.
- Not suitable for SECUROCK Glass-Mat roof boards.

Solvent and Low-VOC/Solvent-Based, Two-Sided Application for Plain-Backed (Smooth-Backed) Membrane

Apply solvent-based adhesive in a smooth, even, thin coat to both membrane and approved substrate at the rates listed on specific product data sheets. Most applications apply approximately half the listed rate to the membrane and the other half to the substrate. For porous substrates such as wood and gypsum, apply more adhesive on the substrate.

EPDM systems require adhesive to become tacky to the touch on both surfaces without stringers. Time will vary depending on the ambient temperature and humidity.

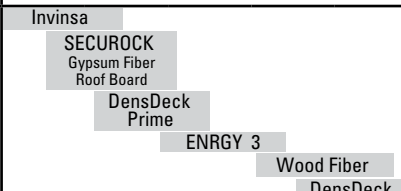
Water-Based, Two-Sided Application for Plain-Backed (Smooth-Backed) Membranes Only

Apply water-based adhesive in a smooth, even, thin coat to both the membrane and approved substrate at the rates listed on specific product data sheets. Most applications apply approximately half the listed rate to the membrane and the other half to the substrate. For porous substrates such as wood and gypsum, apply more adhesive on the substrate.

Adhesive should be tacky at point of assembly; approximate time will vary depending on the environmental conditions. Once the adhesive begins to change color (from white to clear) and feels tacky, but with no stringers (just like the solvent adhesive), carefully roll the membrane to the substrate. Avoid capturing air or creating wrinkles during this process. If adhesive is completely dry or too wet (still all white), adhesion will be compromised.

Water-Based Adhesive Cautions

- Water-based adhesives are white; if product appears to have disappeared after application then adhesive is too dry and will need to be reapplied.
- Do not over apply. Use the coverage rate chart in this section; too much adhesive will result in curing issues.
- Prior to application and curing, water-based adhesive can NEVER be exposed or stored to temperatures below 40°F. Do not apply when ambient temperatures are expected to drop below 40°F within 48 hours after application.

Suggested Coverage Rate Ranges					
	Ft ² /gal (gal/sq)				
Solvent-Based or Low-VOC/Solvent-Based	90 (1.11)	80 (1.25)	70 (1.43)	60 (1.67)	50 (2.0)
Water-Based	130 (0.77)	120 (0.83)	110 (0.91)	100 (1.0)	90 (1.11)
	← Less Adhesive More Adhesive →				
Insulation and Cover Boards					
Notes:					
<ul style="list-style-type: none"> • Listed rates are for finished roofing areas. • See JM requirements for correct application method. • Two-Sided Application: Most applications apply approximately half the listed rate to the membrane and the other half to the substrate. For porous substrates such as wood and gypsum, apply more adhesive on the substrate. 					

Surfacings

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 Property Loss Prevention Data Sheet 1-29 "Roof Deck Securement And Above-Deck Roof Components."

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 (1,000 lb/100 ft² [49 kg/m²]). Note: This amount may not provide complete coverage of the JM EPDM Single Ply Membrane.

JM does not supply ballast materials; however, the following materials are approved for use with ballasted Specifications SE4B-(T), SE6B-(T), SE9B-(T), SE4RB-(T), SE6RB-(T) and SE9RB-(T):

Nominal 1½" (3.81 cm) 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" (1.91 cm to 3.81 cm) or (#3) 1" to 2" (2.54 cm to 5.08 cm) washed river stone with a minimum of 85% retained on a ¾" (1.91 cm) screen (#4) or 1" (2.54 cm) screen (#3).

Nominal 2½" (6.35 cm) 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 1½" to 3½" (3.81 cm to 8.89 cm) (#1) or 1½" to 2½" (3.81 cm to 6.35 cm) (#2) washed river stone with a minimum of 85% retained on a 1½" (3.81 cm) screen.

Pavers: Standard pavers (minimum 18 psf [88 kg/m²]), or interlocking lightweight pavers (minimum 10 psf [49 kg/m²]), may be substituted for nominal 1½" (3.81 cm) stone. Interlocking, lightweight pavers with documented or demonstrated equivalent wind performance data, or 22 psf (107 kg/m²) standard pavers, may be substituted for nominal 2½" (6.35 cm) 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 or pedestals can either be commercially available products or 6" (15.24 cm) square pieces of JM EPDM Walkpad (to give an approximate ½" [1.27 cm] air space). 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" (15.24 cm) square piece of JM EPDM Walkpad or pedestal. The approximate ½" (1.27 cm) 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 cured JM EPDM Membrane must be installed between the paver and the membrane.

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.

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



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Coating

JM roofing systems do not require coating and must not be coated with any material not approved by JM. **Bituminous-based coatings will damage EPDM roofing system products and cannot be safely used for either coating or repairing EPDM roofing systems.**

JM recommends using TopGard 4000 or TopGard 5000, a 100% acrylic elastomeric coating, for JM EPDM roofing membrane systems.

TopGard Coatings Application

When applying TopGard 4000 or TopGard 5000, use a brush, roller or spray equipment. Make sure that all surfaces are clean, dry and free of any dirt, grease, oil or other debris that may interfere with proper adhesion.

It is recommended that coating be applied in two coats. The first coat should be completely dry (normally 4 to 12 hours) before applying the second coat.

Temperatures must be 50°F (10°C) and rising during time of application. Do not apply TopGard 4000 or TopGard 5000 within 24 hours of anticipated rain, dew or freezing temperatures. As with any coating, cooler temperatures and high humidity will slow the cure time.

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:

Positioning the Roofing Membrane

Position the roll at the approximate application point, and unroll. If the membrane is wider than 10' (3.05 m), unfold the membrane to its fullest width. Move the membrane into place without stretching. The unfolding and movement of the membrane can be aided by waving the sheet in such a way as to pump a cushion of air under the sheet, creating a floating effect which simplifies movement of the sheet over the substrate.

When possible, begin the installation at the highest point of the project area, working to the lowest point. Making sure all the laps are shingled and do not buck water.

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. Visually inspect the membrane for any flaws or damage that would interfere with the acceptable application or performance of the membrane. Creases from the fold points can be very stubborn to flatten out, especially in cooler temperatures. These creases can create a problem in making the seam. The addition of heat to the area with an electric heat gun, **BEFORE APPLYING THE SEAM TAPE**, will help relax the sheet to a flat condition.

Apply the adjoining sheets in the same manner, lapping the edges a minimum of 3" (7.62 cm). Consult JM Technical Services for lap width requirements for guarantees 20 years or longer. 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.

Perimeter attachment of the roofing membrane at the perimeter and at penetrations can be accomplished by either mechanical fastening (using anchor discs or High Load plates) or adhesive fastening (using reinforced termination strips or RTS with Tape).

Mechanically Fastened Perimeter

Fasten the EPDM membrane to the structural deck using anchor discs or High Load plates 12" (30.48 cm) o.c. maximum, with appropriate fasteners.

Adhesive Fastened Perimeter

Adhere the EPDM membrane to the JM Reinforced Termination Strip (RTS) with Tape using JM EPDM Tape Primer which is fastened 12" (30.48 cm) o.c. maximum, using anchor discs or High Load plates with appropriate fasteners.

NOTE: Do not use JM EPDM Bonding Cement to attach the EPDM sheet to the RTS.

Tape Products Application

Note: Surfaces to be spliced must be cleaned and primed prior to the application of seam tape. Store seam tapes and peel and stick products in the shade when rooftop temperature exceed 75°F (24°C).

Position the top sheet to overlap the bottom sheet by a minimum of 3" (7.62 cm) at all locations for a 3" seam tape or a minimum of 6" (15.24 cm) for 6" seam tape, as indicated by the dotted sheet line. Sheets must be allowed to relax and must have no fishmouths or wrinkles along the lap edge. Remove all dirt, oil, water and other contaminants from the surfaces to be joined. Mark the position of the lap edge on the bottom sheet with a pencil, crayon or marker.

JM EPDM Tape Primer

Thoroughly mix the JM EPDM Tape Primer prior to application to suspend solids contained in the mixture. Periodically stir during use (every 5 to 10 minutes) to keep the solids in suspension.

Fold back the top sheet, exposing the surfaces to be cleaned. Use JM EPDM Tape Primer to thoroughly clean talc, dirt, etc., from the surface of both sheets in the area to be joined. Using a scrubbing pad, apply JM EPDM Tape Primer to the cleaned area at the rate of 350 to 400 ft²/gal (8.6 to 9.8 m²/l). Apply JM EPDM Tape Primer past the marked area and allow to dry thoroughly prior to application of tape products. **Do not dilute JM EPDM Tape Primer.**

Turn the scrubbing pads frequently and change them often to ensure that the release agent and dirt are completely removed from the sheet. Particular attention should be given to cleaning the factory splices in the membrane, since release agent tends to accumulate in this area during the manufacturing process. Scrub the JM EPDM Tape Primer into the factory splice in the direction of the factory splice to remove the release agent.

JM EPDM Splice Cleaner

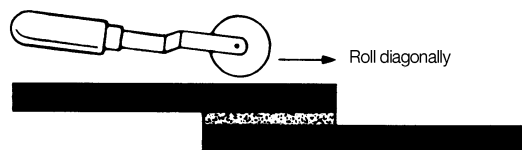
JM EPDM Splice Cleaner is an organic solvent mixture designed as a cleaning agent. Use to thoroughly clean dirt from JM EPDM membranes prior to applying primers or splice adhesives if needed.

The splice area must be completely free of all dust and talc and surfaces must be maintained free from moisture, oil and other foreign contaminants until the splice has been completed. Areas with heavy accumulations of dirt or other contaminants should be washed with warm water and a low sudsing soap and allowed to completely dry before using JM EPDM Tape Primer.

Seam Tape

Unroll approximately an 18" (45.72 cm) length of tape and apply to the splice area, aligning the edge of the release paper with the tape marks on the bottom sheet. Continue unrolling 18" (45.72 cm) lengths of the JM EPDM Seam Tape and securing each segment in place along the entire length of the seam. Take care to continue aligning the edge of the release paper within the marks on the bottom sheet. With the release paper still in place, roll the entire length of the seam with a 2" (5.08 cm) wide silicone rubber roller to ensure good contact of the JM EPDM Seam Tape with the bottom sheet. Avoid excessive rolling pressure that could stretch or deform the JM EPDM Seam Tape.

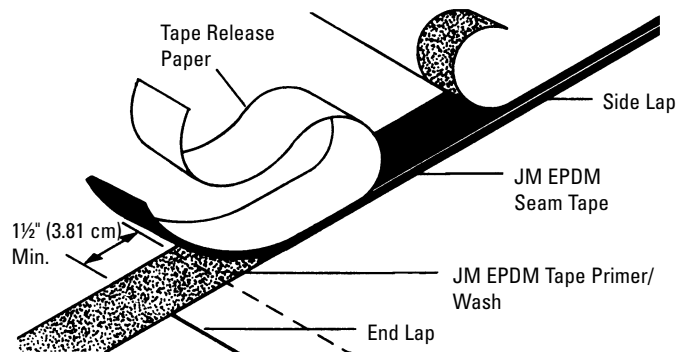
Fold the top sheet back over the JM EPDM Seam Tape with the release paper still in place. Starting at one end of the splice, remove the release paper from the JM EPDM Seam Tape by peeling it back parallel to the roof surface and away from the splice at a 45° angle. The top sheet should fall freely onto the exposed JM EPDM Seam Tape surface, leaving 1/8" to 1/4" (3.18 mm to 6.35 mm) of JM EPDM Seam Tape exposed.



To ensure proper lap adhesion, roll with a 2" (5.08 cm) wide silicone rubber hand roller, first perpendicular to the outer edge of the splice on a diagonal, and then along the length of the splice.

JM EPDM Seam Tape may be overlapped to form a continuous tape surface. **Overlaps must be a minimum of 2" (5.08 cm).**

Membrane end laps should be completed prior to making side laps. Special precautions must be taken at sheet end laps in order to minimize the impact of t-joints created with the side lap of the adjacent sheet.



When the entire t-joint has been fabricated, roll the area carefully to ensure that the JM EPDM Seam Tape is forced into the membrane edges and corners.

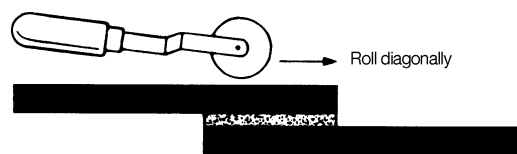
All t-joints in cured sheets **must** be covered with a patch that extends a minimum of 3" (7.62 cm) beyond all seam edges. It is acceptable to use uncured JM EPDM Peel & Stick Flashing products of the appropriate size.

See Detail EL-14T-A in the Flashing Details Section for a drawing that illustrates this installation.

JM EPDM Peel & Stick Flashing

Clean and prime the area to be flashed with JM EPDM Tape Primer, or other approved cleaning method, as described in the "Tape Products Application" section, to remove the talc and any dirt from the sheet, and to prime the surface for the tape application.

Unroll a manageable length of JM EPDM Peel & Stick Flashing and cut to length with scissors. Peel the release paper off the JM EPDM Peel & Stick Flashing. In certain details, i.e., corners, be sure to use the JM EPDM Peel & Stick Inside/Outside Corners with a split-back release film to prevent the flashing from sticking to itself. Press the exposed tape area firmly into place in the area to be flashed. Be careful to apply the JM EPDM Peel & Stick Flashing without over-stretching the material. Apply pressure to the installed flashing with a 2" (5.08 cm) wide silicone roller, first diagonally to the edge of the sheet, and then along the entire length of the flashing, to ensure proper adhesion.



Adjacent sheets of peel-and-stick flashing products must be lapped a minimum of 3" (7.62 cm) and primed with Tape Primer. Stitch the material tight in areas where the sheet makes elevation changes. Care should be taken during rolling to avoid scoring, gouging or thinning the product.

JM EPDM Peel & Stick T-Joint Patches

All t-joints in cured sheets and butt joints in field seams must be covered by a patch that extends a minimum of 3" (7.62 cm) beyond all seam edges. It is acceptable to use any uncured JM EPDM Peel & Stick Flashing product of the appropriate size. The sheets are cleaned and primed as described previously. Remove the release paper and center the JM EPDM Peel & Stick Patch over the butt joint or t-joint and press it into place. Apply pressure to the installed patch with a 2" (5.08 cm) wide silicone roller to ensure proper adhesion. See flashing detail EL-14T for an illustration of a t-joint.

JM EPDM Reinforced Termination Strip (RTS)

JM EPDM RTS has splice tape pre-applied along one edge of 6" (15.24 cm) reinforced JM EPDM Membrane. JM EPDM RTS with Tape can be installed horizontally or vertically in the angle change with the pre-applied tape facing up and toward the field of the roof. See detail EB-2T or EB-3T.

Position seam fastening plates $\frac{1}{8}$ " (3.18 cm) to 1" (2.54 cm) from the angle change. 12" (30.48 cm) o.c. maximum spacing is required. Secure with an approved fastener. Do not fasten plates over the top of release film, as this will cause film to tear when removed. Roll the field membrane onto the exposed tape and apply hand pressure to the splice area.

Application of Water Cutoffs

Water cutoffs are used to temporarily adhere roofing membrane to the roofing system substrate at the end of each day's work, to prevent moisture from getting under the roofing system.

Fold the edge of the roofing membrane back a minimum of 12" (30.48 cm). Clean the surface of the folded-back membrane with JM EPDM Tape Primer or other approved cleaning method. Apply a ¼" (6.35 mm) bead of JM EPDM Sealing Mastic or JM EPDM Pourable Sealer on the cleaned area of the sheet. If the roofing membrane installation is to be delayed for 14 days or more, or if the substrate surface is rough, apply two ¼" (6.35 mm) beads of sealant.

Next, fold the roofing membrane forward so that the bead(s) of sealant are in contact with the substrate. For proper adhesion, the surface of the substrate must be dry and free of dirt, dust or solvents. On existing bituminous roofs, all gravel and dirt must be removed in the area to be adhered.

Press the membrane into place over the sealant. Weight the edge of the sheet so that continuous pressure is applied over the area sealed to the substrate.

When the project is to resume, the sheet should be pulled loose from the substrate. The area to which the sealant has been applied should be cut off.

Phase Construction

One of the greatest hazards of roof construction is the application of a roofing system in "phases," where a partially completed roof system is left exposed to the weather for a period of time, even overnight. The remainder of the roofing system is installed at a later time. This can lead to entrapped moisture, which can cause premature failure of the roofing system.

Phase construction is unacceptable with any application.

Good roofing practice dictates that no more roofing area be started than can be completed that day. This means that the finished membrane **MUST** be installed and seamed all in the same day. Water cutoffs must be installed at all exposed edges and removed when application is restarted.

Cold Weather Applications

Roof applications below 40°F (4°C) require special precautions to ensure proper performance of the roofing system. JM strongly recommends that the following guidelines be used when applying roofing systems in cold weather.

1. Let the membrane "relax" longer, and work on sunny days, if possible.
2. Keep all adhesives warm so that they can be applied in a thin, uniform film.
3. Keep all seam tapes, cements and sealants at room temperature until they are used, so they can be applied properly.
4. Allow adequate time for the solvents in the cements and primers to "flash off" so that the laps will be properly fabricated. Check the "dryness" of the applied cements and primers carefully before joining the surfaces together.
5. Make sure that all frost and dew has evaporated before covering the roof deck and/or insulation with the membrane to prevent the entrapment of moisture within the finished roofing system.