

1.0 General

1.01 Description

A. Scope

1. Furnish and install a **JM EPDM Adhered Roofing Membrane** with flashings and all other incidental and accessory items to comprise a roofing system.
2. All work shall be in strict accordance with Detail Drawings and specifications issued by Johns Manville (JM) for JM EPDM roofing systems.

B. Related Work

The work includes, but is not necessarily limited to the installation of:

1. Wood blocking
2. Vapor retarders
3. Insulation
4. Roof membranes
5. Membrane flashings
6. Cleaners
7. Adhesives
8. Sealants
9. Seaming tapes
10. Tape primers
11. Fasteners
12. Metal flashings
13. Walkways
14. Expansion joints
15. Drains
16. Fascia and copings
17. Plumbing modifications
18. Mechanical modifications
19. Electrical modifications

1.02 Submittals

- A. The roofing contractor shall submit all required items at the time of bidding in one comprehensive package. This package includes:
 1. Copies of specifications.
 2. Samples of the major components (i.e., membrane, insulation and flashing) of the roofing system.
 3. The JM EPDM roofing systems printed product data.
 4. Specimen copies of the JM Peak Advantage Guarantee.
 5. Dimensioned shop drawings of the roof including building height.

1.03 Quality Assurance

- A. The roofing contractor must be authorized by JM Roofing Systems to install JM EPDM Adhered roofing systems.
- B. The roofing contractor must have been trained by a technical representative of JM Roofing Systems and be familiar with the product.

- C. The roofing contractor shall submit the completed Pre-Installation Notice (PIN) to the JM Technical Services Department for acceptance before ordering materials.
- D. No deviations shall be made from this specification or the JM roofing systems Detail Drawings for JM EPDM roofing systems without prior written authorization from the JM Technical Services Department.
- E. Upon completion of the installation, and after written notification to JM that all work has been completed in strict accordance with the contract specifications and the JM requirements, a guarantee evaluation shall be made by a representative of JM for the purpose of determining whether the system installed meets the JM requirements for issuance of the JM Peak Advantage Guarantee.

1.04 Delivery, Storage and Handling

- A. Deliver all materials to the job site in their original, tightly-sealed containers or unopened packages.
- B. All materials shall be clearly labeled with the name of the manufacturer and product identification.
- C. All materials must be protected from damage during transit, handling, storage and installation.
- D. All materials shall be stored in a dry area and protected from the elements. Membrane rolls shall be stored flat on pallets.
- E. Adhesives and curable materials shall be stored at temperatures above 50°F (10°C) but not exceeding 80°F (27°C).
- F. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined in the Material Safety Data Sheets published by the manufacturer.
- G. All materials determined to have been damaged shall be replaced with new materials.

1.05 Job Conditions

- A. This specification is acceptable for use with structures designed to support the adhered roof assembly. The adequacy of the structural support must be verified by the owner, or the technical representative of the owner. Potential live loads, such as snow or ponding water should be considered.
- B. JM EPDM roofing materials may be installed under certain adverse weather conditions such as extremes of high and low temperatures or high humidity conditions but only after consulting the JM Technical Services Department since special precautions may have to be applied. Installation costs, production rates and material handling may be affected by the foregoing conditions.
- C. Only as much new roofing as can be made weathertight shall be installed each day. This includes all flashing work.



- D. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.
- E. Prior to and during application, the contractor shall ensure that all dirt, debris, and dust be removed from surfaces to be roofed for both new and reroofing substrates.
- F. On all reroof jobs and all lightweight deck systems, pullout tests shall be performed by the representative of the owner or the roofing contractor prior to bid submittal to verify the condition of the deck or substrate and to confirm system pullout values for those areas which will have mechanical attachment of the insulation or any other component of the roofing system. A minimum of 10 pullout tests for areas up to 500 squares (4,645 sq. meters) and 2 tests per 100 squares (929 sq. meters) thereafter, is considered sufficient. Approximately 60% of the tests should be taken in perimeter areas and the remainder from the field areas. A written report of pullout test results shall be submitted to the JM Technical Services Department for review.
- G. Precautions shall be taken to prevent wind blow-off or wind damage during the course of the roofing application. This may necessitate additional securement of temporary construction.
- H. The contractor shall verify and ensure that all roof drain lines are unblocked before starting work. If any drain blockages are found, they shall be reported in writing to the owner or his representative and to the JM Technical Services Department.
- I. Temporary waterstops shall be installed at the end of each work day or if inclement weather conditions dictate. These temporary waterstops shall be removed at the start of the next work day and disposed of properly.
- J. Do not install the JM EPDM roofing membrane in direct contact with any product containing asphalt, coal tar pitch, creosote or other harmful materials. Consult the JM Technical Services Department for special installation requirements.
- K. Do not allow waste products containing petroleum, grease, acid, solvents, vegetable or mineral oil, animal oil, animal fat, coal tar pitch, etc. or direct steam venting to come into direct contact with the JM EPDM roofing membrane. Contact the JM Technical Services Department for recommendations if such conditions exist.
- L. The contractor shall follow all safety regulations as recommended by OSHA.
- M. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks. Arrange work sequences to avoid use of newly constructed roofing for storage, walking surfaces and equipment movement.
- Contractor shall provide all necessary protection and barriers to segregate the work areas and prevent damage to adjacent areas. If excessive foot traffic over newly installed membrane is necessary, the contractor shall provide plywood to prevent damage.
- N. All existing roofing materials to be torn off shall be immediately removed from the site to a dumping area authorized to receive such debris.
- O. Any unusual or concealed conditions discovered during the course of the work should be immediately reported in writing to the owner or their representative. All work shall be halted until the owner or their representative has responded with a solution to the problem.
- P. When a system is specified to meet an Underwriter's Laboratory (UL) or an FM Global (FM) rating, all materials used in the system must be properly labeled and/or approved for that particular rating/system.
- Q. Local building codes and requirements must be followed where applicable. It is the sole responsibility of the roofing contractor to determine all local building code requirements and to ensure that the roofing system selected complies with such code requirements.
- R. Certain project conditions may require some modification to this specification. Contact the JM Technical Services Department if any of the following conditions exist:
1. Roof height greater than 60 feet (18.3 m).
 2. Geographical location with a roof field area uplift pressure of 46 psf (225 kgs. per sq. meter) or higher, per the FM Global current edition of Loss Prevention Data Sheet 1-28.
 3. Geographical location in a 115 mph (185 km/hr) or greater wind zone, per the ANSI/ASCE 7 50-year mean recurrence interval wind isotach.
 4. Location with a "D" exposure as determined in the latest version of ANSI/ASCE 7.
 5. Buildings with high internal humidity, such as swimming pools, textile mills, paper mills, etc.
 6. Buildings which are highly pressurized or have the potential for high internal pressures.
 7. Deck systems unable to achieve at least a pullout force of 400 lbs./lineal foot (5.9 kN/m) when using an acceptable JM fastener.
 8. Buildings with large openings, canopies or overhead doors.
- S. Adhesives, caulking materials, primer wash and sealants contain ingredients which can be toxic and very flammable. Use these products only in fully ventilated areas. Avoid breathing vapor and do not use near heat, sparks, or open flames. Do not smoke while using these materials or when in areas near them.
- T. JM recommends the use of adhesive lap splicing only on selected flashing details where the use of lap cement is noted and nowhere else.



1.06 JM Peak Advantage Guarantees and Warranties

A. JM Peak Advantage Guarantees and Warranties

JM offers a choice of either material warranties or more comprehensive roofing guarantees to the owner. The desired warranty or guarantee shall be selected from the following list prior to starting the project.

1. **NDL (No Dollar Limit) Guarantee** - This Guarantee assures the owner that JM, under the Roof Guarantee Agreement, is responsible for maintaining the roof in a watertight condition if leaks occur solely as a result of deterioration of or improper workmanship in applying the JM materials or products. The obligation under the JM NDL Guarantee is for a specific number of years (typically 10 or 15 years) and specifies no maximum monetary amount of coverage (No Dollar Limit).

2. **Full Value (Original Installed Cost)** - This Guarantee assures the owner that JM, under the Roof Guarantee Agreement, is responsible for maintaining the roof in a watertight condition if leaks occur solely as a result of deterioration of or improper workmanship in applying the JM materials or products. The obligation under the JM Full Value Guarantee is for a specific number of years (typically 10 or 15 years) and specifies a maximum monetary amount of coverage equal to the Original Installed Cost (OIC) of the JM materials and products.

3. **Material Warranty** - This Warranty ensures the owner that JM, under the Material Warranty Agreement, is responsible, at the election of JM, to either re-supply a prorated amount of like material or to issue a credit for the prorated cost of the defective material. This Warranty applies only to the JM membrane determined to be defective and only when roof leaks are occurring due to that defective membrane. The obligation under the Material Warranty is typically for 10 or 15 years and specifies that the monetary obligation shall not exceed the prorated material cost as set forth in the schedule provided in the Material Warranty.

B. Maintenance

Long-term performance of a roofing system depends on an adequate, ongoing maintenance program. JM requires building owners to establish regularly scheduled annual inspections to ascertain the condition of the roofing system and to perform those maintenance items required to keep the roofing system performing properly. Records of all maintenance work performed must be retained for the entire JM Guarantee period. Please refer to the reverse side of the applicable JM Peak Advantage Guarantee document or consult the JM Technical Services Department for specific recommendations.

Part 2 - Products

2.01 General

- A. JM EPDM Adhered Roofing System components are to be produced or supplied by JM.
- B. Components to be used other than those supplied by JM may be accepted based upon chemical compatibility and published performance data. The specifications, installation instructions, limitations and/or restrictions of the respective manufacturers must be reviewed by the designer and the JM Technical Services Department for acceptability for use with the JM roofing system. All of these components may be considered on a case-by-case basis and must be accepted in writing by the JM Technical Services Department.

2.02 Roofing Membrane

- A. JM black EPDM Membranes are available in either reinforced (45 mil, 60 mil, 75 mil [1.1 mm, 1.5 mm, 1.9 mm]) or non-reinforced (45 mil, 60 mil, 90 mil [1.1 mm, 1.5 mm, 1.9 mm]) as well as in fire-retardant versions.
- B. JM EPDM Membrane shall equal or exceed the minimum physical properties published in JM EPDM product data sheets.

2.03 Related Materials

- A. The following products supplied by JM are for use with the JM EPDM systems:
 1. Insulation
 2. Expansion joint covers
 3. JM EPDM Tape Primer/Wash
 4. JM EPDM Bonding Cement
 5. JM EPDM Lap Cement
 6. JM EPDM Seam Tape
 7. JM EPDM Peel and Stick Tape
 8. JM EPDM Flashing
 9. JM EPDM Lap Caulk
 10. JM EPDM Sealing Mastic
 11. JM EPDM Pourable Sealer
 12. JM Prefabricated Flashing
 13. JM Termination Bar
 14. JM Fasteners/Anchors
 15. JM EPDM Walkpads
- B. **Other Materials:**
 1. **Wood Nailers**
Shall be #2 or better lumber, and conform to the current JM and NRCA recommendations on wood nailers as well as conform to the FM Global Loss Prevention Data Sheet 1-49. Creosote and asphaltic preservatives are not acceptable.



2. Vapor Retarders

Vapor retarder shall meet specified codes and/or insurance requirements, be compatible with insulation and other accessories and be acceptable to JM. **It is the sole responsibility of the design professional to determine the need for a vapor retarder, and its type and location in the roofing system.**

3. Insulation Materials

1. Insulation shall be installed as a separation layer over the existing substrate and/or to obtain the desired thermal value.
2. Insulation shall be compatible with JM EPDM membranes.
3. The following roofing insulation boards are acceptable for use in a JM EPDM Adhered Roofing System:
 - a. ENRGY 3, ISO 3, Tapered ENRGY 3, Tapered ISO 3 and Invinso polyisocyanurate insulations having a non-asphaltic facer meeting or exceeding the requirements of ASTM C 1289 with a minimum compressive resistance of 18 psi (124 kPa).
 - b. ½" (15 mm) Retro-Fit perlite insulation meeting ASTM C 728.
 - c. JM high density wood fiberboard with non-asphaltic binders.
4. Insulation(s) shall have a minimum "R" value of _____.
5. Insulation(s) thickness shall be a minimum of _____ inches (_____ mm).

2.04 Precautions

- A. Do not use JM EPDM roofing systems products near fire or flame.
- B. Avoid breathing vapors of solvent, sealant and adhesives. Use adequate ventilation. Avoid prolonged contact of solvents, sealants and adhesives with skin.
- C. Do not use open flames to expedite drying of surfaces, sealants or adhesives.
- D. Consult Material Safety Data Sheets and container labels for specific safety instructions. MSDS sheets are available by calling the JM Product Information Center at 1-800-654-3103, or JM Web site at www.jm.com.
- E. For coatings over JM EPDM membrane or flashing, consult with the JM Technical Services Department for specific recommendations.

Part 3 - Execution

3.01 General

- A. When installing JM EPDM Adhered Membrane Roofing in cooler weather, it is required that adhesives, sealants, etc. be stored at temperatures of 50°F (10°C) or warmer prior to use.
- B. Rooftop temperatures should be 40°F (4°C) or higher during application of sealants and adhesives.
- C. Job conditions permitting, work should begin at the highest roof point and proceed toward the lowest roof point to minimize the possibility of moisture infiltration into the newly completed roof areas. Care should be taken to ensure that all laps are sealed so that water flow is not impeded.
- D. At the end of each day, all flashings, terminations, and night tie-offs must be completed for each roof section. Installed field membrane should be properly secured to prevent the system from lifting.

3.02 Substrate Conditions

The following general conditions apply to the substrate that will receive a JM EPDM Adhered System for both reroof and new construction:

- A. The roof deck must be structurally sound to provide proper securement for mechanical fasteners. Areas showing a loss of integrity due to corrosion, rotting, warping, concrete spalling, etc., must be repaired or replaced prior to installing the roofing system.
- B. It is imperative that the roofing contractor make test cuts at each roof area prior to reroofing. The condition of the substrate must be suitable to receive a JM EPDM Adhered Roofing System. Wet insulation must be removed and replaced. See Single Ply Roofing Industry (SPRI) Guidelines for determining wet insulation.
- C. Contact the JM Technical Services Department when substrate is exposed to excessively high humidity and/or a corrosive environment. Special fasteners or details may be required.
- D. It is acceptable to install a JM EPDM Adhered Roofing System over the following deck substrates in new construction, provided that an acceptable insulation is installed over the substrate as needed:
 1. Structural metal deck (22 gauge [0.76 mm] minimum) shall conform to recommendations outlined in the FM Global Loss Prevention Data Sheet 1-29.
 2. Plywood (15/32" [12 mm] or 7/16" [11 mm] OSB (Oriented Strand Board) minimum) shall be exterior grade (minimum APA rated Structural Sheathing, Exposure 1).
 3. Structural concrete and pre-cast, pre-stressed concrete (3,000 psi [20,685 kPa] minimum) shall be cured and dry to industry standards, and surface shall be smooth and free of moisture or frost. All sharp ridges or other projections above the surface shall be removed before roofing.



4. Lightweight insulating concrete fill and metal formwork (minimum 26 gauge [0.45 mm] metal formwork) - the roof deck shall be cured and dry to the manufacturer of the deck and/or industry standards and shall be smooth and free of ridges and depressions. All necessary venting as recommended by the roof deck manufacturer shall be accomplished.
 5. Wood plank (1" [25 mm] minimum) shall conform to the FM Global requirements for Class I decks.
 6. Cementitious wood fiber decks - Certain cementitious wood fiber decks may be acceptable to receive a JM EPDM Adhered Roofing System after pullout tests have been completed and appropriate fasteners have been selected for insulation attachment. For specific recommendations, consult the JM Technical Services Department.
 7. Gypsum concrete deck shall be cured and dry to the manufacturer and/or industry standards. The surface of the deck shall be smooth and free from ridges and depressions.
 8. Contact the JM Technical Services Department for detailed requirements for these deck types and others not listed above, including roofing.
 9. A determination must be made regarding the presence of coal tar pitch within the existing roof assembly. The presence of coal tar pitch requires special precautions. For all deck types, a JM DN Flameguard slipsheet must be installed directly on top of the properly spudded coal tar with all joints butted tightly together or completely taped to prevent volatiles from damaging roof membrane, followed by appropriate insulation. JM recommends against mechanically fastening through coal tar pitch roofs on steel decks, unless the fastener is isolated from the membrane by a layer of insulation a minimum of 1½" (40 mm) thick having a minimum "R" value of 9.0 (hr•ft²•°F)/Btu (1.58 m²•°C/W).
2. Retrofit installations must have a non-destructive moisture analysis conducted, supplemented with destructive testing to determine wet and damaged roof materials. All such materials must be removed and replaced prior to installation of the new roof. Blisters, buckles and ridges shall be cut and patched to provide a reasonably level substrate surface.
 3. Gravel, previously installed over existing nailers, must be totally removed prior to installing new nailers and flashings. Verify that the existing nailers are securely anchored to the roof decks.
 4. When an additional thickness of insulation is being added, new nailers must be added to match the height of the new insulation. Nailers must be securely anchored to the roof deck per Section 3.05.
 5. All roof surfaces shall be free of ponding water, ice and snow.
 6. The specifier and/or roofing contractor shall determine the condition of the existing roof deck and roofing for appropriateness to reroof. Areas with deteriorated decking, wet insulation or other materials are to be removed and replaced.
 7. When removing an existing roof during reroofing, remove only that amount of roofing and flashing that can be made watertight with new JM materials in a one-day period or prior to the onset of inclement weather.

3.03 Preparation of Existing Substrate

A. General

1. To prevent delays or interruptions, coordinate work with other trades or suppliers to ensure that components which are to be incorporated into the JM EPDM Adhered roofing system are available as the work progresses. Examine substrates to which the roofing materials are to be applied to ensure that their condition is satisfactory for the JM EPDM Adhered Roofing System application. Do not permit voids greater than ¼" (8 mm) width in the substrate. Concrete substrates shall be cured and free of laitance and curing compounds. Substrates for roofing materials shall be dry and free of oil, dirt, grease, sharp edges and debris. Inspect substrates and correct defects before application of roofing membrane.

3.04 Vapor Retarder Installation (Where Specified)

General

Specific climatic and job conditions may require the use of a vapor retarder. It is the sole responsibility of the design professional to determine the need for a vapor retarder and its type and location in the roofing system. A vapor retarder may often act as an "air barrier" which may have a positive effect in reducing internal air pressure. Air barriers should be strongly considered for buildings subject to high internal air pressures such as airplane hangars and buildings with loading bays, such as warehouse facilities. The National Roofing Contractor's Association recommends the installation of vapor retarders when interior relative humidity is 45% or greater, and/or the outside mean January temperature is below 40°F (40°C). Install a vapor retarder over a suitable substrate with all side and end laps and all penetrations sealed in accordance with the instructions of the manufacturer. The vapor retarder may be loosely laid or adhered with the adhesive recommended by the manufacturer. In reroofing, where the existing bituminous roof is to remain, the bituminous roof may be an adequate vapor retarder provided all splits and/or tears are repaired in order to minimize vapor penetration. The vapor retarder system must provide sufficient attachment to the rest of the roof system to provide the necessary wind uplift resistance for the adhered JM EPDM roof.



3.05 Wood Nailers

- A. Install nailers at the perimeter of the roof and around all roof penetrations and projections (unless otherwise shown on the JM Detail Drawings for EPDM).
- B. In all areas where nailers are required by JM or to comply with FM Global, they shall be firmly anchored to the deck to resist a minimum force of 200 lbs./lineal foot (2.9 kN/m) in any direction. A ½" (15 mm) vent space shall be provided between adjacent lengths of nailers. Fasteners shall be installed within 6" (150 mm) of each end. Spacing and fastener embedment shall conform to FM Global Loss Prevention Data Sheet 1-49.
- C. Height of nailers shall match the surface level of the insulation.
- D. All woodwork to be reused shall resist a minimum force of 200 lbs./lineal foot (2.9 kN/m) in any direction and shall be free of rot. If any existing woodwork is questionable, it should be removed and replaced with suitable new materials.

3.06 Insulation Installation

A. General

1. Insulation shall be installed in accordance with the current published JM specifications and recommendations for use with adhered roofing systems. All joints shall be tight and in parallel courses with end joints staggered. When more than one layer of insulation is to be used, succeeding layers are to be laid staggered in relation to the previous layer of insulation and all joints shall be likewise staggered.
2. Insulation shall be neatly cut to fit around all penetrations and projections with a maximum allowable gap of ¼" (8 mm).
3. Open joints shall be repaired with like insulation material.
4. When the insulation is installed on steel decks after a complete tear-off or in new construction, no edges are to be left unsupported along the flanges.
5. Insulation shall be feathered or tapered to provide a sump area a minimum of 36" x 36" (0.92 m x 0.92 m) where possible at all drains.
6. Install no more insulation in one day than can be covered with the JM EPDM Adhered Membrane or when the onset of inclement weather is anticipated.
7. Install tapered insulation in accordance with the JM Tapered Design Group shop drawings.

B. Mechanical Attachment

1. All insulation boards must be mechanically attached to "standard" decks unless specifically accepted for hot asphalt securement for the particular application by JM EPDM roofing systems.

2. "Standard" decks shall be defined as 22 gauge (0.76 mm) or heavier steel decks, poured structural concrete 3000 psi (20,685 kPa) or greater, ½" (12 mm) or greater plywood, ¾" (11mm) or greater OSB and 1" (25 mm) minimum wood plank. Other deck types may be accepted by JM for mechanical attachment of insulation in certain, specific applications. Contact the JM Technical Services Department in these cases.
3. All insulation must be secured to the structural deck with fasteners acceptable to JM at rates published by the insulation manufacturer and recommendations published by FM Global for adhered applications as a minimum standard. Additional fastening may be required to provide an acceptable substrate depending upon actual project conditions.

C. Hot Asphalt Attachment

1. In some applications, JM may permit the use of asphalt to attach roof insulation to structural concrete, base sheets, or existing BUR systems.
2. Insulation must be asphalt attached in accordance with the guidelines established by JM.
3. Maximum insulation board size for hot asphalt attachment shall be 4' x 4' (1.22 m x 1.22 m).
4. JM will not accept hot asphalt attachment of insulation on slopes greater than 1:12 without prior written approval from JM.
5. When attaching roof insulation boards with hot asphalt, the roof insulation boards must be carefully set and then stepped into place in a manner to promote maximum adhesion and to prevent asphalt contamination of the JM EPDM membrane. No asphalt is to come into contact with the EPDM membrane.

D. High Humidity Applications

1. Certain high humidity applications will require the use of a vapor retarder. It is the sole responsibility of the design professional to determine the type and location of the vapor retarder in the roofing system.
2. In certain, specific applications, a first layer of a suitable insulation may be attached to the structural deck. A base sheet vapor retarder shall be adhered to the insulation with asphalt at a rate of 30 lbs.(nominal) per 100 sq. ft. (1.46 kgs./sq. meter). The base sheet vapor retarder shall be installed in accordance with JM guidelines. The second layer of insulation shall be adhered to the base sheet vapor retarder in a full mopping of asphalt and shall be laid in a manner to ensure that all insulation joints are staggered from the first layer. The dew point should be calculated to fall within the second layer of insulation.



E. Lightweight Insulating Concrete Decks

1. In certain specific applications, JM may permit the full mopping of insulations to a JM base sheet that has been mechanically attached to certain lightweight, insulating concrete decks with the appropriate fasteners.
2. Certified base sheet fastener pullout tests must be performed in accordance with the JM fastener pullout test worksheet and submitted to the JM Technical Services Department for evaluation. Acceptance or non-acceptance by JM of a particular project will be based on actual project conditions and fastener pullout test results.
3. Insulation in JM EPDM Adhered Specifications may be mechanically fastened with an acceptable fastener directly to the lightweight insulating concrete substrate. Consult the JM Technical Services Department for further information.

3.07 Membrane Installation

A. General

The JM Adhered EPDM Roofing Membrane shall only be applied over compatible, clean, dry and smooth surfaces in accordance with the JM EPDM Detail Drawings. The application shall begin at the highest elevation and continue to the lowest elevation of each individual roof. The seams shall be overlapped in the direction of the slope of the roof. Except where no other alternative exists, good roofing practice dictates that the sheets should be laid shingle fashion, against the slope, in order to avoid back-water laps.

B. Adhering Membrane

1. The JM membrane shall be unrolled without inducing tension, stretching or wrinkles, and allowed to relax for a minimum of 30 minutes.
2. Ensure the membranes overlap sufficiently to permit a 3" (80 mm) minimum splice for a taped seam.
3. Fold the sheet back onto itself in such a manner so that one-half of the underside is exposed. The fold shall be smooth and free of wrinkles.
4. With a roller, evenly apply a coat of JM Bonding Cement to the exposed underside of the membrane and to the substrate. Do not allow the adhesive to glob or puddle.
5. Allow the cement to dry until it is tacky but does not string or stick when touched with a dry, clean finger.
6. The coated membrane must then be rolled onto the coated substrate avoiding wrinkling and stretching.
7. To ensure good adhesive contact, the bonded half of the membrane is then brushed down with a stiff push broom or rolled with a lawn type roller.
8. The unbonded half of the sheet is then to be folded back and the procedure repeated.

9. Care must be taken to avoid contaminating the seam area with bonding adhesive. Any contamination shall be thoroughly cleaned from the seam areas.
10. Refer to data pages for adhesive coverage rate.

C. Membrane Lap Splicing - Seam Tape

1. Arrange the adjacent membrane sheets to overlap a minimum of 4" (100 mm). Fold back the top sheet to permit priming of both surfaces to be spliced. The sheets should be laid out in an offset pattern with a minimum of 3' (0.92 m) between the adjacent end laps.
2. Mark the bottom sheet with a permanent marker approximately ½" (15 mm) away from where the top sheet overlaps. Space the markings 2' (0.61 m) apart along the entire edge of the seam.
3. JM EPDM Tape Primer/Wash is then applied to an area wider than the lap to ensure bonding to a primed surface. Using a scrubbing pad or a clean, lint-free rag saturated with EPDM Tape Primer/Wash, scrub the surface of the membrane. When the rag or pad becomes dirty, discard appropriately and use a fresh rag or pad. The surfaces must be dry to the touch before tape products can be applied. If the primer application has covered the edge location marks, remark the bottom sheet with a permanent marker approximately ½" (15 mm) from the edge of the top sheet. The surface area must remain completely free of all dust and release agent, and surfaces must be maintained free from moisture, oil and foreign contaminants until the splice has been completed.
4. Fold back the top sheet. Unroll approximately an 18" (450 mm) length of JM EPDM Seam Tape and apply to the splice area, aligning the edge of the release paper with the marks on the bottom JM EPDM sheet. Continue unrolling 18" (450 mm) lengths of the JM EPDM Seam Tape securing each segment in place along the entire length of the JM EPDM seam. Take care to continue aligning the edge of the release paper with the marks on the bottom JM EPDM sheet. With the release paper still in place, roll across the seam area for the entire length of the seam with a 2" (50 mm) steel roller to ensure good contact of the JM EPDM Seam Tape with the bottom JM EPDM sheet. Avoid excessive rolling pressure which could stretch or deform the JM EPDM Seam Tape.
5. Roll the top JM EPDM sheet back onto 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 degree angle. The top JM EPDM sheet should fall freely onto the exposed JM EPDM Seam Tape surface.
6. Using a 2" (50 mm), silicone rubber roller, hand roll the seam; first perpendicular across the entire splice and toward the outside edge of the splice, and then along the length of the splice. Provide sufficient pressure to ensure a good seal.



7. JM EPDM Seam Tapes must be overlapped a minimum of 2" (50 mm) to ensure a continuous tape surface.
8. Membrane end laps should be completed prior to making side laps. Special precautions must be taken at JM EPDM sheet end laps in order to minimize the impact of "T" seams created with the side lap of the adjacent sheet
9. All "T" seams formed with cured JM EPDM sheets must be covered with a patch that extends a minimum of 3" (80 mm) beyond all seam edges. It is acceptable to use any uncured Peel & Stick JM EPDM products of the appropriate size. Refer to the JM Detail Drawing EL-14T for more information.

D. Membrane Securement

Membrane securement is required at all base tie-ins and penetrations including curbs, skylights, interior walls, etc., and where the membrane terminates or changes slope greater than 2:12. Refer to JM EPDM Detail Drawings for specific securement options.

3.08 Membrane Flashing

General

Cured JM EPDM membrane shall be used for flashing of all straight walls, large curbs, and all large, straight-sided penetrations. JM EPDM Flashing or JM EPDM Peel & Stick Flashing shall be used for flashing of all pourable sealer penetration pockets, vent pipes, scuppers, curbs, T-Joints, inside/outside corners of wall flashings, etc.

- A. All pipe penetrations are to be flashed with JM EPDM Flashing, JM EPDM Peel & Stick Flashing or JM EPDM Pre-Molded Pipe Boots. Refer to all applicable JM EPDM Detail Drawings.
- B. Straight run wall and curb flashings shall be flashed with JM EPDM membrane. **Note: All flashings are to extend a minimum height of 8" (200 mm) above the roof level.**
- C. On all re-roofing applications, loose flashing materials must be removed down to a sound substrate and replaced with new flashing. To ensure proper drainage of the existing structure, weep holes must never be covered by new flashings.
- D. Terminations utilizing aluminum compression bars or surface-mounted counterflashings must be secured directly to a smooth and sealed wall surface.
- E. JM EPDM wall flashings terminated with metal copings must be fully extended under the coping and mechanically fastened a minimum 1½" (40 mm) down the face of the wall.
- F. JM EPDM Flashing Membrane shall be adhered to the substrate using JM EPDM Bonding Cement. Follow the JM EPDM adhered instructions for correct application of this cement. The flashing membrane shall be rolled carefully into the substrate. Care must be taken to ensure that the flashing does not bridge at any change of direction, such as from the base of a parapet wall to the roof deck.

- G. Please reference the JM EPDM Detail Drawings in this manual or contact the JM Technical Services Department for specific flashing details.

H. Lap Splicing - Adhesive

1. JM recommends the use of adhesive lap splicing only on selected flashing details where the use of lap cement is noted and nowhere else.
2. Arrange adjacent membrane sheets to overlap a minimum of 4" (100 mm), then fold back the top sheet to permit cleaning of both surfaces to be spliced. The sheets should be laid out in an offset pattern with a minimum of 3' (0.92 m) between the adjacent end laps.
3. Fold back the top sheet, exposing the surfaces to be cleaned. Using JM EPDM Tape Primer/Wash and a clean scrubbing pad, or non-linting, natural fiber rag, thoroughly clean any release agent, dirt, etc. from the surface of both JM EPDM sheets in an area at least 1" (25 mm) wider than the splice area. Rags made of synthetic fibers such as polyester or rayon may not be used. Turn the cleaning rags/pads frequently and change them often to ensure that the release agent and dirt are completely removed from the JM EPDM sheet. Particular attention should be given to cleaning the factory splice in the direction of the factory splice to remove the release agent. The JM EPDM Tape Primer/Wash must be dry and tack free before applying the JM EPDM Lap Cement. XT or clean sheets need not be cleaned unless contaminated with dirt, debris or any other foreign material. The surface area must remain completely free of all dust and release agent, and surfaces must be maintained free from moisture, oil and 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 before using JM EPDM Tape Primer/Wash.
4. Stir JM EPDM Lap Cement thoroughly before using. Scrape the sides and bottom of the container until the adhesive has a greenish/gray appearance, with no accumulation of thicker material remaining on the bottom or sides of the container. A minimum of 1½ minutes stirring per container is required to ensure proper mixing. (**Do not thin the adhesive.**) Apply JM EPDM Lap Cement continuously on both mating surfaces with a 3" (80 mm) wide, ½" (15 mm) thick medium nap roller. Apply an even, heavy coat of cement to each bonding surface, avoiding blobs and puddles. Coverage rate for JM EPDM Lap Cement is approximately 150 lineal feet of completed splice per gallon (12.1 lin. meters per liter), for a 3" (80 mm) wide splice. A 3" or 4" (80 mm or 100 mm) wide, ½" (15 mm) thick paint brush may also be used to apply JM EPDM Lap Cement. For best results, apply liberally with a minimum number of strokes: a single back and forth "painting" stroke yields optimum results. Do not "scrub" the adhe-



sive into the surface. The JM EPDM Lap Cement must be applied to achieve a smooth surface without brush marks.

5. Allow JM EPDM Lap Cement to flash off. Touch lap cement with a clean dry finger applying slight downward pressure. If, when the finger is lifted, the lap cement is **not** wet or stringy, the seam is ready for mating. **Do not** let the lap cement become overly dry. If a film cannot be pushed, the lap cement is too dry.
6. To prevent stretching or wrinkling of the splice, carefully roll the top membrane toward the bottom lap area along the entire length of the prepared seam.
7. Using a 2" (50 mm) wide, 2 lbs. (0.9 kgs.) steel hand roller, apply even pressure across and perpendicular to the seam area in a manner to ensure full contact of the adhesive.
8. Wait 2 to 4 hours after completion of the splice. Clean the edge of the splice with JM EPDM Tape Primer/Wash. After the JM EPDM Tape Primer/Wash is dry and tack free, apply a $\frac{5}{16}$ " (8 mm) diameter bead of JM EPDM Lap Caulk along the edge. Do not feather the caulk. 100% coverage is required.

3.09 Walkway Installation

Walkways should be provided in areas where routine rooftop maintenance occurs and in areas where regular rooftop traffic is expected.

- A. JM EPDM Walkpads supplied by JM for JM EPDM systems can be adhered to the JM EPDM membrane with JM EPDM Lap Cement at a coverage rate of 1 gallon per 100 square feet (0.4 liters/sq. meter) for each side to be mated. Allow the adhesive to dry until tacky but not stringy before bonding. JM EPDM 3" (80 mm) Seam Tape may also be used. Install the 3" (80 mm) seam tape to the back of the JM EPDM Walkpad in rows 3" (80 mm) apart from side to side. Be sure to prime the back of the walkpad and the surface of the membrane with JM EPDM Tape Primer/Wash prior to application of the tape.
- B. Precast concrete pavers can be installed as a walkway surface. An additional protection sheet of JM Polyester Mat Protection Material, cured JM EPDM membrane or GlasPly® Premier must be used between the pavers and the base membrane. Please consult JM Technical Services Department for all plaza deck construction.

3.10 Waterstops

- A. Install temporary cutoffs around incomplete edges of roofing assembly at the end of each work day and when work must be postponed due to inclement weather. Straighten the insulation line using loosely laid pieces of insulation. Seal the JM EPDM membrane to the deck or existing membrane by performing the following procedure: Fold the edge of the roofing membrane back a minimum of 12" (300 mm). Clean the surface of the folded-back membrane with JM EPDM Tape Primer/Wash or other approved cleaning method. Apply a $\frac{1}{4}$ " (8 mm) bead of JM Lap Caulk or 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 $\frac{1}{4}$ " (8 mm) beads of sealant. Remove the temporary seals completely when work resumes, cutting out the contaminated membrane. Remove all sealant, contaminated membrane, insulation fillers, etc. from the work area and properly dispose off-site.

3.11 Maintenance

- A. Long-term performance of a roofing system depends on an adequate ongoing maintenance program. JM requires building owners to establish regularly scheduled annual inspections to ascertain the condition of the roofing system and to perform those maintenance items required to keep the roofing system performing properly. Records of all maintenance work performed must be retained for the entire JM Peak Advantage Guarantee period. Please refer to the reverse side of the applicable JM Peak Advantage Guarantee document or consult JM Technical Services Department for specific recommendations.

