

RUBBERGARD™ EPDM SA APPLICATION GUIDE

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I. MEMBRANE APPLICATION

Approved substrates must be clean, dry and free of foreign material such as grease and any debris which could inhibit adhesion. This may require cleaning with a broom or blower. No primers or adhesives required with the Firestone RubberGard EPDM SA other than noted below in section II.

A. Membrane

1. Insulation must be fastened per current Firestone technical specifications to provide a proper substrate for application.
2. Install RubberGard EPDM SA membrane only when membrane, substrate and ambient temperatures are min. 20 °F (-7 °C) and rising. Do not install RubberGard EPDM SA membrane below this minimum temperature.
3. RubberGard EPDM SA membrane requires no primer.
4. Unroll and position the membrane over the substrate to achieve the desired alignment and overlaps. Allow the membrane to relax a minimum of 30 minutes before final positioning and adhering.
5. Position all adjoining sheets in a manner that all lap seam areas along the length of the membrane overlap a minimum of 3" thus allowing for the application of QuickSeam™ 3" Splice Tape.
6. Position all adjoining sheets in a manner that the seams shed water or run parallel to the flow of water.
7. In order to cover runs greater than 100' (30.5 m); the RubberGard EPDM SA sheets may be spliced together using a butt lap. A Butt lap shall have no more than 1" wide gap between the sheet ends. An overlapped end lap is not recommended. The end lap shall be stripped in using QuickSeam Batten Cover and an appropriate Firestone primer extending a minimum of 1" past the perimeter of the QuickSeam Batten Cover. See appropriate Firestone Technical Information Sheets and Technical Details for specific application information and instructions.

II. MEMBRANE ATTACHMENT

A. Membrane Preparation

1. The RubberGard EPDM SA membrane may be installed on roofs up to 250' (76.20 m) in height. For heights exceeding 250' (76.20 m), contact the Quality Building Services Technical Department. **NOTE: This does not mean these systems are approved by the Factory Mutual Research Corporation. Contact Firestone or consult the Factory Mutual Approval Guide for approved assemblies.**
2. Insulation must be fastened per current Firestone technical specifications to provide a proper substrate for application.
3. Install RubberGard EPDM SA membrane only when membrane, substrate and ambient temperatures are min. 20 °F (-7 °C) and rising. Do not install RubberGard EPDM SA membrane below this minimum temperature.
4. RubberGard EPDM SA membrane requires no primer.
5. Unroll and position the membrane over the substrate to achieve the desired alignment and overlaps. Allow the membrane to relax a minimum of 30 minutes before final positioning and adhering.

B. Membrane Application

Field Membrane Application (Steps 1-5):

1. Once the membrane has relaxed in place a minimum of 30 minutes (longer in colder weather), and the seam positions are aligned, carefully fold back the leading edge of the membrane at one end to expose the release liner without disturbing the original position of the membrane.
2. Starting from the center split of the exposed release liner, remove the liner on both sides of the split at a 45° angle back beyond the membrane edge, making sure to have pulled enough of the release liner to hold below the membrane. Remove approximately 5' (minimum) of release liner from one end of the sheet and adhere it to the substrate. The release liner removed should be enough to extend out beyond the edges of the membrane. **NOTE: Do not fold the length of the roll in half.**

3. Keeping the membrane flat and secured, and seam overlap aligned, continue removing the release liner at a 45° angle along the length of the entire sheet (up to 100'). Pulling the release liner at a higher angle can cause the sheet to move and may trap air. The two halves of the release liner should be pulled out at the same time by two people. Keep the release liner as close to the roof surface as possible during removal. **NOTE: Removal of the liner and any handling of the exposed SA adhesive should be done by two people minimum.**
4. To initiate adhesion, use a stiff bristled broom and apply downward pressure to broom in the installed membrane. Broom the installed membrane across the width of the sheet working toward the roof edge. Repeat the process for the other half of the membrane by starting from the center and broom towards the field side of the roof.
5. Roll the installed membrane with a weighted roller (5 lb per lineal inch) across the width of the membrane sheet to ensure full contact with the substrate. **NOTE: Do not roll membrane in place with a weighted roller if installed over ISOGARD HD or RESISTA boards.**

Roof Edge (Gravel Stop, Gutter Edge) Membrane Application (Steps 1-6):

1. Align the membrane's position along the roof edge and allow the membrane to relax in place a minimum of 30 minutes (longer in colder weather).
2. To prepare the membrane for installation at the roof edge, carefully fold one end of the membrane sheet back approximately 10' (minimum). Fold the membrane from one end and do not fold along the length of the roll.
3. Starting with the outside (roof edge) liner, carefully pull it underneath the membrane, back towards the field of the roof at a 45° angle to expose the SA adhesive without disturbing the original position of the membrane. Next, pull the inside liner, making sure to maintain a 12" wide (minimum) separation between the two liner halves. Back-roll the exposed SA section (minimum 10') onto the prepared substrate and set in place without trapping any air or allowing wrinkles beneath the sheet. **NOTE: Removal of the liner and any handling of the exposed SA adhesive should be done by two people minimum.**
4. Keeping the release liner as close to the roof surface as possible and maintaining a 10' (minimum) space between the two liner halves, pull both the leading outside (roof edge) liner and then the following inside (field) liner sections at a 45° angle along the length of the roof edge. Pulling the release liner at a higher angle can cause the sheet to move and may trap air.
5. To initiate adhesion, use a stiff bristled broom and apply downward pressure to broom in the installed membrane. Broom the installed membrane across the width of the sheet working toward the roof edge. Repeat the process for the other half of the membrane by starting from the center and broom towards the field side of the roof.
6. Roll the installed membrane with a weighted roller (5 lb per lineal inch) across the width of the membrane sheet to ensure full contact with the substrate. **NOTE: Do not roll membrane in place with a weighted roller if installed over ISOGARD HD or RESISTA boards.**

III. SEAMING

NOTE: It is very important that both surfaces are clean and no moisture is present on the splicing surfaces.

1. Position the top membrane so that it overlaps the bottom membrane by a minimum 3" (76.20 mm). Mark the bottom membrane ½" (12.7 mm) from the edge of the top membrane with a lumber crayon or similar marking device to allow for ¼" to ½" (6.4 mm to 12.7 mm) of tape exposure from the finished seam. Fold the top membrane back to allow application of the Firestone Primer.
2. Stir the Firestone Primer thoroughly before using. **Do not thin.** A minimum of two (2) minutes of vigorous hand mixing with a wooden paint stirrer or its equivalent is required.
3. Push the molded handle of the Firestone QuickScrubber™ Pad & Handle into the scrub pad. Material to embed the micro fasteners into the pad material. Dip the pad into the primer, and allow it to saturate with primer.

4. Using a back and forth scrubbing motion, **apply the primer to both top and bottom seaming areas** to achieve a solidly primed surface without streaks or puddles at the application rate of 200 ft²/gal (4.9 m²/L). Do not overwork the primer or cause globs or irregularities. Firestone Primer is required on both mating surfaces to insure a properly installed lap seam. Provided the membrane is new and clean, separate cleaning prior to primer application is not necessary when using the QuickScrubber Pad & Handle to apply the primer to the membrane seaming areas.
5. Allow the primer to dry. Use the finger push method to determine when the primer is flashed off properly.
6. Position the 3" QuickSeam seam tape along the previously marked line and press in place, then using hand pressure, rub the seam tape release paper to make solid contact with the primed membrane. Using a 2" silicone hand roller roll the tape for a secure contact.
7. Allow the top membrane to fall freely onto the seam tape now in place. Pull the release paper at a 45° angle away from the seam, while using hand pressure to achieve sufficient contact across the top membrane at a right angle.
8. Use a 2" silicone coated rubber hand roller to hand roll the entire seam, first at a right angle toward the outer seam edge and then along the length of the seam. Make sure there is sufficient contact between the membrane and the seam tape. Special attention is needed at the factory seam step-downs.

NOTE: Firestone QuickSeam Joint Covers are required over all intersections where multiple layers (3 or more) of EPDM field membrane come together

IV. MEMBRANE SPLICE AT END LAPS

1. For subsequent panels, unroll the membrane and allow it to relax at least thirty (30) minutes. Position the top membrane to overlap the bottom membrane by 3" (76.20 mm). End laps (without selvage edge) are to be butted together and not overlapped. Wait to strip in end laps until overlapping panel has been installed and seam work is complete.
2. Apply appropriate Firestone Primer a minimum of 4" on each side of a butt end lap per Firestone details. Cover strip the butted end laps with QuickSeam 6" Batten Cover or 18" QuickSeam SA Flashing following good roofing practice.
3. Apply a high profile bead of Firestone EPDM Lap Sealant when required. See current Firestone details.
4. Any wrinkles found in the splice area or that impede the flow of water drainage must be cut out, laid flat and repaired prior to the end of the working day. The cut out wrinkle area must be cleaned and primed using the appropriate Firestone Primer before installing appropriate patching material. Apply a high profile bead of EPDM Lap Sealant around the entire field patch. See current Firestone Details.

NOTE: Store all primers, adhesives, sealants, tapes, etc. in their original unopened containers at temperatures between 60 °F (15.6 °C) and 80 °F (26.7 °C), prior to installation in cold weather.

V. PERIMETER AND BASE MEMBRANE SECUREMENT

1. Stir Firestone Primer thoroughly before using. **Do not thin.**
2. When using a Firestone QuickScrubber Pad & Handle, dip the pad into the appropriate Firestone primer, and allow it to saturate with primer.
3. While using a back and forth scrubbing motion, apply the Firestone Primer to the seaming area to achieve a solidly primed surface without streaks or puddles at the application rate of 200 ft²/gal (4.9 m²/L). Do not overwork the primer or cause globs or irregularities. If the membrane is new and clean, separate cleaning prior to primer application is not necessary when using the QuickScrubber Pad & Handle to apply the primer to the membrane seaming areas.
4. Allow the primer to dry until slightly tacky to a dry finger touch.

5. Fold the QuickSeam Joint Cover in half and hold by the edges while positioning the cover directly over the exact intersection of the T-Joint. Apply the QuickSeam Joint Cover to the primed T-joint area, starting in the middle and working outward in all directions. Brush your hand across the top of the QuickSeam Joint Cover to achieve sufficient contact.
6. Using a 2" silicone coated rubber hand roller, first hand roll the step-downs of the seams under the T-joint cover. Hand roll the entire T-joint cover.
7. Apply a high profile bead of Firestone EPDM Lap Sealant around the entire QuickSeam Joint Cover.

NOTE: A bead of high profile caulk will need to be applied 3" (76.20 mm) in each direction of the seam area away from the T-Joint Cover. Refer to current Firestone Technical Details.

VI. FLASHINGS

- A. Roof perimeter flashing and flashing around vents, skylights and miscellaneous roof projections must utilize RubberGard EPDM Flashing accessories to the greatest extent possible. Field fabricated detail flashings using Non Reinforced EPDM Flashing are acceptable only when a pre-molded flashing is not feasible, such as on pipes without top access.

Firestone Roofing Systems offer numerous options for flashing. See standard details.

1. Vertical Membrane Flashings (Parapets, Transitional Walls, Curbs, etc.) Walls, parapets, and/or curb flashings may be completed using Firestone RubberGard EPDM SA membrane. The leading edge on the roof membrane will need to be stripped in to make the area watertight.

NOTE: Primer is not required for most applications when applying EPDM SA or TPO SA on vertical walls. The use of an acceptable primer and/or additional surface preparation may be required prior to application, depending on the existing condition of the wall and if any moisture is present. Firestone recommends testing a small area for application to determine if a primer is required.

2. Flashing penetrations passing through the roofing membrane.
 - a) Flash all pipes with RubberGard EPDM pre-molded pipe flashings to the greatest extent possible. Field fabricated pipe flashings using RubberGard EPDM unsupported Flashing per standard Firestone Roofing Systems details acceptable when a pre-molded flashing is not feasible.

NOTE: All existing flashings must be removed before applying a new flashing.

- b) A complete line of RubberGard QuickSeam accessories may be used in conjunction with the RubberGard EPDM SA system.
 3. **SA Adhesive Overlap as Flashing (without selvage edge):** When used as flashing at a wall or curb, an acceptable primer is required on the field membrane at the overlap seam. Apply primer on the top surface of the lower EPDM SA membrane wherever the EPDM SA adhesive is used to create an overlapping seam. This overlapping seam must be stripped in using an acceptable and approved primer and cover tape.
- B. Expansion Joints and Building Control Joints.
Consult Firestone Roofing Systems standard details for various application methods.
- C. Penetration Pockets
Fill penetration pockets in accordance with Firestone Roofing Systems standard details.
- D. Roof Drains
1. Consult Firestone Roofing Systems standard details.
 2. Prepare substrate around each roof drain to prevent membrane bridging or distortion and to provide a smooth transition from the roof surface to the drain clamping ring.
 3. The surface between the clamping ring and the drain must be clean and smooth. Remove all existing flashing, cement or lead on retrofit projects down to bare clean metal.

4. Apply one (1) complete tube of Firestone Water Block Seal S-20 between drain bowl compression flange and the underside of the new membrane before compressing the new membrane to drain bowl assembly, with the compression ring mounted on the top surface of the new membrane. The detail is only complete when the water stop is fully compressed between the new membrane and the flange of the drain bowl, forming a solid seal between the two. Be careful to compress the assembly evenly to avoid cracking or breaking the drain compression ring. Cracked or broken drain compression rings will result in a reinspection of the finished roof system to make certain corrective measures have been made before Firestone will accept the roof system for warranty coverage.
 5. **All bolts and/or clamps must be in place in order to provide constant, even compression.** Missing drain bolts will result in a reinspection of the finished roof system to make certain corrective measures have been made before Firestone will accept the roof system for warranty coverage.
 6. Do not run seams through roof drains or sumps. If a seam is run through a drain sump, cut the membrane with the assembled seam outside of the drain compression ring area, and install a target patch of new membrane extending a minimum of 3" outside of the sump area and seamed into the field membrane, using Firestone standard seam tape procedures. Apply RubberGard EPDM QuickSeam T-Joint Covers and lap sealant as required at the target patch and to seam intersections in accordance with Firestone Details.
- E. Scuppers
1. Scuppers are to be constructed according to criteria detailed in the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Manual.
 2. As a minimum, Firestone requirements regarding scuppers are as follows: the scupper assembly must be fabricated from a minimum of 24 ga G-90 steel, 0.040" aluminum and be sized to fit snugly through the wall opening. All joints must be sealed according to SMACNA standards, and the scupper must include a continuous 3" wide interior face flange with continuous rounded corners. The scupper must also be of sufficient length to extend through the exterior wall by at least ½" and be capable of being sealed on the exterior of the building to prevent backflow into the roof system or wall cavity.
 3. In addition to the above, if a scupper is to be mounted at the deck to wall or parapet junction, a wood nailer of equal thickness to the roofing insulation must be secured to the structural deck below the scupper flange to provide a suitable mounting surface for the scupper.
 4. Cut the flashing membrane tightly to the scupper opening in the wall.
 5. Apply a heavy bead of Water Block Sealant S-20 around the scupper opening (15 LF (4.6 m) per tube).
 6. Insert the scupper sleeve into the scupper opening, and press the mounting flange into the Water Block Sealant S-20.
 7. Secure the flange to the substrate with an appropriate fastener.
 8. Flash scupper in accordance with the appropriate current Firestone scupper detail.
- F. Sheet Metal Work
1. Sheet metal work is not waterproofing. The installed membrane and roofing system must be made watertight before metal application.
 2. No roof system is complete until all the edges are terminated in such a way as to prevent water infiltration into the roofed structure. This typically involves the use of manufactured or shop fabricated metal detailing, such as coping caps, gravel stops, roof edging, flashing and counter-flashing components. All sheet metal work should be fabricated and installed according to SMACNA and National Roofing Contractors Association (NRCA) guidelines. Unless specifically agreed to in writing by Firestone Quality Building Services Group prior to installation, sheet metal work manufactured by others is not included in the Firestone warranty coverage.
 3. The designer and roofing contractor should be aware that many municipalities and states are beginning to enforce metal codes that, until recently, were merely used as guidelines. These metal codes relate to minimum standards on material, fabrication, and testing of roof related sheet metal work. It is the contractor's responsibility to review and know the building codes relating to their roofing projects in order to avoid costly remedial work to bring a project into compliance.

4. If the sheet metal work on a project is specified by the designer to be included in a full system warranty, use Firestone brand edge metal and coping products. Contact your Regional Sales Manager or Sales Representative for information.
 5. If a metal flashing product by others is submitted via a deviation request for inclusion in the warranty coverage, the following are minimum requirements for consideration:
 - a) The sheet metal work must be shop or factory formed or extruded.
 - b) The sheet metal work must be configured and installed in accordance with SMACNA guidelines and NRCA installation instructions.
 - c) Minimum requirements regarding sheet metal work material are 24 ga. (0.61 mm) G-90 Kynar pre-finished steel or 0.040" (1.02 mm) aluminum (mill finished, pre-finished or anodized).
 - d) A deviation request for inclusion of sheet metal work in warranty coverage must accompany the PIN form submitted by the installing contractor.
 - e) The deviation request must include shop drawings of the sheet metal work to be included and a roof plan showing the installed location and linear dimension for each profile.
 - f) Should the deviation request be granted, the installing contractor will be responsible to Firestone Roofing Systems for a period of two-years from the date of Firestones inspection and acceptance under their installers agreement.
 6. Sheet metal work installation, regardless of material source, must be according to the sheet metal work manufacturer's instructions available from the manufacturer or supplier.
 - a) Sheet metal work formed by roofing contractors must be fabricated and installed in accordance with SMACNA and NRCA recommendations. All flange-mounted sheet metal work must be flashed according to the appropriate Firestone material type's standard details. Sheet metal work formed by contractors is not eligible for warranty coverage unless the conditions listed under item "C" above are met and Firestone accepts the sheet metal work for warranty coverage in writing.
 - b) Sheet metal work by roofing contractors must have metal joints stripped-in to the uppermost edge of the metal dam on the roof side.
 - c) RubberGard EPDM SA projects using RubberGard EPDM QuickSeam Flashing to strip-in sheet metal work with a gravel dam (or a formed configuration that is capable of holding water on the edge of the installed cover tape) must have RubberGard Lap Sealant applied on both sides of the cover tape.
 7. The approval of sheet metal work for inclusion in warranty coverage is conditional upon acceptance by Firestone Roofing Systems, and, if approved, is subject to the "terms, conditions and limitations" of the requested warranty. Under no circumstance will any warranty coverage for sheet metal work exceed the wind speed limitation of the warranty issued for the roof system. Aesthetic appearance is expressly excluded from warranty coverage.
 8. Sheet metal work by others is not permitted on projects requiring full system warranties and wind speed coverage equal to, or greater than, 90 mph.
- G. Night Seal
1. Consult Firestone Roofing Systems standard details.
 2. At the completion of each day's work, a watertight seal must be established at any loose edge of membrane with an appropriate sealant. Care must be used to guarantee that no water flows beneath any completed sections of roof. Consult Firestones Roofing Systems standard night seal detail for method of attachment. Membrane contaminated with the sealant used as a night seal must be cut out and discarded prior to resumption of work.

VII. WALKWAYS

Consult Firestone Roofing Systems standard details.

Walkways are required at all access points to the roof system and recommended anywhere routine (routine is defined as once a month or more) traffic on the membrane surface is anticipated. Walkway pads are used to protect the weatherproofing membrane from damage or excessive wear and tear. Traffic-related roof damage is not covered by the Firestone warranty. In areas of extreme traffic, contact Firestone for options to enhance the roof system in order to prevent or mitigate traffic-related insulation damage. Walkway maintenance is the responsibility of the building owner because walkway pads are not part of the warranted waterproofing assembly.

Should access to the roofing membrane be required in order to perform warranty service to the roof system, only Firestone brand walkway pads will be moved and replaced as necessary to perform service at Firestone's expense. Pavers, walkway systems, patio surface components and other products neither manufactured nor supplied by Firestone Roofing Systems that impede roof system service must be removed and replaced at the building owner's expense.

VIII. FINISHED ROOF PROTECTION

When it becomes necessary for other trades to work over a completed area of new roof, the roofing membrane and flashing must be protected from physical damage. Proper and adequate protection includes installing a slip-sheet in the work area overlaid with plywood or OSB, in order to dissipate the effects of traffic on the finished roof surface and to prevent impact damage to the system caused by dropped tools and/or equipment. If damage does occur to the roof system, it must be repaired immediately in order to preserve the integrity of the roof system. If membrane is damaged in more than six (6) locations within a 100 ft² (9.3 m²) area, new membrane extending 6" (152.4 mm) beyond the border of the damaged areas must be installed over existing membrane in accordance with Firestone specifications. For fully adhered and mechanically attached applications, the membrane must be fully bonded to the existing underlying membrane with an approved repair method. Contact the Firestone Technical Department with any questions on how to address comprehensive damage.