FIRESTONE RUBBERGARD® EPDM METAL BUILDING RECOVER SYSTEM APPLICATION INSTRUCTIONS

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2.01 GENERAL

This section of Firestone's Technical Manual provides instructions for the installation of Firestone's RubberGard EPDM Metal Building Recover System. Reference to the Design Guide, Technical Information Sheets (T.I.S.), and other sections of Firestone's Technical Specifications is necessary to ensure that the finished roof system is installed in compliance with Firestone requirements.

NOTE: IF A PROPOSED APPLICATION FALLS OUTSIDE OF THIS SPECIFICATION, CONTACT FIRESTONE TECHNICAL SERVICES FOR ADDITIONAL INFORMATION.

2.02 JOB SITE CONSIDERATIONS (CAUTION AND WARNINGS)

Keep all adhesives, sealants and cleaning materials away from ALL ignition sources (i.e., flames, fire, sparks, etc.). Do not smoke while using these materials.

A. Consult container labels, Material Safety Data Sheets and Technical Information Sheets for specific safety instructions for all products used on the project.
B. Care must be used when installing fasteners to avoid possible conduits and other piping in and under the deck.
C. Fumes from adhesive solvents may be drawn into the building during installation through rooftop intakes. Refer to Firestone's Technical Information Sheet "Recommended Guidelines for Application of Roofing Materials to an Occupied Building".
D. Store Firestone RubberGard EPDM membrane in the original undisturbed plastic wrap in a manner to protect it from becoming damaged.
E. Do not use oil-base or bituminous-base roof cement with Firestone RubberGard EPDM membrane.
F. Insulation must be properly stored and protected from ignition sources, moisture and damage.
G. When the outside temperature is below 40 °F (4.4 °C), certain combinations of temperature and humidity may cause condensation on the surface of solvent-based adhesives and primers. If this condition occurs, discontinue the application. When the ambient air conditions no longer cause condensation on adhesive surfaces, re-apply additional adhesive or primer and proceed.
    1. The consistency of sealants, adhesives and primers will begin to thicken as the temperature drops. To minimize this, the following is recommended:
    2. Start work with sealants, adhesives and primers that have been stored between 60 °F and 80 °F (15.5 °C and 26.7 °C). Insulated heated boxes may be helpful.
    3. Complete test areas to determine if conditions will cause problems such as condensation with the application of the material.
    4. Stop the operation or change to another warm container when material becomes too thick to properly apply.
    5. Do not use heat guns or open flames to dry adhesives and primers.
    6. No-fold or single fold panels are easier to apply in cold weather and are recommended.
    7. If using Water-Based Bonding Adhesive, temperatures must be at least 40 °F (4.4 °C) and rising for the material to apply and perform as designed. Longer drying times should be expected for lower temperatures and higher humidity.

2.03 ROOF SUBSTRATE PREPARATION

A. Correct Substrate Defects:

1. Defects that need to be corrected before work can commence should be brought to the attention of the General Contractor or Owner in writing and addressed by them.
2. For re-roofing applications, remove existing roof system components as specified by the project designer. If components are discovered during installation that could be detrimental to the performance of the new roof system, they should be brought to the attention of the project designer for corrective action.
3. Good roofing practice requires a complete tear-off to the structural deck if soundness and integrity of the existing roof system cannot be verified. Recovering an existing roof system is an alternative to removing existing roof components. However, non-destructive testing, in conjunction with core cuts, must be completed to determine the condition of the existing roof system and decking.
4. The building owner or project designer is responsible for assuring that all wet insulation and/or wet substrate materials are removed in a re-roofing application. The best diagnostic technique is taking and evaluating a series of roof cuts. There are three other techniques that are currently available to make this determination by indirect means:
   These are:
   nuclear moisture detection
   infrared thermograph
   electric capacitance.
5. These techniques provide measurement of factors that can be associated with the presence of moisture, which can then be correlated to the roofing cuts to verify the results of the non-destructive testing.

B. Remove Moisture:

Ponded water, snow, frost and/or ice, present in more than trace amounts must be removed from the work surface(s) prior to installing the RubberGard EPDM Roofing System.

C. Prepare Surface:

Acceptable substrates to which the RubberGard EPDM Roofing System is installed must be properly prepared prior to membrane installation. The surface must be relatively even, clean, dry, smooth, free of sharp edges, fins, loose or foreign materials, oil, grease and other materials that may damage the membrane. Rough surfaces that could cause damage to the membrane must be overlaid with insulation.

D. Fill Voids:

All surface voids of the immediate substrate greater than 1/4” (6.35 mm) wide must be filled with insulation.

E. Install Vapor Retarder (When Specified):

Install a vapor retarder as specified by the project designer.

2.04 WOOD NAILER LOCATION AND INSTALLATION

Wood nailers must be installed at the perimeter of the building, attached to the superstructure with Firestone Purlin Fasteners and as specified by the project designer or as noted in Firestone Details and the System Design Guide. Install wood nailers as follows:

A. Position Wood Nailer:

Total wood nailer height must match the total thickness of insulation being used, and should be installed with a 1/8" (3.2 mm) gap between each length and each change of direction.

B. Secure Wood Nailer:

Wood nailers must be firmly fastened to the deck or building. Mechanically fasten wood nailers to resist a force of 200 lbf (890 N) in any direction . Refer to attachment requirements as specified by the project designer.

C. Wood Nailer:
The wood nailer must be tapered (if applicable) so that it will always be flush at the point of contact with the insulation (refer to Firestone Details).

D. Chemical Treating of Wood Nailer:
Chemical treating for fire resistance or other purposes (other than pressure treating for rot resistance, i.e. “Wolmanized” or “Osmose K-33”) may affect the performance of the Firestone RubberGard EPDM membrane and accessories. Submit MSDS sheets for any chemically treated lumber that comes in contact with the RubberGard Membrane, with active ingredients listed, to Firestone Technical Services for acceptance regarding compatibility.

E. Installation of Wood Nailers by Others:
Make these specifications and details available when nailers are to be installed by others. Work that compromises the integrity of the system may jeopardize the warranty for the entire project.

2.05 INSULATION INSTALLATION

A. Install Insulation:
Install only as much insulation as can be covered with roofing membrane and completed before the end of the day’s work or before the onset of inclement weather.

B. Fill Voids Between Standing Seams:
Areas between standing seams must be filled with Firestone ISO 95+ in order to create a solid substrate, flush with the standing seam tops, to support the top layer of insulation.

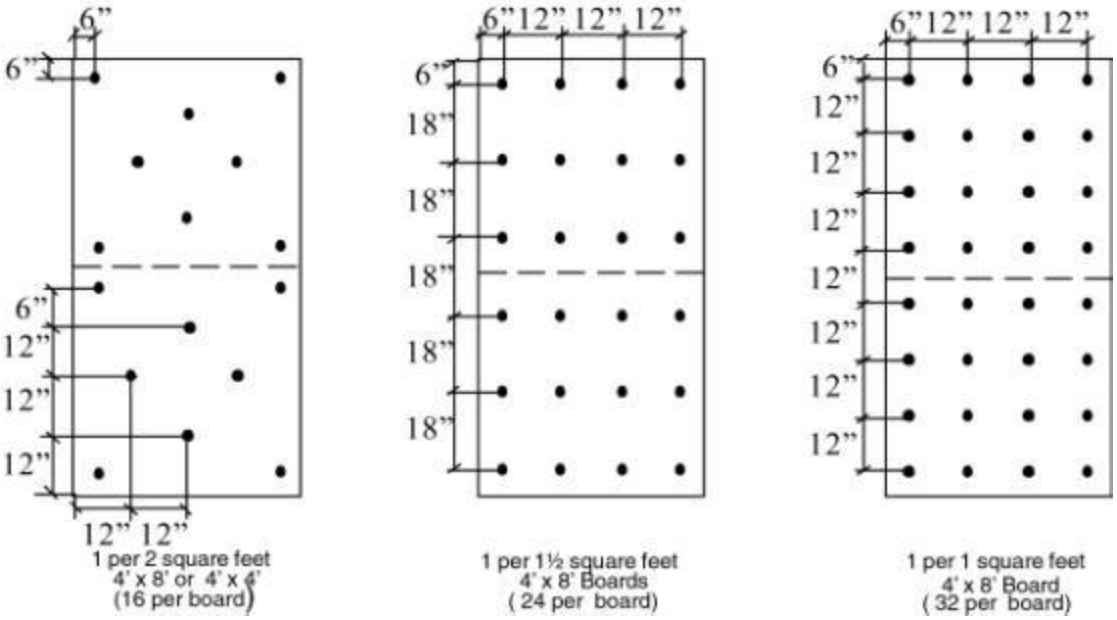
C. Fit Insulation:
Neatly fit insulation to all penetrations, projections, and nailers. Insulation should be loosely fitted, with gaps greater than 1/4" (6.3 mm) filled with acceptable insulation. Under no circumstances should the membrane be left unsupported over a space greater than 1/4" (6.3 mm). Tapered insulation with acceptable facers for bonding must be installed around roof drains so as to provide proper slope for drainage as shown in Firestone Details.

D. Stagger Insulation Joints:
When installing multiple layers of insulation, all joints between layers should be staggered but is not required for the issuance of a Firestone Warranty.

E. Insulation Attachment

1. Insulation must be installed in accordance with the fastening rate and pattern as required by Firestone.
2. Fastening patterns may vary for code compliance. Contact Firestone Technical Technical Coordinators at 1-800-428-4511 or the local code official.
3. Based on actual pullout testing, the insulation must be attached using Firestone Heavy-Duty fasteners and insulation plates as follows:
   300 LBS. OR GREATER PULLOUT
   FIELD PERIMETER CORNER
   1 PER 2 SQ. FEET 1 PER 2 SQ. FEET 1 PER 2 SQ. FEET
   250 TO 299 LBS.
   FIELD PERIMETER CORNER
   1 PER 2 SQ. FEET 1 PER 2 SQ. FEE 1 PER 1-1/2 SQ. FEET
   200 TO 249 LBS.
   FIELD PERIMETER CORNER
   1 PER 2 SQ. FEET 1 PER 1-1/2 SQ. FEET 1 PER 1 SQ. FEET

Corners and perimeter areas are defined as 40% of building eave height, or 10% of the lesser plan dimension, whichever is less.



2.06 MEMBRANE SEAMING

A. Position and Fold Back the Lap Edge:
Position the membrane at the seam area by overlapping membrane 4" (102 mm) for 3" (76 mm) QuickSeam Tape and 8" (203mm) for 7" (178 mm) QuickSeam Tape. Once the membrane is in place, mark the bottom membrane 1/2" (12.7 mm) to 3/4" (19 mm) from the edge of the top membrane every 4' (1.2 m) to 6' (1.8 m) using the marking crayon provided with the QuickSeam Tape. Tack the membrane back with Single-Ply QuickPrime Primer as necessary to hold back the membrane at the splicing area.

B. Apply Single-Ply QuickPrime Primer to Seam Area:
Remove excess amounts of dusting agent on the membrane and at factory splices using a stiff push broom. Stir Single-Ply QuickPrime Primer thoroughly before and during use. Dip the QuickScrubber into the bucket of Single-Ply QuickPrime Primer, keeping the pad flat. Apply the Single-Ply QuickPrime Primer using long back and forth type strokes with pressure along the length of the splicing area until surfaces become a dark gray in color. Apply Single-Ply QuickPrime Primer to both surfaces at the same time. Change the scrub pad every 200 feet (61 m) of seam or when the pad will no longer hold the proper amount of Single-Ply QuickPrime Primer. Additional scrubbing is required at all factory seams and at areas that may have become contaminated or have excess amounts of dusting agent.

C. Apply the QuickSeam Splice Tape:
After allowing the Single-Ply QuickPrime Primer to dry properly using the Touch-Push Test, apply the QuickSeam Seam Tape to the bottom membrane, aligning the edge of the release paper with the markings. Immediately roll the splice tape with a 3" - 4" (76 mm - 102 mm) wide silicone hand roller, a short nap 3" (76 mm) paint roller, or a clean QuickScrubber or QuickScrubber Plus pad and handle.

D. Check the Splice Tape Alignment:
When the QuickSeam Splice Tape has been installed for the entire seam length, position

the top membrane to rest on top of the tape's release paper backing. Trim the top panel as necessary to assure that 1/8" - 1/2" (3.1mm -12.7 mm) of the QuickSeam Seam Tape will be exposed on the finished seam.

E. Remove Release Paper Backing:
To remove the paper backing from the tape, roll back the EPDM membrane and peel the release paper backing off the QuickSeam Splice Tape by pulling against the weight of the bottom panel at approximately a 45° angle to the tape and parallel with the roof surface. Allow the top membrane to fall freely onto the exposed QuickSeam Splice Tape. Broom the entire length of the seam at a 45° angle as the release paper is being removed.

F. Roll the Seam:
Roll the seam using a 1-1/2" - 2" (38 mm - 51 mm) wide silicone hand roller or the Firestone QuickRoller first across the seam and then along the entire length of the seam.

G. Special Considerations (End Laps, "T" Joints, etc.):

1. End Laps:
When the seam is greater in length than the tape, the adjoining QuickSeam Splice Tape must be overlapped a minimum of 1" (25.4 mm).

2. Trim QuickSeam Splice Tape at "T" Joints:
Trim QuickSeam Splice Tape so that the edge of QuickSeam Splice Tape and the edge of the membrane are flush beneath the "T" Joint area.

3. "T" Joints:
Apply a section of Firestone QuickSeam Flashing or QuickSeam Joint Cover over the "T" joint area.

4. Using QuickSeam Splice Tape with Cured EPDM as Flashing:
If cured EPDM is used as flashing, apply an 8" (203 mm) long section of QuickSeam Flashing or a QuickSeam Joint Cover over the intersection of the flashing and field Seams.

2.07 ADDITIONAL MEMBRANE SECUREMENT AND BASE TIE-IN FLASHING

Secure the membrane (base tie-in) at all locations where the membrane goes through an angle change greater than 1" (25.4 mm) in 12" (305 mm) (i.e., roof edges, curbs, interior walls, etc.).

OPTION 1: QuickSeam Reinforced Perimeter Fastening Strip (QSRPF)

A. Attach the QSRPF Strip to the penetration, parapet wall or deck using Firestone 2" (51 mm) Seam Plates or Firestone Batten Strips fastened a maximum of 12" (305 mm) o.c.

B. Roll the membrane into place and then fold back, exposing the underside of the membrane and the QSRPF Strip. When using batten strips, apply Firestone General Purpose Sealant over each fastener head, assuring that the fastener head is completely covered.

C. Apply Single-Ply QuickPrime Primer to the membrane where it will mate with the QuickSeam Splice Tape and allow to dry. Apply Firestone Bonding Adhesive to the back half of the QSRPF, to the membrane that is to be bonded to the penetration or wall, and to the penetration or wall itself.

D. After the surfaces have dried properly as determined by using the Touch-Push Test, remove the release paper from the QuickSeam Reinforced Perimeter Fastening Strip and roll the membrane into place, assuring a tight fit into the transition between the horizontal and vertical surfaces. Continue to roll the membrane up the wall and broom in place with a stiff push broom. Roll the membrane over the QuickSeam Tape with a 1-1/2" - 2" (38 mm x 51 mm) wide silicone roller or the Firestone QuickRoller across the tape and then along its length.

E. Complete vertical laps seams as described in the lap splice section of this specification. Install a T-Joint Cover over any vertical lap splices that go through an angle change (Refer to Firestone Details).

OPTION 2: Reinforced Perimeter Fastening Strip (RPF) (For use with warranted systems up to 15 years only)

A. Attach the RPF Strip to the penetration, parapet wall or deck using Firestone 2" (51 mm) Seam Plates or Batten Strips fastened a maximum of 12" (305 mm) o.c. Roll the membrane into place and then fold back, exposing the underside of the membrane and the RPF Strip. When using batten strips, apply Firestone General Purpose Sealant over each fastener head, assuring that the fastener head is completely covered.
B. Clean the membrane and the RPF Strip using Firestone Splice Wash or Single-Ply QuickPrime Primer and allow to dry. Apply SA-1065 Splice Adhesive to the membrane and to the RPF Strip and apply Firestone Bonding Adhesive to the remainder of the membrane and to the substrate.
C. After the surfaces have dried properly as determined by using the Touch-Push Test, roll the membrane into place, assuring a tight fit into the transition point. Continue to roll the membrane up the wall and broom in place with a stiff push broom.
D. Roll the membrane over the Reinforced Perimeter Fastening Strip using a 1-1/2" - 2" (38 mm - 51 mm) wide silicone roller or the Firestone QuickRoller first across and then along its length.
E. Complete vertical lap seams as described in the lap splice section of this specification.
F. Install a T-Joint Cover over all vertical lap seams that go through an angle change (Refer to Firestone Details).

OPTION 3: Firestone Batten Strip

A. Install the RubberGard Membrane per Firestone details and attach to the vertical substrate using Firestone Batten Strips at a maximum of 12" (305 mm) o.c. (Polymer Battens may only be used over wood or metal substrates).
B. Apply Firestone AP Sealant over each fastener head, assuring that the fastener head is completely covered.
C. Cut a piece of flashing from RubberGard Membrane large enough to completely cover the substrate and extend onto the roof membrane a minimum of 3" (76 mm).
D. Complete the splice between flashing and the main roof membrane using QuickSeam Splice Tape before adhering flashing to the vertical surface.
E. Provide lap seams in accordance with Firestone Details.
F. Apply bonding adhesive at about the same time to both the flashing and the surface to which it is being bonded so as to allow approximately the same flash-off time.
G. Apply bonding adhesive evenly to avoid globs. After the bonding adhesive has dried properly as determined by the Touch-Push Test, roll the flashing into the adhesive evenly and carefully so as to minimize wrinkles.
H. Broom the flashing to the substrate with a stiff push broom to assure proper contact.

2.08 FLASHING INSTALLATION AND SEAMING USING SA-1065 ADHESIVE

When Option #3 above is allowed, seams are typically completed using Firestone QuickSeam Splice Tape (**REPAIRS ONLY**). Where splice adhesive is allowed by Firestone details, use the following procedure for completing the flashing and seams:

A. Attach membrane at the curb in according to Firestone Details.
B. Cut a section of membrane equal in length to the perimeter of the curb plus 3" (76 mm) (example: A 4'x 4' (1.2 m x 1.2 m) curb would require a 16'-3" (4.98 m) length of membrane). Note: The additional 3" (76 mm) of material is not required if the flashing is butted at the final corner in lieu of a 3" (76 mm) lap seam.
C. Cut the width of the membrane equal to the height of the curb plus a base lap of 3"

(76 mm) and 2” (51 mm) to go over the top of the curb.

D. Place the membrane on a flat surface in close proximity to the curb.

E. Clean the flashing and roof membrane area to be seamed using clean cotton cloths with Firestone Splice Wash to remove all dusting agent, dirt, and other contaminants that will affect the finished seam and allow to dry. Additional cleaning may be required to assure that the membrane is completely cleaned. Additional cleaning at factory seams is required to remove accumulations of dusting agent. Cotton cloths must be discarded as they become dirty and replaced with clean ones to assure proper cleaning. Proper cleaning has been achieved when the membrane surface is dark gray in color and no streaking is evident. FormFlash does not require cleaning unless it has been contaminated.

   As an option, Single-Ply QuickPrime Primer may be used in lieu of the cleaning procedure described above. Refer to the QuickSeam Splice Tape Section of this specification and Firestone’s Technical Information Sheet for proper application techniques of Single-Ply QuickPrime Primer.

DO NOT USE CIRULAR MOTIONS FOR APPLYING SPLICE ADHESIVE. DO NOT USE PAINT ROLLERS , SPRAY EQUIPMENT, OR MECHANICAL EQUIPMENT FOR THE APPLICATION OF SPLICE ADHESIVE. DO NOT USE LONG HANDLES ON SPLICE ADHESIVE BRUSHES TO APPLY SPLICE ADHESIVE.

F. Apply Firestone Bonding Adhesive (BA-2004 or Water Based Bonding Adhesive) to the curb and to the flashing membrane. Do not apply bonding adhesive to the area of the flashing that has been cleaned in Step #E. While the bonding adhesive is drying, apply Firestone SA-1065 Splice Adhesive to the flashing membrane and roof membrane. Thoroughly stir Firestone’s Splice Adhesive before and during use. Apply the Splice Adhesive using a Firestone Splice Adhesive Brush or a 3" - 4" (76 mm - 101 mm) wide1/2" (12.7mm) thick, solvent-resistant paint brush in a smooth, even coat with long brush strokes, such that brush marks bleed out, yielding a smooth, glossy adhesive surface. Apply Splice Adhesive to both mating surfaces at about the same time.

G. Test the bonding adhesive and splice adhesive for readiness by using the Touch-Push Test. Touch the adhesive surface in the thickest area with a clean dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, push forward on the adhesive at an angle to assure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, the adhesive is not ready for mating. Flash-off time will vary depending on ambient conditions.

H. After the bonding and splice adhesives have dried properly, mate the flashing to the curb (use 2-3 people depending on the size of the curb involved). This is accomplished by folding the splice area back on itself, picking up the flashing, and wrapping the entire curb leaving the seam area folded upwards. The flashing membrane is now bonded to the curb only.

I. To complete the splice between the flashing and roof membrane, cut the flashing membrane down to each corner of the curb. Work the flashing membrane into the angle change as tightly as possible, then allow the remainder of the flashing membrane to fall into place.

J. Roll the splice with a 1-1/2" (38 mm) silicone coated steel roller or the Firestone QuickRoller in both directions along the splice edge. Broom the membrane over the curb to assure proper mating of the bonding adhesive.

K. Apply 9" (228 mm) QuickSeam Corner Flashing or 9" (228 mm) QuickSeam Flashing at all corners per Firestone current requirements, including Seam Edge Treatment.

L. Wait a minimum of 4 hours after the completion of a seam to apply Seam Edge Treatment (Splice Adhesive and Lap Sealant) unless weather is threatening. If weather is threatening, Seam Edge Treatment must be applied before leaving the project. When weather is not threatening, Seam Edge Treatment must be applied no later than the end.

2.09 SEAM EDGE TREATMENT

(REQUIRED WHEN USING SPLICE ADHESIVE, WHERE SHOWN ON FIRESTONE DETAILS, AND AT CUT EDGES OF RUBBERGARD MAX MEMBRANE or RUBBERGARD MAX FR)

A. Apply Splice Adhesive to Seam Edge:
Using a Splice Adhesive brush, apply SA-1065 Splice Adhesive a minimum of1"(25.4mm) on either side of the seam edge. Allow the Splice Adhesive to dry. If the seam edge has become contaminated, it will be necessary to clean the edge with Firestone Splice Wash prior to applying the adhesive.

B. Apply the Lap Sealant to Seam Edge:
Apply a continuous bead of Lap Sealant, approximately 3/8" x 1/4" (9.5 mm x 6.35 mm) 20-22 lineal feet (6 m - 6.7 m) per 10 oz. (295 cc) tube centered over the seam edge using a standard caulking nozzle. Using the Firestone supplied Lap Sealant tool, feather the Lap Sealant immediately, taking care to leave a mound of sealant directly over the seam edge (refer to lap splice details). Alternately, Lap Sealant may be applied using the plastic nozzle applicator supplied by Firestone, assuring the applicator is centered at the seam edge.

2.10 FLASHING - PENETRATIONS

A. General:
1. Remove all loose existing flashing (i.e., lead, bituminous materials, mastic, etc.).
2. Flash all penetrations passing through the membrane.

B. The flashing seal must be made directly to the penetration. Pipes, Round Supports, Structural Steel Tubing, etc.:
1. Flash penetrations with Firestone EPDM Pre-Molded Pipe Flashings wherever possible. Do not cut or patch EPDM Pre-Molded Pipe Flashings to assist in their installation.
2. Flash penetrations using FormFlash when the use of Pre-Molded EPDM Pipe Flashings is not possible.
3. Refer to Firestone's Technical Information Sheet for minimum and maximum pipe diameters that can be successfully flashed with Pre-Molded EPDM Pipe Flashings, Structural Steel Tubing: Use a field-fabricated pipe flashing detail when the corner radius is greater than 1/4" (6.35 mm) and the longest side of the tube does not exceed12" (305 mm). When the tube exceeds 12" (305 mm) use a standard curb detail including base tie-in and suitable termination.

C. Roof Drains:
These specifications apply for installation of cast iron drains only. For all other drain types contact Firestone Technical Services.
1. Remove existing clamping ring. Remove any broken clamping hardware and replace.
2. Remove all existing flashing (including lead flashing), roofing materials and cement from the existing drain in preparation for membrane and Water Block Seal.
3. Provide a clean even finish on the mating surfaces between the clamping ring and the drain bowl. Install tapered insulation with suitable bonding surfaces around the drain to provide a smooth transition from the roof surface to the drain. Slope into drain cannot be greater than 1" in 12" (25.4 mm in 305 mm).
4. Position the membrane and cut a hole for the roof drain allowing a 1/2" (12.7 mm) to 3/4" (19.1 mm) of membrane inside the clamping ring.
5. Make round holes in the membrane to align with clamping bolts (a paper punch may be used). Do not cut the membrane back to the bolt holes.
6. Install Firestone Water Block Seal on the clamping ring seat flange below the membrane. Use a minimum of one half of a 10 oz. (295 cc) tube for a 10" (254 mm)

drain.

7. Install the roof drain clamping ring and all clamping bolts. Tighten the clamping bolts to achieve constant compression.

D. Pipe Clusters and Unusual Shaped Penetrations:

1. Fabricate penetration pockets to allow a minimum clearance of 1" (25.4 mm) between the penetration(s) and all sides.
2. Secure penetration pockets and flash per Firestone Details.
3. Fill penetration pockets with Firestone Pourable Sealer and mound to shed water. Pourable Sealer must be a minimum of 2" (51 mm) deep and 1" (25.4 mm) thick around the penetrations.

E. Hot Pipes:

Protect the RubberGard EPDM components from direct contact with steam or heat sources when the in-service temperature is in excess of 140° F (60° C). In all such cases flash to an intermediate “cool” sleeve.

F. Flexible Penetrations

Provide a weathertight gooseneck set in Water Block Seal and secured to the deck. Flash in accordance with Firestone Details.

G. Scuppers:

1. Provide and install a new welded watertight sleeve.
2. Set welded watertight scupper in Water Block Seal and secure scupper to the structure.
3. Flash in accordance with Firestone Details.

H. Expansion Joints:

Install where specified by the project designer. Install expansion joints in accordance with Firestone details.

2.11 FLASHING - WALLS, PARAPETS, MECHANICAL EQUIPMENT CURBS, ETC.

A. General:

Using the largest pieces of continuous RubberGard EPDM membrane practical, flash all walls, parapets, curbs, etc., to the height as specified by the project designer.

B. Evaluate Substrate:

See chart in the System Design Guide section of this manual.

C. Install Additional Membrane Securement at Curbs, Penetrations, Walls, etc.:

Refer to Section 2.11.1 of this specification.

D. Provide Termination:

Provide termination directly to the vertical substrate as shown in Firestone Details.

E. Provide Intermediate Attachment:

Intermediate attachment of membrane is required at 36" (914 mm) intervals in accordance with Firestone Details unless:

1. The wall surface is smooth without noticeable high spots or depressions (i.e., plywood, poured or precast concrete, or hollow core block or masonry walls where joints are flush with masonry surface),

AND

2. The termination is either a Termination Bar or membrane has been installed underneath a coping to the outside edge of the wall.

2.12 FLASHING - GRAVEL STOPS OR ROOF EDGE METALS

A. Flash Gravel Stops or Roof Edge Metals using Firestone QuickSeam Flashing:

1. Clean the Membrane and Metal Edge:

Remove excess amounts of dusting agent by brooming. Apply Single-Ply QuickPrime Primer to the metal edging and membrane as described in Firestone Specifications. Allow the Single-Ply QuickPrime Primer to flash-off.

B. Apply QuickSeam Flashing:

Place the roll of QuickSeam Flashing on the roof a few feet ahead of the application starting point, positioned so that it unrolls from the top of the roll (release paper will be on top). Remove approximately 2' - 3' (.6 m - .9 m) of release paper and apply to the metal flange and RubberGard Membrane. Lap adjacent rolls of QuickSeam Flashing a minimum of 1" (25.4 mm).

C. Roll the QuickSeam Flashing:

With a 1-1/2" - 2" (38 mm - 51 mm) wide silicone hand roller, roll the QuickSeam Flashing to assure proper adhesion. Additional attention must be given to factory seam intersections and to any change in plane.

D. Special Considerations (End Laps, "T" Joints, etc.):

1. Apply 6" (152.4 mm) length of QuickSeam Flashing, a QuickSeam Joint Cover or 6" x 6" (152.4 mm x 152.4 mm) FormFlash to the inside edge of the QuickSeam Flashing at all overlaps (Refer to Details).
2. Apply 6" (152.4 mm) length of QuickSeam Flashing, a QuickSeam Joint Cover or 6"x 6" (152.4 mm x 152.4 mm) FormFlash at all intersections between the QuickSeam Flashing and field-fabricated seams (Refer to Details).
3. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, an additional piece of QuickSeam Flashing must be applied over the metal lap to the top of the gravel stop, after the initial application of QuickSeam Flashing. Seam Edge Treatment shall be applied at the intersections of the two flashing sections.

E. Optimal Application:

1. The optimal use of QuickSeam Flashing is where a 3" (76 mm) metal flange is being used. This will provide the minimum 2" (51 mm) seam to the RubberGard Membrane, with the remaining 3" (76 mm) of the material completely covering the metal flange.
2. If a flange wider than 3" (76 mm) is used, the joints of the sheet metal edge must be flashed using QuickSeam Flashing and Single-Ply QuickPrime Primer. In addition, it is recommended that 3" (76 mm) QuickSeam Splice Tape be placed in the sheet metal laps to help seal the metal edge.

F. Special Considerations for Copper Edging:

Copper may be weathered or coated with an anti-tarnish lacquer which makes adhesion difficult. Therefore, cleaning techniques must be used to prepare the copper surface to receive the QuickSeam Flashing. Firestone requires that the copper be scrubbed with acetone or lacquer thinner, using clean cotton cloths. Cleaning before installation is recommended, however, cleaning can take place after metal is attached if care is taken not to allow the solvents to come into contact with the membrane. After the cleaner dries, apply Single-Ply QuickPrime Primer and QuickSeam Flashing per Firestone Specifications.

2.13 MEMBRANE REPAIR

A. Repair Cuts/Punctures in the Membrane, or Wrinkles Within 18" (458 mm) of a Seam:

1. A wrinkle running toward a seam or within 18" (458 mm) of a seam must be repaired. The wrinkle must be cut out so that the membrane lays flat, and patched with a piece of EPDM membrane having no factory seams that extends a minimum of 3" (76 mm) beyond the boundaries of the cut in all directions. If the wrinkle occurs through QuickSeam Flashing or QuickSeam FormFlash, then like material must be used for repair however, QuickSeam Flashing or QuickSeam FormFlash may not extend onto the roof surface more than 6" (152 mm).

   If repairing of the same wrinkle must continue, then EPDM membrane must be used.

Install the EPDM repair membrane first, and round all corners of the repair piece.

QUICKSEAM FLASHING OR QUICKSEAM FORMFLASH CANNOT BE USED TO REPAIR CURED MEMBRANE.

. Repair a cut or puncture in the EPDM membrane with EPDM membrane. The repair must extend a minimum of 3" (76 mm) beyond the boundary of the affected area in all directions. Round all corners of the repair piece (Example: a pinhole will require a minimum 6"x 6" (152 mm x 152 mm) EPDM section).

B. Clean the Membrane:
When repairing membrane which has been in service for some time, it is necessary to remove accumulated dirt. Proper membrane preparation is made by scrubbing the membrane with a scrub brush and warm soapy water, rinsing with clear water and dry with clean cotton cloths. Clean the area using clean cotton cloths with Firestone SpliceWash. Additional cleaning using Firestone Splice Wash is often necessary.

C. Install Repair Material:
Repairs must be made with SA-1065 Splice Adhesive. Refer to the Flashing Seam Details of this manual for application requirements of Splice Adhesive.

2.14 TEMPORARY CLOSURE

A. Temporary closures which assure that moisture does not damage any completed section of the new roofing system are the responsibility of the licensed applicator. This is not warranted by any Firestone warranty. Completion of flashings, terminations and temporary closures must be completed as required to provide a watertight condition.
B. See the V-Force Membrane Technical Information Sheet for more information.

2.15 ACRYLITOP PC-100 COATING

AcryliTop PC-100 can be applied to the RubberGard membrane or flashing to offer a reflective surface, and add to its service life. In addition, AcryliTop PC-100 can be applied to existing RubberGard EPDM roofs under warranty helping extend the membrane life. Should the coating of an existing roof be considered, the roof system should first be inspected by a Firestone licensed contractor to assure that the system itself is not in need of repair prior to applying AcryliTop PC-100.Refer to the Technical Information Sheet and Material Safety Data Sheets for AcryliTopPC-100 and Membrane PreWash for additional information on application, storage and safety.

A. Clean membrane surface:
Before applying the AcryliTop PC-100, the RubberGard membrane must be cleaned using Firestone's Membrane PreWash. Clean the roof of debris, as needed, with a broom or leaf air blower. Remove any leaves or large pieces of debris, such as stones, branches, etc. Apply Membrane PreWash at a rate of 300-500 square feet of membrane surface using a 2-3 gallon agricultural tank sprayer and allow to dry for 5-10 minutes (application rates may vary depending on the cleanliness of the membrane). Assure that tank sprayer has a pressure relief valve. Do not allow PreWash to come in contact with other surfaces. Using a 3000-4000 psi pressure washer that provides a minimum 4 gallons per minute, remove the PreWash working first away from the drains or gutters, then back towards them. A 40° fan spray nozzle for pressure washing should be used. Should deposits of dirt and dusting agent remain, additional cleaning with the pressure washer is required. (Caution: Do not allow the spray wand to be closer than 12 inches from the membrane to prevent damage).

B. Apply AcryliTop PC-100 Base Coat (Only required when using a roller application):
After the membrane has dried, apply Firestone AcryliTop PC-100 Base Coat at a rate of approximately 200 square feet per gallon using a 3/8" nap paint roller. At this rate,

membrane may be slightly visible through the base coat. Allow Base Coat to dry thoroughly before applying the AcryliTop PC-100 top coat.

C. Apply AcryliTop PC-100:

1. Roller Application:

Using a 3/8" nap paint roller, apply the AcryliTop PC-100 coating a 90° angle to the AcryliTop PC-100 Base Coat at a rate of approximately 200 square feet per gallon or as necessary to assure complete coverage of the AcryliTop PC-100 Base Coat. The finished dry mil thickness shall be a minimum of 10 mils total.

2. Sprayer Application:

Over the properly cleaned membrane, apply AcryliTop PC-100 at a rate of approximately 100 square feet per gallon, resulting in a minimum 10 mil dry film thickness. The sprayer used for application of the AcryliTop PC-100 shall be a 30:1 ratio pump using a pressure of 90-100 psi at a rate of 125 cubic feet per minute.

2.16 ROOF WALKWAYS

A. Lay Out Firestone RubberGard QuickSeam Walkway Pads:

1. Install walkway pads in locations as specified by the project designer and in accordance with the System Design Guide Section of this Manual. Layout Firestone RubberGard QuickSeam Walkway Pads so that the flat surface is over the completed RubberGard QuickSeam Membrane, spacing each pad a minimum of 1" (25.4 mm)and a maximum of 3" (76 mm) from each other to allow for drainage.
2. If Firestone RubberGard Walkway Pads must be installed over field-fabricated seams or within 6" (152 mm) of a seam edge, install QuickSeam Flashing over the seam edge. The QuickSeam Flashing must extend beyond the walkway pad a minimum of6" (152 mm) on either side.

B. Attach Firestone RubberGard QuickSeam Walkway Pads to the Membrane:

1. Clean the Membrane:

Clean the membrane using Firestone Single-Ply QuickPrime Primer where the QuickSeam Splice
Tape will contact the membrane.

2. Place Walkpad:

Remove the release paper from the QuickSeam Splice Tape. Turn the walkpad over and place it in the Single-Ply QuickPrime Primer.

3. Apply Pressure:

Walk on the pad to press in place assuring proper adhesion.

2.17 SHEET METAL WORK

A. For specific installation instructions for Firestone Sheet Metal, refer to the System Design Guide and Technical Information Section of this manual.
B. For sheet metal work not supplied by Firestone, refer to fabrication and installation requirements specified by the project designer as well as industry standards.

END OF SECTION