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2.01.1 INTRODUCTION

The UltraBlend™ system consists of an UltraPly™ TPO membrane, in the field, with the option of either RubberGard™ EPDM (walls only) or RubberGuard EcoWhite™ EPDM (wall and curb) flashings. RubberGard EcoWhite QuickSeam™ products and accessories can be used to complete all other roofing details and flashings.

This document provides instructions for the installation of the Firestone UltraBlend™ system. Reference the UltraPly™ TPO Application and Attachment guides for UltraPly™ TPO field membrane layout and attachment. To be eligible for a Red Shield Warranty, the UltraBlend™ system must be installed in accordance with all relevant Firestone standards and details, as found in the Firestone Technical Database at http://technicaldatabase.fsbp.com/.

2.02.1 MEMBRANE SEAMING (EPDM TO TPO)

A. SEAMING PROCEDURES

1. Position and Fold Back the Lap Edge:

   a) Position the membrane at the seam area by overlapping the membrane 4" (102 mm) for the 3" (76mm) EcoWhite EPDM QuickSeam Tape. Once the membrane is in place, mark the bottom membrane 1/2" (13 mm) to 3/4" (19 mm) from the edge of the top membrane every 4' (1.2 m) to 6' (1.8 m).

   b) Tack the membrane back with Single-Ply QuickPrime Primer as necessary to hold back the membrane at the splicing area.

2. Apply Firestone Single-Ply QuickPrime Primer to Seam Area:

   a) Remove excess amounts of dusting agent on the membrane and at factory splices using a stiff push broom. In the case of adhered systems make sure there is no contamination of bonding adhesive in the tape area.

   b) Stir Single-Ply QuickPrime Primer thoroughly before and frequently during use. Dip the QuickScrubber or QuickScrubber Plus into the bucket of Single-Ply QuickPrime Primer, keeping the pad flat.

   c) Apply the Single-Ply QuickPrime Primer uniformly; at least 1” wider than EcoWhite QuickSeam Tape application area, using long back and forth type strokes with pressure along the length of the splicing area until surfaces become yellow in color. Do not overwork the Single-Ply QuickPrime Primer.

   d) Apply Single-Ply QuickPrime Primer to both sheet surfaces alternating between sheets while working down the seam area.

      1) Change the QuickScrubber Plus pad when the pad will no longer hold the proper amount of Single-Ply QuickPrime Primer.
e) Additional scrubbing is required at all factory seams and at areas that may have become contaminated or have excess amounts of dusting agent in the creases. Allow QuickPrime to dry.

f) Check using the Touch-Push test.

3. Apply the EcoWhite EPDM QuickSeam Splice Tape:

   a) Allow the Single-Ply QuickPrime Primer to dry properly using the Touch-Push Test.

   1. Apply the EcoWhite EPDM QuickSeam Splice Tape with the Firestone QuickTaper to the bottom membrane, aligning the edge of the release paper with the markings.

   b) Immediately roll the splice tape with a 3” to 4” (76 mm to 102 mm) wide silicone hand roller, a short nap 3” (76 mm) paint roller, or a clean QuickScrubber or QuickScrubber Plus pad and handle.

4. Position the membranes, check the Splice Tape Alignment:

   a) Place the top membrane to rest on bottom membrane with the tape’s release backing still in place.

   b) Trim the top panel as necessary to assure that 1/8” to 1/2” (3 mm to 13 mm) of the EcoWhite QuickSeam Seam Tape will be exposed on the finished seam. Confirm the tape will be in full contact with Single-Ply QuickPrime Primer treated membrane.

5. Remove Release Backing:

   a) Allow the top membrane to fall freely onto the bottom membrane prior to removal of the release backing.

   b) Start to peel the release backing off the EcoWhite QuickSeam Splice Tape by pulling against the weight of the panel at approximately a 45° angle to the tape and parallel with the roof surface.

   c) Broom the entire length of the seam at a 45° angle as the release paper is being removed.

6. Roll the Seam

   a) Roll the seam as appropriate, using the Firestone QuickRoller and 2’-3’ strokes working from one side of the seam to the other along the seam length, or a 1-1/2” to 2” (38 mm - 51 mm) wide silicone hand roller, first across the width of the seam and then along the entire length and width of the seam.

7. 6” EcoWhite cover strip (only required for RubberGard™ to UltraPly™ TPO transition)

   a) Clean the Lap Edge: Clean the seam edge a minimum of 3” (76 mm) on each side of the lap using Firestone.
Single-Ply QuickPrime Primer applied with QuickScrubber or QuickScrubber Plus and pads.

b) Apply Firestone 6” EcoWhite QuickSeam Flashing: Place the roll of QuickSeam Flashing a few feet ahead of the application starting point. Situate the roll so that it unrolls from the top of the roll, with the release paper will be on top. Peel the release paper up and back from the QuickSeam Flashing. The QuickSeam Flashing should then be turned under and starting 3” (76 mm) ahead of the splice, press down. Take care to avoid wrinkles. Do not stretch the QuickSeam Flashing during installation. Lap adjoining rolls of QuickSeam Flashing a minimum of 4” (102 mm).

c) Roll the QuickSeam Flashing: Roll the flashing using a 1-1/2” to 2” (38 mm - 51 mm) wide silicone hand roller or the Firestone QuickRoller, first across the width of the flashing and then along the entire length of the flashing.

8. Special Considerations (Factory laps, End Laps, “T” Joints, transition patches, and others.)

a) End Laps of splice tape - When the seam is greater in length than the tape, the adjoining QuickSeam Splice Tape must be overlapped a minimum of 1” (25 mm) and detailed per UB-LS-1. Trim QuickSeam Splice Tape at “T” Joints so that the edge of QuickSeam Splice Tape and the edge of the membrane are flush to the “T” joint area.

b) “T” Joints - Apply a section of Firestone EcoWhite QuickSeam Flashing or EcoWhite QuickSeam Joint Cover over the “T” joint area per details UB-LS-3 and UB-LS-4.

B. FLASHING SPLICES USING ECOWHITE SPLICE ADHESIVE

Where splice adhesive is allowed by Firestone Details, use the following procedure for completing the seams:

1. Clean the flashing and roof membrane area to be seamed using clean natural fiber cloths with Firestone Splice Wash to remove all dusting agent, dirt, and other contaminants that will affect the finished seam and allow drying. Additional cleaning may
be required to ensure that the membrane is completely cleaned. Cleaning at factory seams is required to remove accumulations of dusting agent. Natural fiber 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 white in color and no streaking is evident.

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

3. Thoroughly stir Firestone EcoWhite Splice Adhesive before and during use. Apply the Splice Adhesive using a Firestone Splice Adhesive Brush or a 3" to 4" (76 mm to 101 mm) wide 1/2" (13 mm) 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.

4. Test the 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 ensure 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.

5. After the splice adhesive has dried properly, mate the flashing to the curb

6. 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, and then allow the remainder of the flashing membrane to fall into place.

7. Roll the splice with a 1-1/2" to 2" (38 mm to 51 mm) silicone roller in both directions along the splice edge. Broom the membrane over the curb to assure proper mating of the bonding adhesive.

2.03.1 FLASHING – PENETRATIONS

A. GENERAL:

1. Remove all loose existing flashing (i.e. metal, bituminous materials, mastic, etc.).

2. Flash all penetrations passing through the membrane.

3. The flashing seal must be made directly to the penetration.

B. PIPES, ROUND SUPPORTS, STRUCTURAL STEEL TUBING, ETC.:

1. Flash penetrations with Firestone EcoWhite QuickSeam Pipe Flashing. Do not cut or patch EcoWhite QuickSeam Pipe Flashings to assist in their installation except where noted on instructions.
2. Flash penetrations using EcoWhite FormFlash when the use of EcoWhite Pipe Flashings is not possible.

3. Refer to the Firestone Technical Information Sheets for minimum and maximum pipe diameters that can be successfully flashed with Pre-Molded EcoWhite EPDM Pipe Flashings.

4. Structural Steel Tubing: Use a field-fabricated pipe flashing detail when the corner radius is greater than 1/4” (6 mm) and the longest side of the tube does not exceed 4” (102 mm). When the tube exceeds 4” (102 mm), use a standard curb detail including base-tie in and suitable termination.

C. ROOF DRAINS:

The following applies for installation of cast iron drains only. For all other drain types contact your regional Technical Coordinator.

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.

4. Install insulation, flat and tapered, 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”:12” for standard membrane.

5. Position the membrane and cut a hole for the roof drain allowing a 1/2” (13 mm) to 3/4” (19 mm) of membrane inside the clamping ring. 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. 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. INSERT DRAINS

Firestone Drain Inserts, 3”, 4” or 6”, are intended for installation when existing drains are deteriorated and not suitable for reuse. For other conditions outside of these, contact Firestone Technical Services.

1. Remove existing clamping ring. Remove any broken clamping hardware and debris.

2. Install wood blocking as required to support, level and square drain with new insulation sump.
3. Install Firestone Drain Inserts, securing to a solid substrate in accordance with instructions, in preparation to receive the roof membrane.

4. Install insulation, flat and tapered, 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":12" for standard membrane.

5. Position the membrane and cut a hole for the roof drain allowing a 1/2" (13 mm) to 3/4" (19 mm) of membrane inside the clamping ring. 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. tube for a 10" (254 mm) strainer basket/clamping ring.

7. Install Firestone roof membrane as prescribed and secure with strainer basket and bolt assembly.

E. PIPE CLUSTERS AND UNUSUAL SHAPED PENETRATIONS:

1. Install Firestone molded EcoWhite Penetration Pockets per instructions. Allow a minimum clearance of 1" (25 mm) between the penetration(s) and all sides of the Penetration Pocket.

2. Flash detail with shop made penetration pockets to allow a minimum clearance of 1" (25 mm) between the penetration(s) and all sides.

3. Secure penetration pockets and flash per Firestone Details.

4. 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 mm) thick around the penetrations.

F. HOT PIPES:

1. Protect the Firestone EcoWhite EPDM components from direct contact with steam or heat sources when the in-service temperature is in excess of 160 °F (70 °C). In all such cases flash to an intermediate “cool” sleeve with hood. See penetration details.

G. FLEXIBLE PENETRATIONS

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

H. 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.

I. EXPANSION JOINTS:

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

2. Ensure joints are sized to accommodate all anticipated movements and make logical transitions to other joint materials at roof perimeter.

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

A. GENERAL:

1. Using the largest pieces of EcoWhite QuickSeam Flashing or EcoWhite EPDM membrane practical, flash all walls, parapets, curbs, etc., to the height as specified by the project designer.

B. EVALUATE SUBSTRATE:

1. The following substrates require an overlay of ½” (13 mm) Dens-Deck Prime®, ½”(13 mm) Dens-Deck® or 5/8” (16 mm) exterior grade or “Wolmanized” plywood mechanically fastened in accordance with project designer’s requirements.
   a) DensGlass Gold®
   b) Interior Gypsum board
   c) Stucco
   d) Cobblestone
   e) Textured masonry
   f) Corrugated metal panels
   g) Other uneven substrates
   h) All loose existing flashing must be removed.

2. Install Membrane Securement at Curbs, Penetrations and Walls.

3. Provide Termination:
   Provide termination directly to the vertical substrate as shown in Firestone Details where indicated.

4. Provide Intermediate Attachment:
   a) Intermediate attachment of membrane is required at 36” (914 mm) intervals in accordance with Firestone Details unless:

2.06.1 EDGE METAL SYSTEMS
Refer to the technical database documents for total warranty roof systems of roof edge details.

A. FIRESTONE FASCIA AND COPING
1. Ensure membrane roof system extends enough to terminate per Firestone details at
top edge condition.

2. Install prefabricated Firestone perimeter metal edge treatment per instructions and
details.

B. GRAVEL STOPS OR ROOF EDGE METALS

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.

2. Apply EcoWhite QuickSeam Flashing: Place the roll of EcoWhite 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’ to 3’ (600
mm to 900 mm) of release paper and apply to the metal flange and EcoWhite
RubberGard Membrane. Lap adjacent rolls of EcoWhite QuickSeam Flashing a
minimum of 1” (25 mm). Refer to Roof Edge Details.

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

4. Special Considerations (End Laps, “T” Joints, etc.):

   a) Apply 6" (152 mm) length of EcoWhite QuickSeam Flashing, a EcoWhite
   QuickSeam Joint Cover or EcoWhite 6" x 6" (153 mm x 153 mm) Flashing to the
   inside edge of the EcoWhite QuickSeam Flashing at all overlaps. Refer to Roof
   Edge Details.

   b) If the roof edge includes a gravel stop and sealant is not applied between the
   laps in the metal edging, an additional piece of EcoWhite QuickSeam Flashing must
   be applied over the metal lap to the top of the gravel stop, after the initial application
   of EcoWhite QuickSeam Flashing. Seam Edge Treatment shall be applied at the
   intersections of the two flashing sections.

C. OPTIMAL APPLICATION:

1. The optimal use of EcoWhite QuickSeam Flashing is where a 3" (76 mm) edge metal
flange is being used. This will provide the minimum 3" (51 mm) seam to the EcoWhite
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 EcoWhite QuickSeam Flashing and Single-Ply QuickPrime Primer, after
the primary flashing is complete. 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.
Refer to Roof Edge Details.
2.06.1 MEMBRANE REPAIRS

1. Repair punctures/cuts/damage to membrane MUST be repaired with like material. The repair material for TPO shall be **heat welded** to existing membrane and extend 2” (51 mm) minimum past the damaged area in all directions. Round all corners of the repair piece. Example: A pinhole will require a minimum 4” X 4” (102 mm X 102 mm) patch. Repairs to the RubberGard MUST be repaired with like material. The repair material must be adhered properly to existing membrane/flashing and extend 3” minimum past the damaged area in all areas.

2. Clean the membrane: When making a repair to any membrane that has been in service for some time, it is necessary to remove accumulated field dirt. Scrub the membrane with a scrub brush and warm soapy water, followed by rinsing with clear water and wipe with clean cotton rags. For membrane with significant accumulation of dirt, cleaning with acetone and clean cotton cloths may be required. Firestone SW-100 may then be used.

3. Install splice per splicing procedures.

2.07.1 CLEAN UP

1. If cleaning is required, the membrane may be cleaned by gently scrubbing with soapy non-abrasive soap and water followed by rinsing the area completely with clean water. Firestone SW-100 Splice Wash may also be used sparingly with clean cotton cloths to clean the membrane.

End of Section