Warranty Repair Guide

RubberGard™ EPDM
RubberGard EPDM SA
RubberGard EcoWhite™ EPDM
UltraPly™ TPO
UltraPly TPO SA
Elevate MAX PVC
Elevate PVC and PVC KEE
Asphalt (SBS/APP)

July 2025

NOTE: The contents of this guide are considered accurate at time of posting. All information contained within should be validated for accuracy as it relates to specific project conditions or requirement. Specific codes, uplifts or other factors may result in changes to the information contained within this document. Validate all specific conditions with a Elevate Regional Technical Coordinator prior to its use.

Table of Contents

Roof Repair and Renovation 3

RubberGard EPDM Membrane Repair 3

RubberGard EPDM SA Membrane Repair 3

Using RubberGard EPDM SA to Repair Existing EPDM Membrane 5

RubberGard EcoWhite EPDM Membrane Repair 6

Thermoplastic Membrane Repair 6

Thermoplastic InvisiWeld Applied Membrane Repair 7

Elevate Modified Membrane Repair 8

Cut and Puncture – Repair Detail Examples 9

EPDM Field Seam – Repair Detail Examples 10

Thermoplastic Field Seam – Repair Detail Examples 10

Modified Bitumen Field Seam – Repair Detail Examples 11

Modified Bitumen Hail Impact Granule Loss Repair Methods 11

EPDM Base Tie-In – Repair 14

Cleaning of In-Service Membrane 14

- EPDM Membrane 14
- TPO Membrane 15
- PVC and PVC KEE Membrane 15
- Application of Splice Adhesive and Lap Sealant 16

Non-Warranted Repairs 16

- Penetration Pockets 16
- Sheet Metal Flashing and Trim 17
- Repair of Wrinkles Within 18" (458 mm) of a Seam 17

Roof Repair and Renovation

The procedures and specifications withing this document are offered as a complementary service only, and Amrize Building Envelope LLC ("Amrize"). disclaims any liability, under any theory of law, arising out of the use of these procedures. For repairs to be included in the Red Shield™ Warranty, the repairing contractor must be an Elevate Licensed Applicator. These procedures must be approved by a Amrize representative prior to use on Amrize warranted projects.

NOTE: The following drawings show general procedures for Roof System Repairs and Renovation. Please refer to Elevate technical manuals and documents for additional information. Roof repairs and renovations should be performed by only a Professional Roofing Contractor who is licensed and trained by the Roof System Manufacturer.

Membrane repairs consist of repairs to the field portion of the sheet and not flashings, penetrations, or other locations. Membrane repairs may be conducted using the appropriate steps outlined below. Unique conditions not covered in this document should be reviewed with a Elevate technical representative. Repairs to flashings may require removal of the full flashing as well as "over cut" of the field membrane to make proper repairs.

RubberGard EPDM Membrane Repair

General

In the event that a warranted EPDM system sustains more than six punctures in any 100 ft^2 (9.29 m^2) area, the entire area must be overlaid with new membrane, replacing existing insulation as appropriate. Adhered membrane systems will require new membrane to be adhered directly to existing membrane if possible or new suitable substrate.

Repair Cuts/Punctures in the Membrane within 18" (458 mm) of a Seam

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 patch).

Clean the Membrane

1. When repairing membrane which has been in service, it is necessary to remove accumulated dirt. Proper membrane preparations are made by scrubbing the membrane with a scrub brush and warm soapy water, rinsing with clean water, and drying with a clean cotton cloth. If needed clean the areas using clean cotton cloths with the appropriate Elevate cleaner or Splice Wash SW-100. Additional cleaning using the appropriate Elevate cleaner is often necessary.
2. Use QuickScurbber™ Handle & Pad wetted with the Splice Wash SW-100 for membrane caked with dirt. Do not allow the Splice Wash SW-100 to dry. Remove Splice Wash SW-100 with clean cotton cloths to remove contaminants and allow membrane to dry before any repair activity. Additional applications of Splice Wash SW-100 may be required. Splice wash should be used prior to repairs being made. Refer to the Technical Information Sheet for Splice Wash SW-100 for more detailed instructions.

Install Repair Material

1. Repairs must be made with SA-1065 Splice Adhesive. Refer to the Flashing Seam Details found on the Elevate website (www.elevatecommercialbp.com) for application requires of splice adhesive.
2. If not using 18" QuickSeam™ SA Flashing or QuickSeam Batten Cover for patches repairs must be made with alternate membrane and SA-1065 Splice Adhesive.

RubberGard EPDM SA Membrane Repair

General

- Membrane repairs using RubberGard EPDM SA are limited to horizontal repairs only. RubberGard EPDM SA is not approved for use with EcoWhite EPDM membranes.
- The size of a repair using RubberGard EPDM SA should never be smaller than 6" (152 mm) in diameter (length or width) to ensure the repair extends a minimum of 3" (76 mm) in all directions beyond the cut or puncture in the existing membrane.
- Multiple cuts or punctures in an existing membrane in close proximity may be repaired with a single piece of RubberGard EPDM SA. In such cases, the RubberGard EPDM SA must extend a minimum of 6" (152 mm) beyond the outermost border of the repair area.
- When using RubberGard EPDM SA to repair eligible membranes in ballasted, MAS, or R.M.A. applications, the repair area may not exceed 5′ (1.5 m) in any direction. When repairing eligible adhered membranes, there is no maximum limitation on the size of a repair using RubberGard EPDM SA.
- RubberGard EPDM SA must be unrolled and allowed to relax at least 30 minutes PRIOR TO cutting and installing the membrane. Unroll RubberGard EPDM SA with the release liner facing down so the top side of the membrane is exposed to direct sunlight.

Prepare Existing Membrane

1. Clean the Membrane
   a. When repairing membrane that has been in service, it is necessary to remove accumulated dirt.
   b. Proper membrane preparation is made by scrubbing the membrane with a scrub brush and warm soapy water, rinsing with clean water, and drying with clean cotton cloths. After this initial cleaning, clean the area again suing clean cotton cloths and Elevate SW-100 Splice Wash. Additional cleaning using Elevate Splice Wash is often necessary.
   c. Cleaning must extend a minimum of 6" (152 mm) in all directions beyond the repair area.
2. Prime the Membrane
   a. Apply an appropriate Elevate primer to the repair area according to the instructions on the Technical Information Sheet (TIS). For repairs using RubberGard EPDM SA, Elevate QuickPrime™ Plus is preferred, but Elevate Single-Ply QuickPrime Primer or QuickPrime Plus LVOC may be substituted. Expect primer flash off/set up times to lengthen based on the type of primer used and ambient conditions.
   b. Primer must extend a minimum of 3" (76 mm) in all directions pas the area to be covered by the RubberGard EPDM SA.

Install RubberGard EPDM SA Membrane

NOTE: Application of RubberGard EPDM SA and removal of the release liner will vary depending on the size and location of the repair. A repair using RubberGard EPDM SA must be square or rectangular. Never cut RubberGard EPDM SA into an L-shape or at angles greater or less than 90°. The terms 'length' and 'lengthwise' refer to the original direction of the release liner prior to cutting the RubberGard EPDM SA.

1. Unroll RubberGard EPDM SA and allow it to relax PRIOR TO cutting and installing the membrane, as per above and standard RubberGard EPDM SA application procedures.
2. Cut the RubberGard EPDM SA to the needed size. RubberGard EPDM SA must extend at least 3" (76 mm) in all directions beyond the cut or puncture in the existing membrane (with primer extending at least 3" (76 mm) beyond the edge of the RubberGard EPDM SA).
   a. RubberGard EPDM SA must be within its shelf life and must have been stored according to Elevate specifications. The release liner must be in good conditions with no peeling, fraying, or tearing. If dust, dirt, or other foreign matter has accumulated along the edge of the RubberGard EPDM SA roll, the edge must be cut off prior to installation.
   b. Scissors must be sharp, clean, and free of adhesive or other residues. Cut the RubberGard EPDM SA in a straight line without damaging the Secure Bond™ Adhesive. The cut edge should be straight, clean, and continuous without jagged edges. The release liner must be intact and in full contact with the Secure Bond adhesive.
   c. For repairs extending more than 5′ (1.5 m) in any direction, the existing membrane must be scored (cut) lengthwise along each edge prior to installing RubberGard EPDM SA. RubberGard EPDM SA must extend 6" (152 mm) beyond the scoring in the existing membrane. When applicable, score the existing membrane at least 6" (152 mm) for any seam. Scoring the existing membrane is necessary to avoid trapping air, solvent vapors, or moisture between the existing membrane and RubberGard EPDM SA.
3. RubberGard EPDM SA Membrane Application
   a. Position the RubberGard EPDM SA over the repair area. Do not remove the release liner ahead of time and do not apply downward pressure on the RubberGard EPDM SA membrane while the release liner is in contact with the primed surface.
   b. Once the RubberGard EPDM SA is in position, fold back the leading edge of the membrane at one end to expose the release liner and pull the liner at a 45° angle moving away from the center until the removed portion of the release liner extends beyond the edge(s) of the RubberGard EPDM SA, then allow the folded back lead edge of the membrane to lie back in its original position. Do not fold RubberGard EPDM SA in half to expose the release liner.
   c. Keeping the RubberGard EPDM SA flat and secured, continue removing the release liner at a 45° angle, parallel to the roof surface, along the entire length of the RubberGard EPDM SA sheet taking care not to disturb the original positioning of the RubberGard EPDM SA. Pulling the release liner at an alternate angle may allow the sheet to move or may trap air. Depending on the width of the RubberGard EPDM SA, at least two people may be required to properly remove the release liner, especially if the sheet is wide enough that the release liner remains split. If it is, the two sides of the release liner are to be removed simultaneously. Keep the release liner as close to the roof surface as possible throughout its removal.
      NOTE: For full sheet (10′ (3 m) wide) repairs, first remove the split release liner, then remove the 4" (102 mm) strip of release liner along the seam edge. RubberGard EPDM SA repairs must "straddle" existing roof seams, extending at least 12" onto the surface beyond an existing seam.
   d. Follow standard Elevate RubberGard EPDM SA application procedures for brooming and rolling the membrane to initiate adhesion, adjusting as needed based on the size of the repair. For small repairs, it is sufficient to roll the entire membrane repair using a 1 ½" to 2" (38 mm to 51 mm) wide silicone roller or a Elevate QuickRoller™ just as one would normally roll a RubberGard EPDM SA seam.
4. Install Elevate QuickSeam™ Joint Covers at all T-seam intersections created by the installation of RubberGard EPDM SA over seams in the existing membrane. T-Joints may be required if EPDM membrane crosses field or flashing seams.
   NOTE: If the membrane repair will be made along a roof edge or at the base of a parapet wall, adjust RubberGard EPDM SA application and release liner removal accordingly using standard RubberGard EPDM SA application procedures. For membrane repairs within 18" (0.45 m) of a roof drainage device, contact Technical Services for assistance.
5. Apply Lap Sealant along all edges of RubberGard EPDM SA as per standard RubberGard EPDM SA application procedures.

Using RubberGard EPDM SA to Repair Existing EPDM Membrane

Eligible Membranes and Systems – Limitations

- Elevate EPDM Membranes that are eligible to be repaired with RubberGard EPDM SA include: RubberGard EPDM SA, RubberGard™ EPDM and RubberGard MAX EPDM. RubberGard EcoWhite™ EPDM, RubberGard Platinum™ EPDM, fire rated EPDM, and Elevate GeoGard™ EPDM and PondGard™ Rubber Liners may not be repaired with RubberGard EPDM SA
- Membrane repairs using RubberGard EPDM SA are limited to horizontal repairs only and should never be smaller than 12″ (304.8 mm) in diameter in any one direction (length or width). When using RubberGard EPDM SA to repair eligible membranes in ballasted, MAS, or RMA applications, the repair area may not exceed 5′ (1.52 m) in any one direction. When repairing eligible membranes in adhered applications with RubberGard EPDM SA, the repair area may be the entire size of the RubberGard EPDM SA sheet (10′ x 100′ (3.05 m x 30.48 m)).
- Multiple Repairs
  - If the existing EPDM membrane is damaged by cuts or punctures in more than six (6) locations within a 100 ft^2 (9.3 m^2) area, new membrane must be installed over the existing membrane in accordance with Elevate specifications.
  - RubberGard EPDM SA may be used for larger repairs.
- RubberGard EPDM SA must be unrolled and allowed to relax at least 30 minutes prior to cutting and installing the membrane. Unroll RubberGard EPDM SA with the release liner facing down so the top side of the membrane is exposed to direct sunlight.

Prepare Existing Membrane

1. Clean the Membrane
   a. When repairing membrane that has been in service, 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 drying with clean cotton cloths. After this initial cleaning, clean the area again using clean cotton cloths and Elevate SW100 Splice Wash. Additional cleaning using Elevate Splice Wash is often necessary.
   b. The entire area to receive RubberGard EPDM SA must be cleaned, and cleaning must extend a minimum of 12” (204 mm) in all directions beyond the outermost border of the repair area.
2. Prime the Membrane
   a. Apply an appropriate Elevate primer to the repair area according to the instructions on the Technical Information Sheet. For repairs using RubberGard EPDM SA, Elevate QuickPrime™ Plus is preferred, but Elevate Single-Ply QuickPrime Primer or QuickPrime Plus LVOC may be substituted. Expect primer flash off/set up times to lengthen based on the type of primer used and ambient conditions.
   b. The entire area to be covered with RubberGard EPDM SA must be primed. Primer must extend a minimum of 3″ (76 mm) in all directions past the area to be covered by RubberGard EPDM SA.

Install RubberGard EPDM SA Membrane

NOTE: Application of RubberGard EPDM SA will vary depending on the size of the repair. A repair using RubberGard EPDM SA must be square or rectangular. Never cut RubberGard EPDM SA into an L-shape or at angles greater or less than 90◦. The terms ‘length’ and ‘lengthwise’ refer to the original direction of the release liner.

1. Unroll RubberGard EPDM SA and allow it to relax prior to cutting and installing the membrane, as per above and standard RubberGard EPDM SA application procedures.
2. Cut the RubberGard EPDM SA to the needed size. RubberGard EPDM SA must extend at least 6″ (152 mm) in all directions beyond the outermost border of the repair area (with primer extending at least 3″ beyond the edges of the RubberGard EPDM SA).
   a. RubberGard EPDM SA must be within its shelf life and must have been stored according to Elevate specifications. The release liner must be in good condition, with no peeling, fraying, or tearing. If dust, dirt, or other foreign matter have accumulated along the edge of the RubberGard EPDM SA roll, the edge must be cut off prior to installation.
   b. Scissors must be sharp, clean, and free of adhesive or other residues. Cut the RubberGard EPDM SA in a straight line without damaging the Secure Bond™ Adhesive. The cut edge should be straight, clean, and continuous without jagged edges and with the release liner intact and in full contact with the Secure Bond adhesive.
3. For repairs longer than 5′ in any one direction, the existing membrane must be scored (cut) lengthwise along each edge prior to installing RubberGard EPDM SA. RubberGard EPDM SA must extend 6″ beyond the scoring in the existing membrane. When applicable, score the existing membrane at least 6″ from any seam. Scoring the existing membrane is necessary to avoid trapping air, solvent vapors, or moisture between the existing membrane and RubberGard EPDM SA.
4. RubberGard EPDM SA Membrane Application
   a. Position the RubberGard EPDM SA over the repair area. Do not remove the release liner ahead of time and do not apply downward pressure on the RubberGard EPDM SA membrane while the release liner is in contact with the primed surface.
   b. Once the RubberGard EPDM SA is in position, fold back the leading edge of the membrane at one end to expose the release liner and pull the liner at a 45° angle moving away from the center until the removed portion of the release liner extends beyond edge(s) of the RubberGard EPDM SA membrane, then allow the folded back lead edge of the membrane to lie back in its original position. **DO NOT FOLD 4. RUBBERGARD EPDM SA IN HALF LENGTHWISE TO EXPOSE THE RELEASE LINER.**

c. Keeping the membrane flat and secured, continue removing the release liner at a 45° angle, parallel to the roof surface, along the entire length of the sheet taking care not to disturb the original positioning of the membrane. Pulling the release liner at an alternate angle may allow the sheet to move or may trap air. Depending on the width of the RubberGard EPDM SA, at least two people may be required to properly remove the release liner, especially if the sheet is wide enough that the release liner remains split. If it is, the two sides of the release liner are to be removed simultaneously. Keep the release liner as close to the roof surface as possible throughout its removal.
d. For full sheet (10′ wide) repairs, first remove the split release liner, then remove the 4" (102 mm) strip of release liner along the seam edge. RubberGard EPDM SA repairs must "straddle" existing roof seams, extending at least 12" onto the surface beyond an existing seam.
e. Follow standard Elevate RubberGard EPDM SA application procedures for brooming and rolling the membrane to initiate adhesion, adjusting as needed based on the size of the repair. For small scale repairs, it is sufficient to roll the entire membrane repair using a 1½" to 2" (38 mm to 51 mm) wide silicone roller or Elevate QuickRoller™ just as one would normally roll a RubberGard EPDM SA seam.

5. Install Elevate QuickSeam™ Joint Covers at all T seam intersections created by the installation of RubberGard EPDM SA over seams in the existing membrane.
6. Apply Lap Sealant along all edges of RubberGard EPDM SA as per standard RubberGard EPDM SA application procedures.

NOTE: If the membrane repair will be made along a roof edge or at the base of a parapet wall, adjust RubberGard EPDM SA application accordingly based on standard RubberGard EPDM SA application procedures. For membrane repairs within 18" of a roof drainage device, consult the Elevate EPDM Application Guide or contact Technical Services for assistance.

RubberGard EcoWhite EPDM Membrane Repair

General

Repair cuts/punctures in the membrane withing 18" (458 mm) of a seam. Repair a cut or puncture in the EcoWhite EPDM membrane with like 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 patch).

Clean the Membrane

When repairing membrane which has been in service, it is necessary to remove accumulated dirt. Proper membrane preparation is made by scrubbing the membrane with a soft bristle scrub rush and warm soapy water, rinsing with clean water, and drying with clean cotton cloths. Clean the area using clean cotton cloths and Elevate Splice Wash. Additional cleaning using Elevate Splice Wash is often necessary.

Install Repair Material

Repairs must be made with EcoWhite Splice Adhesive. Refer to the Flashing Seam Details and application requirements of splice adhesives.

NOTE: If EcoWhite membrane is not available then black EPDM membrane may be used for repairs but should be painted with AcryliTop™ PC-100 (white) being sure to cover the black surface of the membrane.

Thermoplastic Membrane Repair

! **NOTE:** When repairs to thermoplastic membranes occur, it is important not to mix TPO and PVC/PVC KEE membranes and applicable products together. These membranes are not compatible.

Clean the Membrane

TPO: When repairing "in-service" Elevate UltraPly TPO membrane it is necessary to remove accumulated field dirt. The membrane is proper prepared by scrubbing with a soft bristle scrub brush and warm soapy water, rinsing with clean water, drying with clean cotton cloths, then wiping with a clean cotton cloth dipped in Elevate SW-100 Splice Wash.

PVC/PVC KEE: When repairing "in-service" Elevate PVC or PVC KEE membrane it is necessary to remove accumulated field dirt. The membrane is proper prepared by scrubbing with a soft bristle scrub brush and warm soapy water, rinsing with clean water, drying with clean cotton cloths, then wiping with a clean cotton cloth dipped in MEK or Acetone.

Warranted UltraPly 78 Plus PVC Membranes (2009 and Older Aged Membranes): When repairing legacy or aged warranted membranes it may be difficult to weld to the existing aged materials. When welding is difficult then alternate repair methods or even re-roof/re-cover applications should be considered. Remove any debris and dirt by sweeping the mating surfaces with a stiff broom. Cleaning of PVC or PVCK KEE membranes may be completed with MEK or Acetone and allowed to dry. Thoroughly clean the involved area extending a minimum 6" (152 mm) past the edge of the area being repaired in all directions. **NOTE: Thorough cleaning with MEK or Acetone is the most critical procedure to ensure the performance of the new to existing membrane heat-weld.**

Install Repair Patch

1. Repair damaged Elevate thermoplastic membrane with like material.
2. The repair material must extend a minimum of 3" (76 mm) beyond the boundary of the affected area in all directions. (Example: A pinhole will require a minimum 6" x 6" (152 mm x 152 mm) patch.)
3. Round all corners of the repair piece.
4. All cut edges where membrane reinforcement is exposed will require appropriate cut edge sealant.

Multiple Repairs

1. If the membrane is damaged in more than six (6) locations within a 100 ft^2 (9.3 m^2) area, new membrane extending 6" (152 mm) beyond the border of the damaged area must be installed over existing membrane in accordance with published Elevate specifications.
2. Areas with excessive damage should have the insulation tested for moisture. Wet insulation can negatively affect the performance of the repaired sections.
3. Secure the replacement membrane in the same manner as the existing membrane.
4. Contact a Elevate Technical Representative with questions on how to address comprehensive damage.

Aged Membrane – Difficult Weld Areas (PVC/PVC KEE – PVC-LS-11)

1. Ensure existing membrane is cleaned using appropriate cleaning procedures. Repairs should only be made with like and compatible materials. Do not mix TPO with PVC/PVC KEE products.
2. Cut out existing membrane in the area of the repair. Be sure to cut a minimum of 6" (152 mm) past the repair area. Replace all insulation boards as needed due to damage. Account for a minimum of 2" (50.8 mm) of the existing membrane in the cut area to remain. This membrane will be used to overlay the new thermoplastic clad metal.
3. Install appropriate nailer around perimeter of the repair area. Nailer to match existing system assembly height. Install nailers per appropriate building codes.
4. Center thermoplastic clad metal over the nailer and attach through nailer and into underlying deck with appropriate fasteners.
5. Lap existing membrane over the new thermoplastic clad metal. The existing sheet lap should fall at the center of the thermoplastic clad metal strip. If over the center point trim back to meet center location.
6. Install new thermoplastic membrane in the repair area to match the current system. New membrane should be cut to fit to the center of the thermoplastic clad metal over the nailer. **NOTE:** Do not apply adhesives to the thermoplastic clad metal or the membrane weld areas.
7. Weld both new and old thermoplastic membrane to the newly installed thermoplastic clad metal being sure that each sheet meets in the middle of the metal. Intent is for the membranes to abut at the center as close as possible.
8. Once welded apply a continuous bead of cut edge sealant along all seams.
9. Appropriate termination details may be required on both sides of the repaired areas.
10. See the Elevate website (www.elevatecommercialbp.com) for additional lap splice details.

Thermoplastic InvisiWeld Applied Membrane Repair

> ! **NOTE:** When repairs to thermoplastic membranes occur, it is important not to mix TPO and PVC/PVC KEE membranes and applicable products together. These membranes are not compatible.

General

- Repair punctures/cuts/damage with like materials.
- The repair material shall be heat welded like thermoplastic membrane with 3" (76 mm) beyond the damaged are in all directions. (Example: A pinhole will require a minimum 6" x 6" (152 mm x 152 mm) patch.)
- Round all corners of the repair piece.

Inspect the Plates

At each induction weld bonded plate location, the condition of the plate bonded or attached membrane should be inspected for membrane abrasion at the plate peripheral edges, and for any debris or holes in the membrane over the plate. If any abrasion or membrane damage is found, the entire area must be patched with a minimum 4" x 4" (102 mm x 102 mm) patch that covers the plate area completely. An appropriate T-Joint cover may also be used to repair a pinhole or overheated membrane over induction welded plate.

> **!** **NOTE:** For inspection purposes, Elevate recommends the use of a bathroom plunger to inspect the individual InvisiWeld plate welds. By applying the rubber end of a plunger to the membrane adjacent to the welded InvisiWeld plate and pulling upwards, the condition of the weld can be assessed. This is an effective method to ensure that no InvisiWeld plate welds are missed during installation.

Clean the Membrane

TPO: When repairing "in-service" Elevate UltraPly TPO membrane it is necessary to remove accumulated field dirt. The membrane is proper prepared by scrubbing with a soft bristle scrub brush and warm soapy water, rinsing with clean water, drying with clean cotton cloths, then wiping with a clean cotton cloth dipped in Elevate SW-100 Splice Wash. Do not heat weld over splice wash that has not been wiped down with a clean dry rag.

PVC/PVC KEE: When repairing "in-service" Elevate PVC or PVC KEE membrane it is necessary to remove accumulated field dirt. The membrane is proper prepared by scrubbing with a soft bristle scrub brush and warm soapy water, rinsing with clean water, drying with clean cotton cloths, then wiping with a clean cotton cloth dipped in MEK or Acetone. Do not heat weld over areas where MEK/Acetone was been used without first wiping down with a clean dry rag.

Install New Membrane

Install new membrane and appropriate induction weld plates/fasteners per standard procedures.

Multiple Repairs

If the membrane is damaged in more than six (6) locations in a 100 ft^2 (9.3 m^2) area, new membrane extending 6" (152 mm) beyond the border of the damaged area must be installed over existing membrane in accordance with published Elevate specifications. Secure the replacement membrane in the same manner as the existing membrane. Contact a Elevate Field Technical Representative with questions on how to address comprehensive damage.

Removal of Existing Thermoplastic Membrane Welded to Plates

In the event that a section of membrane needs removed from induction weld plates the following method may be attempted for membrane removal. **NOTE: The plates where the membrane is removed are not to be reused for welding of new membrane.**

1. Section out the area of membrane to be removed. Once this area is identified the membrane may be cut into smaller sections to allow for easier removal.
2. Using the appropriate machine existing welded plates can be heated, using a lower setting, to release the membrane from the plate. It is important to verify no stiff points of membrane remain on the existing plate to avoid damage to the new membrane once overlayed.
3. After removal of existing membrane install the appropriate induction weld plates and appropriate fasteners. Place new plates and fasteners next to the existing plate/fastener locations.
4. Place new section of membrane over the area and position so an overlap of 6" (152 mm) is present on all sides.
5. Weld new membrane to each new InvisiWeld plate and along all edges as outlined in the Elevate applications standards.
6. All cut edges where membrane reinforcement is exposed will require appropriate cut edge sealant.

Elevate Modified Membrane Repair

General

- In the event that a warranted Modified Bitumen system sustains more than six punctures in any 100 ft^2 (9.29 m^2) area, the entire area must be overlaid with new membrane. Repair punctures/cuts/damage with like materials when possible.
- Areas with excessive damage should have the insulation tested for moisture. Wet insulation can negatively affect the performance of the repaired sections.
- When open seams or Fishmouth conditions occur that cannot be re-fused with a torch and trowel, an application using 3-coursed UltraFlash, and Polyester fabric may be used. Granules can be broadcast into fresh products for aesthetics. Please contact the Elevate Technical Department for additional information.

Degranulation or Minor Surfacing Issues (Minor Alligatoring)

Option 1: Paint area with UltraFlash (one part or two part) or cold adhesive and broadcast granules.
Option 2: Use a trowel and torch to embed granules and broadcast new granules into hot bitumen.
NOTE: When excessive surfacing issues are present replacement of the membrane should be considered.

Wrinkles and Holes

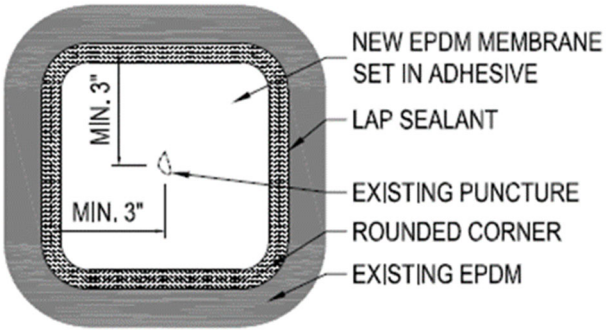
1. Cut out damaged areas and replace insulations with like materials if needed. Cut out full sheet width and not just a patch.
2. After cutting out damaged section torch the perimeter area of the cut-out section and use a trowel to embed the granules into the existing membrane a minimum of 6" (152 mm) past the edge of the cutout area.
3. Embed granules a minimum of 6" (152 mm) in all directions around the cut-out section of membrane.
4. Replace cut out areas with like membrane materials using a torch or flashing cement being sure to extend the new membrane materials a minimum of 6" (152 mm) beyond the repair area and the full width of the sheet.
5. Broadcast granules into any bleedout.

Cut and Puncture – Repair Detail Examples

TYPICAL CUT AND PUNCTURE REPAIR OF EPDM MEMBRANE

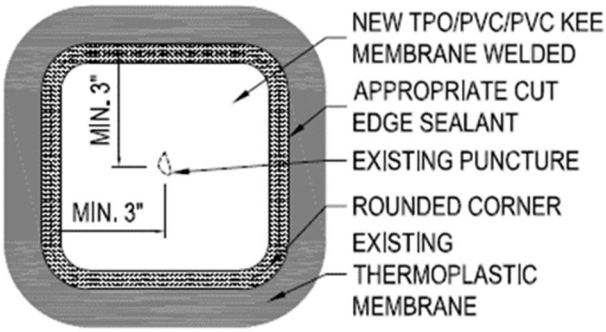
NOTE:

1. Uncured EPDM products are NOT acceptable for Cut and Puncture repairs.
2. The application of new EPDM membrane to existing in-service EPDM membrane requires special cleaning and priming procedures. Refer to cleaning procedures of in-service membrane.



TYPICAL CUT AND PUNCTURE REPAIR OF THERMOPLASTIC MEMBRANE

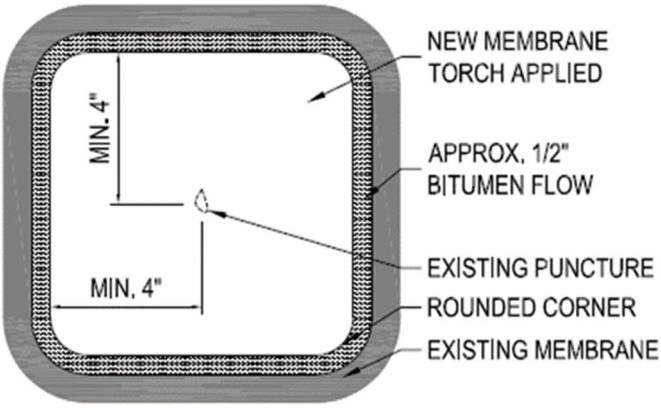
NOTE:
The application of new TPO, PVC or PVC KEE membrane to existing in-service appropriate thermoplastic membrane requires special cleaning and priming procedures. Refer to cleaning procedures of in-service membrane.



TYPICAL CUT AND PUNCTURE REPAIR OF MODIFIED BITUMEN MEMBRANE

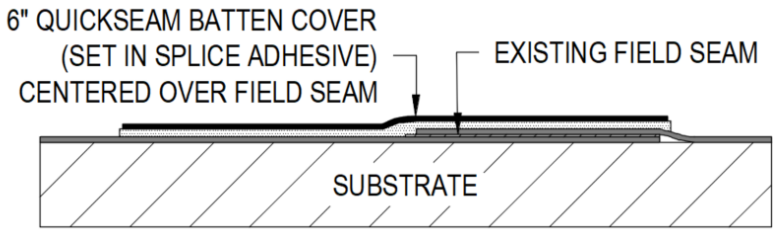
NOTE:

1. Prepare existing surface by heating with a roofing torch and embed any exposed roofing granules and or lightly remove (without distorting the membrane compound) any applied coating with a heated trowel. After preparing the receiving surface and allowing to cool, apply primer to all surfaces receiving the new membrane patch.
2. Where torches are not permitted on the rooftop, flashing cement may be used in lieu of the preferred torch repair method.



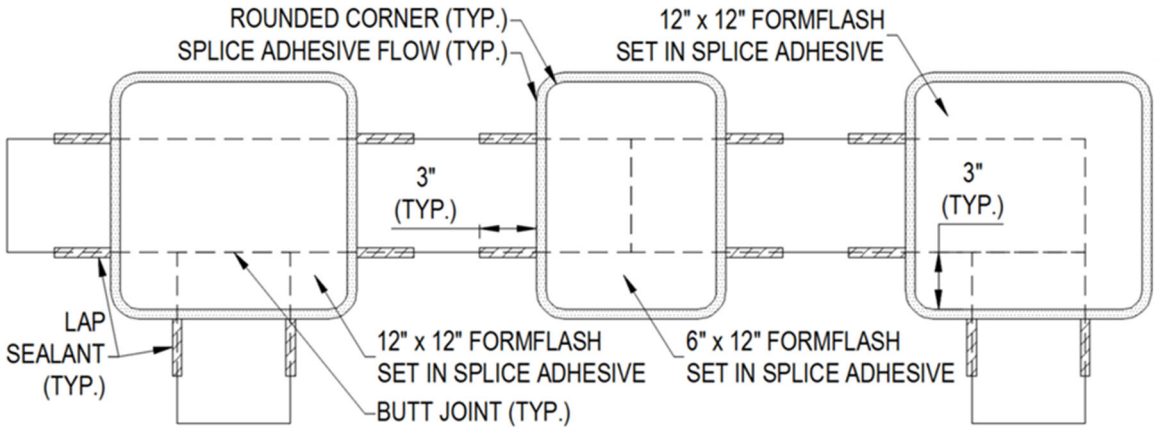
EPDM Field Seam – Repair Detail Examples

TYPICAL EPDM CROSS SECTION



NOTE:
The application of new EPDM membrane to existing in-service EPDM membrane requires special cleaning and priming procedures. Refer to cleaning procedures of in-service membrane.

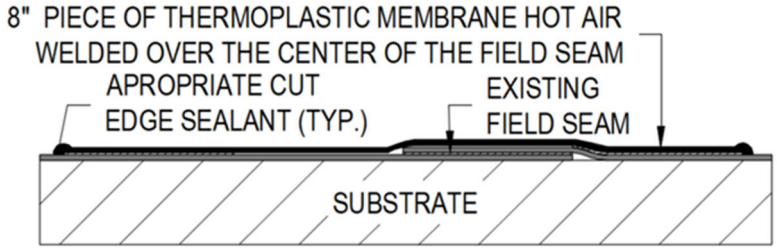
TYPICAL EPDM JOINT DETAILS



NOTE:
The application of QuickSeam Tape and FormFlash™ to existing in-service EPDM membrane requires special cleaning and priming procedures. Refer to cleaning procedures of in-service membrane.

Thermoplastic Field Seam – Repair Detail Examples

TYPICAL THERMOPLASTIC CROSS SECTION

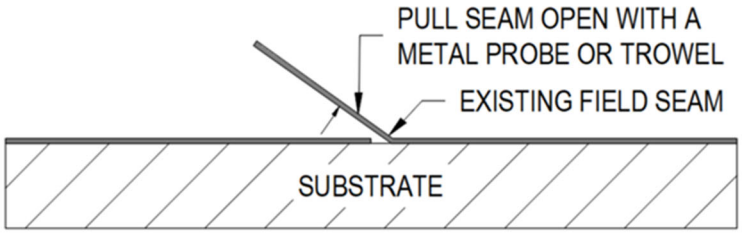


NOTE:
The application of new TPO, PVC or PVC KEE membrane to existing in-service thermoplastic membrane requires special cleaning and priming procedures. Refer to Sections G and H – "Cleaning of In-Service Membrane".

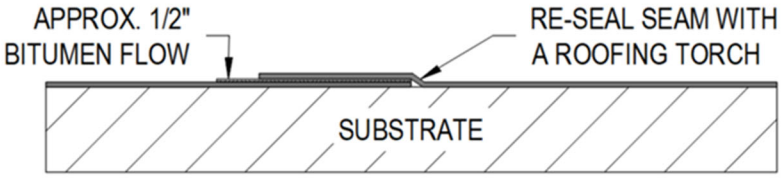
Modified Bitumen Field Seam – Repair Detail Examples

TYPICAL CUT AND PUNCTURE REPAIR OF MODIFIED BITUMEN MEMBRANE

Step 1:



Step 2:

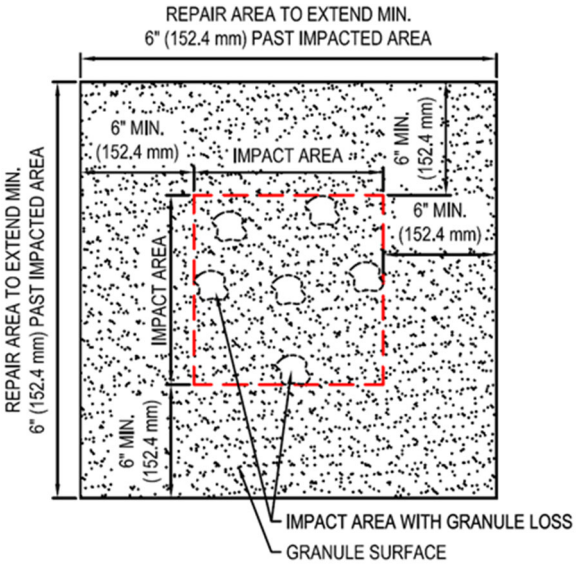


NOTE:
Where torches are not permitted on the rooftop, flashing cement may be used in lieu of the preferred torch repair method.

Modified Bitumen Hail Impact Granule Loss Repair Methods

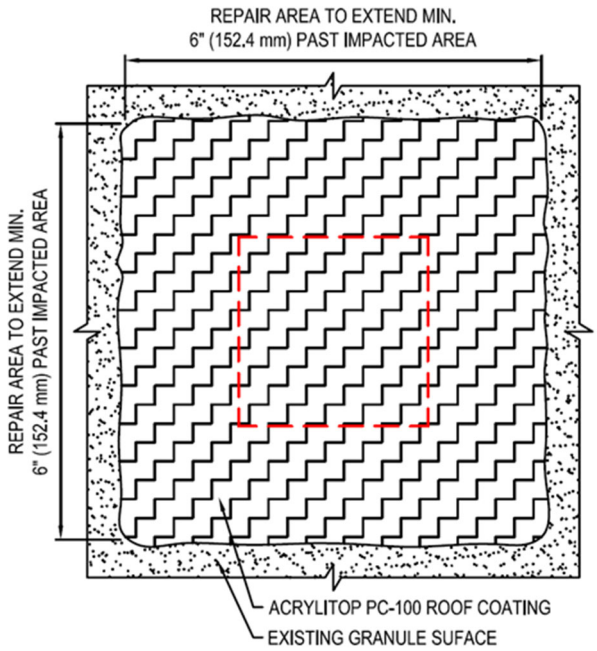
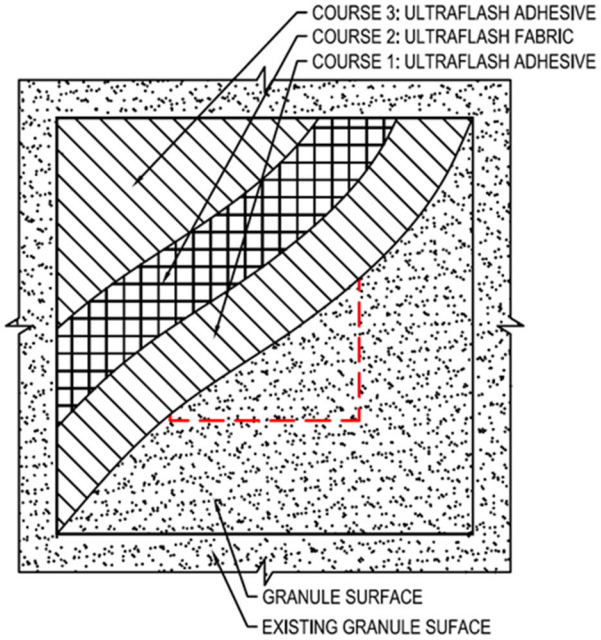
HAIL IMPACT GRANULE LOSS REPAIR METHODS

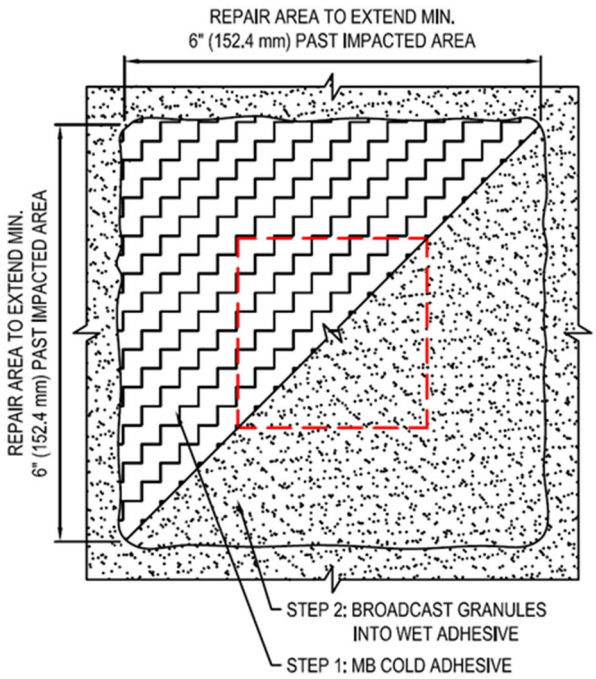
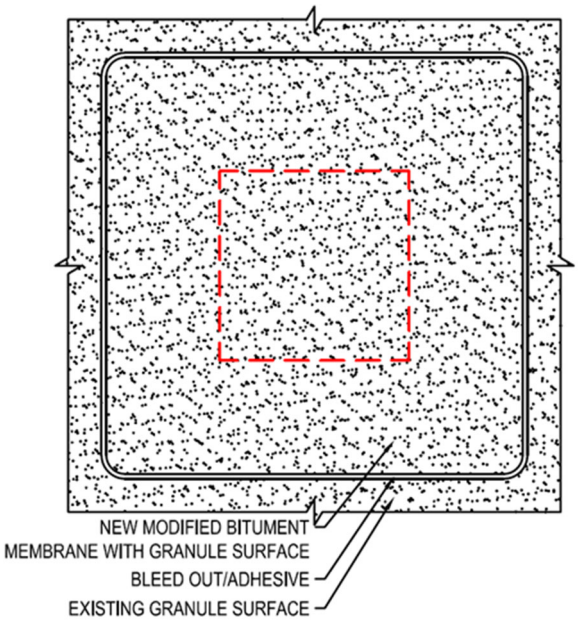
Impacted Zone



NOTE:

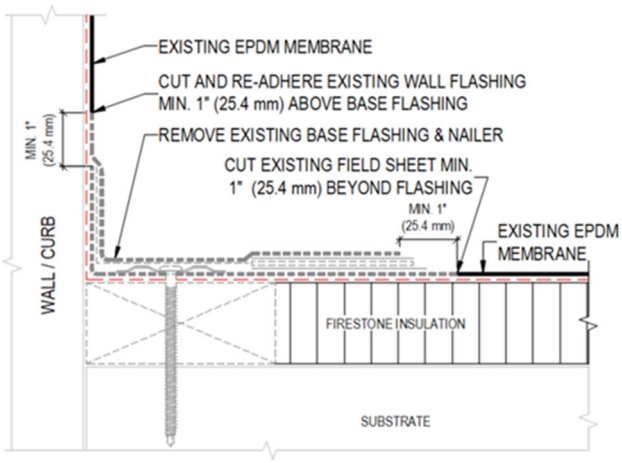
1. See detail MB-M-10 for more information.
2. Round all corners of membrane and/or patches when used.
3. Broom loose granules and other debris from impacted area.
4. Only perform repair when roofing surface is dry.

Proposed Repair	Method of Repair (Options)
Coating  	1. Clean off loose granules, dirt/debris and other contaminants. 2. Apply AcryliTop PC-100 Roof Coating over affected area.
UltraFlash 3-Course Adhesive with Granules – Small Area  	1. Utilize UltraFlash Adhesive and fabric (3 course) to overlay the area extending 6" (152.4 mm) past any affected area. 2. Broadcast of granules while adhesive is wet is optional.

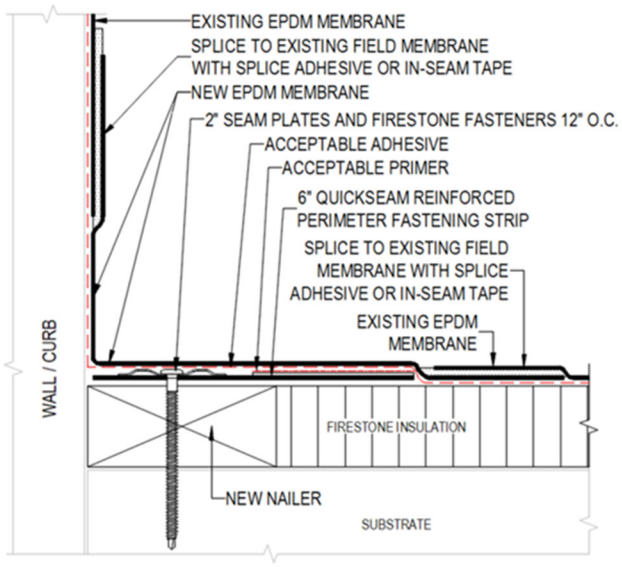
MB Cold Adhesive with Granules – Large Area  	1. Flood coat surface with MB Cold Adhesive. 2. Broadcast of granules while adhesive is wet required.
Overlay – Like Materials  	**Options:** 1. Utilize UltraFlash Adhesive and fabric (3 course) to overlay the area extending 6" (152.4 mm) past any affected area. OR 2. Overlay with full sheet membrane extending 6" (152.4 mm) past any affected area. Granule surface preparation may be required (broom, remove loose granules, adhere with MB Cold Adhesive and heat fuse laps.

EPDM Base Tie-In – Repair

Step 1:



Step 2:



NOTE:
The application of new EPDM membrane to existing in-service EPDM membrane requires special cleaning and priming procedures. Refer to cleaning procedures of in-service membrane.

Cleaning of In-Service Membrane

EPDM Membrane

THIS IS A PERFORMANCE SPECIFICATION. It is required that the **membrane be dark gray in color without streaks** before proceeding with any bonding or splicing activity. The cleaned area must be larger than the repair area.

1. Cleaning may be achieved by one of the following methods:
   - Brush and wash by hand with a solution of mild dish soap and water and a stiff bristle brush. Do not use metal bristles. Rinse the receiving surface with water until clean. Take care not to flood the receiving surface (and cause leaks).
   - Use an electric floor scrubber and a wet vacuum. Rinse the receiving surface with water until clean. Take care not to flood the receiving surface (and cause leaks).
   - Use a power water washer and a wet vacuum. Take care not to flood the receiving surface (and cause leaks).
2. Allow the receiving surface to thoroughly dry. If necessary, dry the washed surface with clean towels or rags. Make sure that no moisture can be trapped.
3. Wash the existing EPDM twice with Elevate Clear Splice Wash using clean, white, cotton rags, allowing the surface to evaporate and dry between washings. Change cleaning rags often.
4. Wash the mating side of the repair piece once with Elevate Clear Splice Wash with clean, white, cotton rags, allowing the surface to dry before the application with Splice Adhesive. Change cleaning rags often. No cleaning of QuickSeam Tape products is necessary. If QuickSeam Tape becomes dirty, it must not be used.
5. "Clean" membrane must be dark gray in color without streaking of any substances.

CLEAR SPLICE WASH RECOMMENDED COVERAGE RATES – 250 SF/GAL	
6" (152 mm) – 150 LF	12" (304.8 mm) – 250 LF
8" (203.2 mm) – 376 LF	15" (381 mm) – 200 LF
10" (254 mm) – 301 LF	18" (457.2 mm) – 167 LF
NOTE: Listed coverage rates may vary depending on ambient weather conditions.	

NOTE: After cleaning and priming the in-service membrane, proceed with the application of the new EPDM membrane, FormFlash, Lap Sealant, and QuickSeam Tape in accordance with current application specifications for new construction.

TPO Membrane

The cleaned area must be larger than the repair area.

1. Ensure that the existing area to which new Thermoplastic membrane is to be mated is clean, smooth, and free of all contaminants.
2. Thoroughly clean this area with detergent and water. It is recommended that a water-soluble granular cleaner be used such as TMT® brand, which is manufactured by the U.S. Borax® Company. Liquid cleaners tend to leave a film residue that can interfere with heat-weld quality. The cleaner must be completely rinsed/removed from areas where welding may occur and allowed to completely dry before any welding is performed.
3. It is recommended that a polypropylene scouring pad be used for maximum cleaning. This is the type manufactured by 3M. Coupled with the granular detergent it allows for enough abrasive action to thoroughly clean the sheet without causing damage to it.

! NOTE: Do NOT use steel wire brushes under any circumstances.

4. It is imperative that the area be thoroughly rinsed several times to remove all cleaner and contaminants before heat welding. Further, the area must be allowed to dry completely before continuing. If blisters form upon heat welding, the area has not been allowed to dry sufficiently and heat welding should discontinue.
5. After allowing to dry sufficiently, the heat-welding areas on the existing membrane shall be cleaned a second time with denatured alcohol and clean cotton rag to remove all surface impediments and eliminate any surface curing which may have occurred.

! AGAIN: THOROUGH CLEANING WITH DENATURED ALCOHOL SOLVENT IS THE MOST CRITICAL PROCEDURE TO ENSURE THE PERFORMANCE OF THE NEW TO EXISTING MEMBRANE HEAT-WELD.

6. All heat welding shall be in accordance with Elevate Thermoplastic details and specifications as published. Keep in mind that the existing sheet is aged, which may call for more allowance. Care should be taken not to overheat and scorch either membrane.
7. Upon completion, allow newly welded seams to cool.

! IMPORTANT: ALL WELDS MUST BE THOROUGHLY PROBED AND CHECKED FOR COMPLETE INTEGRITY AND REWELDED OR STRIPPED IN AS REQUIRED.

PVC and PVC KEE Membrane

The cleaned area must be larger than the repair area.

1. Ensure that the existing area to which new PVC membrane is to be mated is clean, smooth, and free of all contaminants.
2. Thoroughly clean this area with Orange Power Cleaner and a polypropylene scouring pad. This cleaner must be completely rinsed/removed from areas where welding may occur and allowed to completely dry before any welding is performed. Liquid cleaners tend to leave a film residue that can interfere with heat-weld quality.
3. It is recommended that a polypropylene scouring pad be used for maximum cleaning. This is the type manufactured by 3M. Coupled with the appropriate cleaner it allows for enough abrasive action to thoroughly clean the sheet without causing damage to it.

! NOTE: Do NOT use steel wire brushes under any circumstances.

4. It is imperative that the area be thoroughly rinsed several times to remove all cleaner and contaminants before heat welding. Further, the area must be allowed to dry completely before continuing. If blisters form upon heat welding, the area has not been allowed to dry sufficiently and heat welding should discontinue.
5. After allowing to dry sufficiently, the heat-welding areas on the existing membrane shall be cleaned a second time with MEK or Acetone and wiped clean with a clean cotton rag to remove all surface impediments and eliminate any surface curing which may have occurred.

! AGAIN: THOROUGH CLEANING WITH MEK or ACETONE IS THE MOST CRITICAL PROCEDURE TO ENSURE THE PERFORMANCE OF THE NEW TO EXISTING MEMBRANE HEAT-WELD.

6. All heat welding shall be in accordance with Elevate thermoplastic details and specifications as published. Keep in mind that the existing sheet is aged, which may call for more allowance. Care should be taken not to overheat and scorch either membrane.
7. Upon completion, allow newly welded seams to cool.

! IMPORTANT: ALL WELDS MUST BE THOROUGHLY PROBED AND CHECKED FOR COMPLETE INTEGRITY AND REWELDED OR STRIPPED IN AS REQUIRED.

Application of Splice Adhesive and Lap Sealant

The cleaned area must be larger than the repair area.

1. Stir the Splice Adhesive thoroughly before and during use to achieve a uniform mix with no sediment on the bottom and no un-mixed components evident.
2. Apply Splice Adhesive to the previously cleaned membrane using Elevate-supplied solvent resistant paint brush. Adhesive is to be applied in a thick, even, smooth coat at the rate of 150-175 lineal feet per gallon for a 3" (76.2 mm) splice (40 square foot per gallon). Adhesive is to be applied COMPLETELY to both the receiving surface and the repair piece simultaneously with long brush marks. Do not overwork the adhesive film. No adhesive should be applied directly to the QuickSeam tape materials.
3. Allow the adhesive to set-up on each surface until tacky so as not to stick or string to the touch of a dry finger. Adhesive film should also be pushed with the index finger to assure it is dry within the film. (The Touch-Push Test)
4. Mate the repair piece onto the receiving surface, centering it over the area in need of repair. Do not stretch or wrinkle the cover strip while mating it. A minimum 3" (76.2 mm) EPDM to EPDM lap splice must be achieved.
5. With 2" – 3" (50.8 mm - 76.2 mm) silicon rollers, roll the newly spliced piece twice; first across (or perpendicular to) the mated surface, and then second along the length of the spliced edge.
6. After the splice has been allowed to cure no more than four hours, clean any contaminants from the base membrane a minimum of one inch on each side of the lap edge with a damp, clean, cotton rag of Clear Splice Wash. This step is only necessary if the seam edge has become dirty or contaminated. Do not soak the lap edge with Clear Splice Wash.
7. Immediately after cleaning, apply a 2" (50.8 mm) wide thin coat of Splice Adhesive to the seam step-off.
8. After the Splice Adhesive has dried a minimum of four hours, apply a ⅜" (3.5 mm) bead of lap sealant and trowel the sealant so as to leave a mound over the lap edge. Coverage should be about 20 LF per caulking tube.

STANDARD COVERAGE RATES – SPLICE ADHESIVE 40 SQUARE PER GALLON

Seam/Cover Strip	Coverage Rage (LF/GAL)	Seam/Cover Strip	Coverage Rage (LF/GAL)	Seam/Cover Strip	Coverage Rage (LF/GAL)	QuickSeam Width	Coverage Rage (LF/GAL)
3" (76.2 mm)	160	8" (203.2 mm)	60	15" (381 mm)	32	5" (127 mm)	200
4" (101.6 mm)	120	10" (254 mm)	50	18" (457 mm)	27	6" (152.4 mm)	160
6" (152.4 mm)	80	12" (304.8 mm)	40	24" (609.6 mm)	20	9" (228.6 mm)	110

Non-Warranted Repairs

Penetration Pockets

Penetration Pockets are not included in the Red Shield Warranties; however, the below methods of repair are recommended.

> ! **NOTE:** When installing or repairing a penetration pocket it is important to prime the inside of the pocket, top of the pocket and any penetrating items to ensure a solid bond with the liquid sealer.

Sealer Settled in Penetration Pocket

1. Clean surface area of penetration pocket and penetrations.
2. Prime surface of existing sealer and penetrations.
3. Build up penetration with Duct Tape®, left in place, to create extended form for additional sealer.
4. Fill with new pourable sealer to top of tape and mound to a minimum 2" (50.8 mm) in height.

Liquid Flashing

1. Clean surface area of penetration pocket, penetrations, and surround membrane.
2. Prime surface of existing sealer and penetrations.
3. Apply appropriate liquid flashing system over penetrations, penetration pocket and a minimum 6" (152.4 mm) onto field membrane.

Seam or Flashing

1. Clean surface area of seams or flashing and surrounding membrane areas.
2. Cover with approved flashing or liquid flashing product per standard installation methods.

Remove and Replace

1. Take care not to damage penetrations.
2. Cut membrane around penetration pocket.
3. Cut pocket and sealer material taking care not to cut into items in penetration. Remove as much sealer as possible.
4. Install new target patch around cut out penetration pocket area and secure as needed based on membrane being used and install new penetration pocket per appropriate details and application methods.
5. Height of pourable sealer area may need to be increased if existing sealer was unable to be removed cleanly.
6. Prime new pocket and penetrations and install new pourable sealer to a minimum 2" (50.8 mm) in height.

Sheet Metal Flashing and Trim

Regular inspections of metal flashings and trims should be part of a standard roof maintenance program and resealing as necessary.

Repair of Wrinkles Within 18" (458 mm) of a Seam

RubberGard EPDM:

1. A wrinkle running toward a seam or within 18" (457 mm) of a seam must be repaired.
2. 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 though QuickSeam™ Flashing or FormFlash™, like material must be used for repairs. QuickSeam Flashing or FormFlash may not extend onto the roof surface more than 6" (152 mm). QuickSeam Flashing or FormFlash cannot be used to repair cured membrane. 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. T-Joints may be required if EPDM membrane crosses field or flashing seams.

RubberGard EcoWhite EPDM:

1. A wrinkle running toward a seam or within 18" (458 mm) of a seam must be repaired.
2. The wrinkle must be cut out so that the membrane lays flat and patched with a piece of EcoWhite EPDM membrane having not factory seams that extends a minimum of 3" (76 mm) beyond the boundaries of the cut in all directions. If a wrinkle occurs through EcoWhite QuickSeam Flashing, like materials must be used for repair. EcoWhite QuickSeam Flashing may not extend onto the roof surface more than 6" (152 mm). If repairing of the same wrinkle must continue, then EcoWhite EPDM membrane must be used. Install the EcoWhite EPDM repair membrane first, and round all corners of the repair piece. T-Joints may be required if EPDM membrane crosses field or flashing seams.

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