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15.01.1 Modified Bitumen Membrane Repair

- A.** Use the following procedure to detect and repair deficiencies in the membrane application:
1. Any unsealed significant wrinkle and all fishmouth areas must be cut and repaired so that the membrane lies flat and does not create a hump or void.
 2. The repair sections must extend a minimum of six inches (6") (150 mm) past the deficiency in both directions, for base sheet repairs, and an additional two inches (2") (50 mm) beyond the base sheet patch, for the overlying cap sheet in two-ply repairs. For aesthetics, it is recommended that the entire patch be a full width of membrane.
 3. The new SBS material must be fused to the existing membrane by hot asphalt, cold adhesive, or by heat welding. The new APP material can only be fused to the existing APP membrane by heat welding. Granule embedment on the existing cap sheet is required when heat welding, or, alternately, apply the IKO Mod-Bit Primer to the granulated area to be repaired.
- B.** Use the following procedure to detect and repair deficiencies in the membrane side and end laps:
1. Any side or end lap that does not exhibit the required minimum flow of bituminous compound must be evaluated to ensure complete bond. For any deficient lap bond areas, effect repairs as outlined below.
 2. Preheat a round nose trowel and insert the hot trowel into the lap. Direct heat into the void while using the trowel to separate the membrane layers.
 3. When flow begins to occur, press the layers together and trowel the lap area to achieve lap sealing.
 4. If the membrane reinforcement is exposed during repair, follow these steps for repair:
 - a. From a scrap piece of modified bitumen membrane, heat the surface to obtain some coating compound;
 - b. Gather the liquified coating compound with a trowel;
 - c. While still liquified, spread it evenly over the exposed reinforcement area; and
 - d. Finish the repair area to suit (e.g., broadcast loose granules, apply roof coating, etc.).

15.02.1 Built-Up Roof Repair Using Modified Bitumen Sheets

- A.** Use the following procedure to detect and repair deficiencies in the membrane application:
1. Any unsealed wrinkle or fishmouth must be cut so that the sheet lies flat and does not create a hump or void.
 2. Prepare the area by removing stone ballast and cleaning the membrane surface thoroughly.
 3. Target patches are installed using two layers of modified bitumen membrane such that the first patch extends a minimum of six inches (6") (150 mm) past the deficiency in all directions and the second patch layer, centered over the first, extends a further two inches (2") (50 mm) in all directions.
 4. The first target patch must be fused to the existing membrane using the appropriate option of hot asphalt, cold adhesive, or heat fusing. Note: Heat fusing of the first target patch layer to exposed organic felts or other combustibles is a fire risk and, therefore, is not recommended. The second target patch layer is fused to the first patch using a similar appropriate option.
 5. Complete the target patch area with appropriate surfacing.

15.03.1 Roof Walkways

- A.** On commercial roofs subjected to regular rooftop foot traffic, IKO recommends the use of an additional layer of roof membrane to absorb the abuse.
- B.** Walkways are recommended at all access points such as hatches, doorways, ladders, etc., and to/from, and around rooftop equipment that is serviced more frequently than once per month.
- C.** Walkways can be an additional layer of cap sheet, which is fully adhered and installed in the same fashion as the roofing system cap sheet by heat-fused, hot asphalt, or cold process.
- D.** Walkway sections should be no longer than ten feet (10') (3 m). Leave approximately four inches (4") (102 mm) between each section to permit drainage.

- E. IKO recommends that the walkways be identified by some means such as painting with a compatible coating or by using a membrane with different color granules.
- F. It is the responsibility of the building owner to direct roof traffic to roof walkways.
- G. Elevated walkways (with sleepers) should have a sacrificial layer of membrane underneath each sleeper to protect the roof membrane from damage due to movement.

15.04.1 Sheet Metal Flashing Installation Work

- A. Metal components shall be isolated from the roofing and flashing components of the roofing system to prevent the expansion and contraction of the metal from splitting the membrane or flashing.
- B. IKO is not responsible for damage to the roofing or flashing membrane caused by the movement of the metal components.
- C. Metal flashing flanges must be completely supported by wood nailers, which are ultimately attached to the building structure.
- D. Metal flanges for drip edges or gravel stops shall be a minimum of three and one-half inches (3 1/2") (90 mm) wide, overlap a minimum of three inches (3") (76 mm), and fastened four inches (4") (102 mm) on the center to wood nailers. All metal flashing overlaps shall be coated with an IKO Asphalt Primer.
- E. All the metal fixtures incorporating a flange must be set in a place adjacent to the base sheet with an appropriate target patch sealing the flange into place. The metal flanges shall be primed on sides intended to receive a membrane patch.
- F. Metal flashing shall be coated steel to a minimum thickness of twenty-four gauge (24 ga.) (0.71 mm) or alternate materials approved by the architect, engineer, roofing professional, or building owner.
- G. Install all metal flashing as specified in applicable details. Refer to the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) for specifics not addressed in this section.
- H. All metal flashing that comes into contact with the asphalt or other bituminous materials shall be primed with an IKO primer.

- I. Fasteners shall be of the same type of metal as the metal flashing material. Metal counterflashing shall have a minimum four-inch (4") (100 mm) vertical face with a minimum one-half inch (1/2") (12.7 mm) thirty degree (30°) bend drip lip. The bottom edge of the metal counterflashing shall cover the top of the membrane flashing a minimum of four inches (4") (100 mm). Metal counterflashing shall be fastened twelve inches (12") (300 mm) on the center, and the skirt fasteners must be watertight.
- J. All piping, such as gas lines or conduit, must be set on wood blocking or other acceptable support. The acceptable support must be set on a loose layer of modified bitumen cap sheet that is a minimum of two inches (2") (50 mm) larger than the acceptable support in all directions.

15.05.1 Temporary Closures (Night Seals)

- A. While the roof is under construction, temporary closures must be used to protect the finished roof system from the infiltration of water during inclement weather.
- B. The temporary tie-in material shall extend at least twenty-four inches (24") (610 mm) past the last course of insulation. The tie-in area must be clean, smooth, dry, and free from debris or contaminants. Install a continuous application of asphalt or roofing cement on to the substrate and the tie-in material. Embed the tie-in material into the asphalt or roofing cement and apply continuous compression over the length of the tie-in. If the temporary tie-in must remain more than overnight, then it must be checked daily to confirm that it has remained sealed.
- C. Temporary tie-ins must be completely removed before continuing the installation of the new roofing system.

15.06.1 Test Cuts

- A. IKO does not recommend destructive test cuts. However, should test cuts be required, then the cuts shall be taken before the final surfacing is applied so that proper repairs can be accomplished. IKO recommends that the ASTM procedures D 2829 and D 3617 be used if test cuts are deemed necessary.

End of Section