Thermoplastic Single Ply and Multi-Ply Roofing & Waterproofing Systems

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FLEX MEMBRANE THERMOPLASTIC ADHERED ROOF MEMBRANE INSTALLATION GUIDE

This guide is intended to be a point of reference in assisting the Flex Authorized Applicator with installing the Flex Thermoplastic Roof System in accordance to the basic requirements of current Flex Details and Specifications for acceptance of the installation for a roof warranty application.
The installer should always refer to the project specifications for details and application requirements for each unique roof system installation.

1.0 Substrate Preparation

Defects in the substrate surface must be reported and documented to the Building Owner's Representative for assessment. The roofing contractor shall not proceed with the roof system installation until the defects in the substrate have been corrected.

A.) **Recover or Retrofit Roofing Applications**: The project specifier shall identify damaged or wet insulation areas. The insulation as indicated shall be cut out and removed from the roof area. The removed insulation shall be replaced with new insulation of the proper size to fill the space (flush with existing surface±1/4") and obtain a relatively smooth surface acceptable for the installation of the new roof system.

B.) **Existing Single Ply Roof Membranes:** If the existing membrane is to be left in place it must be cut into sections no larger than 100 square feet per each section. All flashing must be removed at the perimeter edge, roof drains and roof penetrations.

C.) **Gravel Surfaced Built Up Roofing:** The loose gravel must be removed either by vacuuming or power brooming. The surface must be leveled to prevent the insulation or recover board from bridging.

D.) **All Projects:** The substrate must be smooth and relatively even without high spots or depressions. Any accumulated water, ice or snow must be removed to prevent the absorption of moisture in the new roofing components and roofing system. The substrate shall be clean and free from debris and any other foreign material.

E.) **Lightweight Insulating Concrete:** Flex FB membranes may be adhered directly to approved cellular or perlite insulating concrete. The insulating concrete deck must have a minimum compressive strength of 225 psi.

F.) **<u>Vapor or Air Barrier Installation:</u>** Install the barrier in accordance with the manufacturer's written instruction and the project specifications for the installation of the specified product.

1.1 Wood Blocking

A.) Install wood blocking as indicated by the project specifications and in accordance with current Flex Details and Specifications. Blocking is always required at roof edges and roof penetrations.
B.) The wood blocking is installed so the top of wood is flush with the top surface of the roof insulation or cover board.
C.) The wood blocking width is to exceed the width of flange to be attached to the blocking.
D.) The securement of the blocking shall be in a manner to meet or exceed the local building code requirements and the wind uplift pressure resistance required in the project specifications.

1.2 Insulation/Recover Board

A.) Only install as much insulation or recover board that can be covered with roofing membrane and be made watertight in the same day.
B.) Insulation/recover boards are to be installed butted together with no gaps larger than ¼" in the joints acceptable. Gaps in the joints larger than ¼" must be filled.
C.) Top surfaces of the insulation/recover boards are to be aligned and flush with each other. Differences in the top edge alignment greater than 1/8" are not acceptable.
D.) Insulation/recover board that is to be installed in multiple layers must have the joints staggered a minimum of 6" between each layer.
E.) Insulation /recover board is mechanically attached to the roof deck with Flex Fasteners and Insulation Plates.
F.) Insulation/recover board is adhered to an approved roof deck with Hot Steep Asphalt or Flex Insulation Board Adhesive.

1.3 Restrictions

A.) Precautions must be taken when installing materials with Hot Steep Asphalt in temperatures lower than 40°F. The hot asphalt must be delivered to the application point at the asphalt manufacturer's recommended EVT.

B.) Adhesives and sealants must be protected when ambient temperatures are lower than 40°F. Insulated, heated storage boxes must be provided to store the products on the roof for temporary storage.

C.) Insulation and underlayment must be stored in a manner to keep the products dry and protected from the elements. The products must be stored off the roof surface on skids and covered with a breathable watertight cover.

2.0 Adhered Membrane Placement and Securement

A.) The substrate must be clean and dry prior to installing the Flex Roof Membrane.

B.) Position Flex Roof Membrane over the acceptable substrate. It is recommended to place the sheets in a manner to install the membrane in the longest lengths possible. It is also good practice to lay out the membrane sheets in a shingle fashion so that the seams are not placed in position to buck the flow of water to the drain.

C.) Fold the one end of the sheet back so half the underside of the membrane is exposed.

D.) Apply the approved Flex Membrane Adhesive to the substrate and pull the membrane into the adhesive. Consult the Flex technical data sheet for the adhesive for the recommended coverage rate. (Coverage rates may vary with various substrates).
Flex FB Elvaloy or FB TPO membranes may be adhered with hot steep asphalt.
Apply hot steep asphalt as an adhesive at the asphalt manufacturers recommended EVT.
In cold weather application do not apply asphalt more than 3' in front of the membrane without placing the membrane into the asphalt.

E.) Pull and roll the membrane into the adhesive without wrinkling the membrane.

F.) Repeat the process with the other half of the sheet.

G.) Roll the membrane with a roller (200 lb. minimum) to embed the membrane into the adhesive and remove any air pockets.

H.) Position the adjacent membrane sheet over the selvedge edge of the underlying sheet. The edge must over lap over the length of the underlying membrane a minimum of 3" to insure an adequate 1.5" hot air weld.

I.) Fleeceback Membranes. The ends of the membrane are trimmed to butt together and are completed by hot air welding Flex 6"trim strip over the ends. The trim strip is to extend a minimum of 1.5" past the selvedge edge.

2.10 Field Membrane Securement

A.) Hot air weld the seam and continue in sequence installing the remainder of the sheets across the roof area.

B.) Mechanical securement must be provided at the perimeter edge of each roof level, roof section, expansion joint or roof divider.

C.) Cold adhesive installations or installations in high velocity wind zones may require additional securement at all roof penetrations and curbs, adjacent walls and at any angle change where the slope exceeds 2:12.

D.) All seams must be completed by hot air welding the same day they are installed. Thoroughly probe the seams with a seam probe and repair any voids or defects discovered.

3.0 Flashing

A.) General Flashing Conditions
Flex Reinforced Flashing Membrane is to be installed for the flashing of parapet walls, roof equipment curbs, expansion joints and roof dividers, and for most other roof detail flashing areas. Flex non reinforced flashing membrane may be used for those details where the use of pre-formed accessories cannot be installed such as certain pipe penetrations, corners, and scuppers details.

1. Reroofing Flashing Conditions. Existing flashings must be removed prior to installing the new Flex Flashing Membrane.
2. Termination Bar, surface mounted reglet, or surface mounted counter flashings must be installed directly to the wall surface.

B.) Application

Adhere the flashing membrane to walls, curbs and other vertical surfaces with Flex Flashing Adhesive. The Flashing Adhesive is applied to both the membrane and the surface to which it is bonded. The coverage rate is dependent on the type of substrate but should average approximately 60 square feet per gallon for both the membrane and the substrate. The flashing adhesive is allowed to dry until it is tacky and the flashing membrane is rolled into the adhesive.

1. Complete all seams of the flashing membrane by the hot air welding method.
2. Refer to the current Flex Membrane installation for applicable detail requirements.

4.0 Accessories

A.) Walkway Pads

1. Install walkway pads in those locations as designated in the specifications.
2. Thoroughly clean and prepare the area of the roof membrane that is to be hot air welded to the walkway pad.
3. The Flex Walkway Pad is installed in maximum lengths of 10'.
4. Position sections of the walkway pad to leave a space between adjacent sheets approximately 2" wide.
5. Do not cover field seams with the Walkway Pad. Position the pads to leave minimum 4" wide are exposed at the field seams.
6. Hot air weld all four sides of the walkway pad to the field membrane.

B.) Pavers

1. Either a protection sheet of Flex MF/R Flashing Membrane or Flex 180N Geotextile Separation Layer must be installed under all concrete paver blocks.

5.0 Night Seal

A.) The new roof membrane must be sealed at the end of each work day to prevent water infiltration.

B.) The membrane may be temporarily sealed by securing the down slope edge with roof cement, hot asphalt, spray urethane foam or similar water blocking materials.

C.) Embed the membrane into the sealant product and insure continuous contact.

D.) The following day when the installation is resumed cut away and discard the membrane where the night seal was applied before continuing with installing the adjoining section.