



INSTALLATION GUIDE

MEL-DEK™ BRIDGE MEMBRANE

This document has been created as an addendum to the MEL-DEK technical data sheet to provide the recommended procedure to use when installing MEL-DEK bridge deck membrane from W. R. MEADOWS. The guide will cover recommended tools to use, deck preparation before membrane installation, the membrane installation, and the procedures to follow when placing the asphalt wearing course on the membrane.

TOOLS RECOMMENDED

Application tools or equipment to apply the adhesive. (See adhesive application section.) Material can be applied with a medium nap lambswool paint roller.

- Utility knife
- Chalk Line
- Stiff Bristle Broom
- 6' (1.8 m) broom handle or equivalent
- 1.5" (38.1 mm) or 2" (50.8 mm) margin trowel
- Medium nap (3/8" – 1/2") lambswool paint roller
- Tape measure
- Gloves (solvent-resistant)
- Screwdriver
- Small diamond point trowel
- 35 lb or heavier Linoleum Roller
- Hammer
- Rags
- Cleanup solvent similar to xylene or toluene or SEALTIGHT CLEANER or SEALTIGHT SOLVENT from W. R. MEADOWS

The above tools are enough to perform a proper installation; however, more tools may be used during installation.



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W. R. MEADOWS MATERIALS NEEDED

- MEL-DEK Bridge Deck Membrane
- MEL-PRIME, MEL-PRIME N.E, or MEL-PRIME W/B adhesive
- DETAIL STRIP from W. R. MEADOWS
- POINTING MASTIC from W. R. MEADOWS
- BEM or HYDRALASTIC 836 from W. R. MEADOWS
- MEADOW-CRETE GPS
- MEADOW-PATCH 20 from W. R. MEADOWS

PACKAGING AND STORAGE

MEL-DEK is packaged in a box that provides protection from ultraviolet light during storage. However, it is recommended that the product be stored in a cool, dry place away from direct sunlight. Storing the membrane in the sun on a hot day may make the membrane very sticky and hard to work with. On cooler days, the membrane can be kept in the sun to enhance the tackiness. MEL-PRIME, DETAIL STRIP, and POINTING MASTIC should be stored in a cool, dry place until time of use.

DECK PREPARATION

MEL-DEK can be placed over many types of new or old deck surfaces. The decks can be concrete, asphalt, timber or steel. The basics are the same for most. If a particular deck type calls for something different, the proper procedure will be explained.

DECK TYPES

1. New concrete decks must be properly cured before membrane is applied. That curing time will be a minimum of 14 days or otherwise, as specified by the engineer. The surface texture must be smooth enough [less than 1/4" (6.4 mm) grooves], so that tenting of the membrane does not occur. Remove all traces of contaminants that will adversely affect the adhesion of the membrane. This would include any curing compounds that have been used.



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2. Old concrete decks must be in good structural shape. Remove all sharp projections, repair all broken concrete, and fill cracks and holes over 1/4" (6.4 mm). Use MEADOW-CRETE GPS or an approved equivalent patching material, and proper patching methods to accomplish a long-term, successful waterproofing job.

3. Old concrete decks with a membrane and asphalt overlay will require that the existing systems be removed prior to MEL-DEK being applied. All of the old membrane must be removed, exposing the concrete deck. If milling is used to remove the old asphalt and membrane, a surface with less than 1/4" (6.4 mm) grooves needs to be left so the membrane does not tent over the deck surface. If the milled surface is not smooth enough, then a thin scratch/leveling course of asphalt using 1/8" (3.2 mm) to 3/8" (9.5 mm) aggregate can be used to provide a surface that is acceptable for membrane installation. This levelling course is to be compacted and cooled for a minimum of 6 hours prior to placement of the membrane. The leveling course needs to be adhered solidly to the existing deck prior to membrane installation. No solvent based adhesives shall be used over the asphalt scratch/levelling course. Alternatively, a cementitious patching overlay material can be used. If this option is utilized, MEL-PRIME is required to be used prior to installation of MEL-DEK.

4. Asphalt bridge decks are not common. If you encounter one, please call W. R. MEADOWS technical services at (800) 342-5976 for assistance.

5. Steel bridge decks require waterproofing. If the deck is new, the steel surface will require a scratch/leveling course of asphalt applied to it. If the deck is old with a waterproofing system already installed, some or all of the old system needs to be removed and a scratch/leveling course must be placed. It is not recommended to mill the old material all the way to the steel because the cutters will gouge the steel, causing sharp protrusions that can puncture the membrane. The scratch/leveling course will cover any fasteners that hold the steel deck in place and/or provide a good surface for the membrane to bond to. MEL-PRIME will not be required over the scratch/leveling course.

6. Laminated Treated Timber Decks requiring waterproofing. Depending on the chemical used to treat the timbers, MEL-DEK may be used. Check with the timber manufacturer for compatibility of the membrane with the chemical used to treat the timbers. Use a MEL-PRIME adhesive prior to placement of the membrane.

Note: It is not necessary to apply MEL-PRIME ADHESIVE to any asphalt surface that is less than one year old. This includes scratch/leveling courses that have been applied. Surface must be clean prior to application of MEL-DEK.



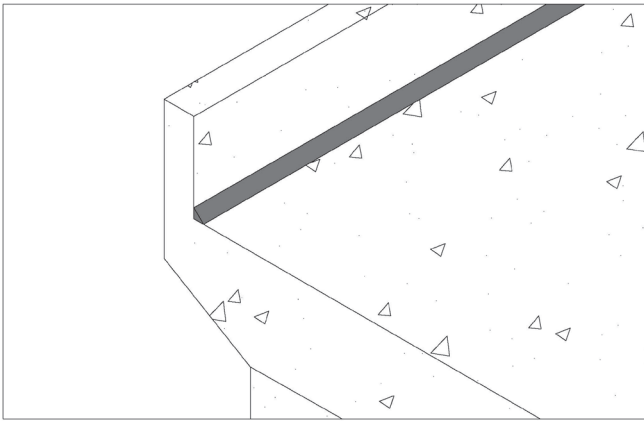


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INSTALLATION

MEL-PRIME ADHESIVE APPLICATION

Apply MEL-PRIME adhesive to all surfaces to receive MEL-DEK or DETAIL STRIP at a coverage rate of approximately 250-350 square feet per gallon. Allow adhesive to dry until tack-free. Areas that are not covered with membrane within 24 hours must be re-applied.



W. R. MEADOWS offers both water-based and solvent-based adhesives that are VOC-compliant. The major difference between the two is that the solvent-based adhesives will tack up quicker than the water-based adhesives. The adhesives need to be tacky in order for the membrane to adhere properly. Please read the appropriate product data sheet for the application procedure. The drying time varies dependent on the amount of moisture in the air and the temperature. These variables will speed up or slow down the drying time.

Note: Do not apply membrane to adhesive that is not dry.

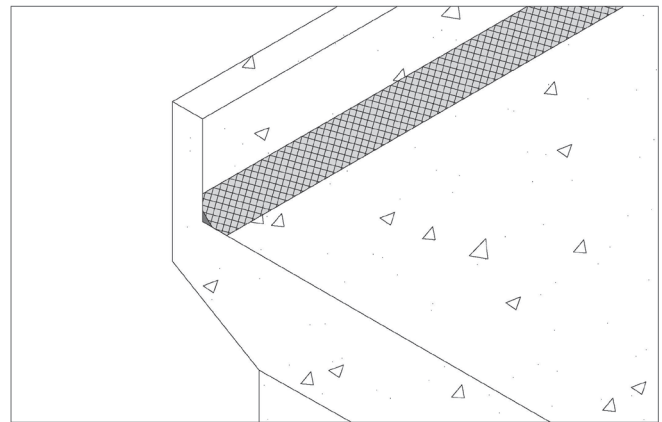
JOINTS AND SLAB DRAINAGE

Apply a reinforcing strip of DETAIL STRIP from W. R. MEADOWS over all non-working joints or cracks over 3/16" (4.76 mm) wide before applying finished membrane. Seal terminations of MEL-DEK with POINTING MASTIC by W. R. MEADOWS. Deck surface must provide proper pitch to gutters and drains. Drainage openings should be provided at the structural deck level to drain any water that penetrates the asphaltic concrete surface.

EDGE JOINT TERMINATION

1. Preparation of the transition from the concrete deck to the curb (horizontal to vertical transitions) needs to be addressed. A chamfer material may need to be applied to give solid backing to the detail strip. This backing can be a cement and sand mortar mix, such as MEADOW-PATCH® 20 repair mortar from W. R. MEADOWS. Alternatively, BEM, or POINTING MASTIC can be utilized. Form a 45° slope between the vertical and horizontal planes.

2. Strike a chalk line at the top of asphalt elevation. Apply one of the adhesives from the chalk line out across the deck with medium nap lambswool roller.



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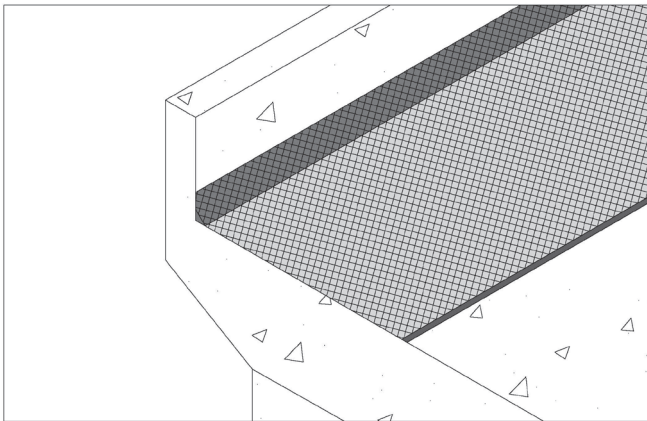


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3. After the adhesive has dried to a tack-free condition, DETAIL STRIP should be applied to the curb face from the lowest point on the bridge and other protrusions at this time. Fold DETAIL STRIP at the vertical height and remove the backing. Carefully place DETAIL STRIP and smooth it out using hand pressure or a brush. Try to avoid wrinkling and forming air bubbles. Seal terminations of MEL-DEK with POINTING MASTIC by W. R. MEADOWS.

MEL-DEK MEMBRANE APPLICATION

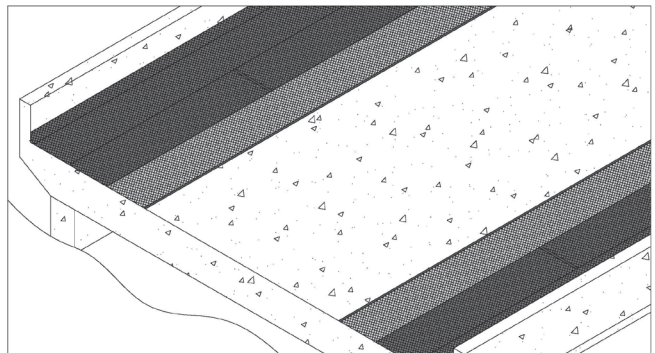
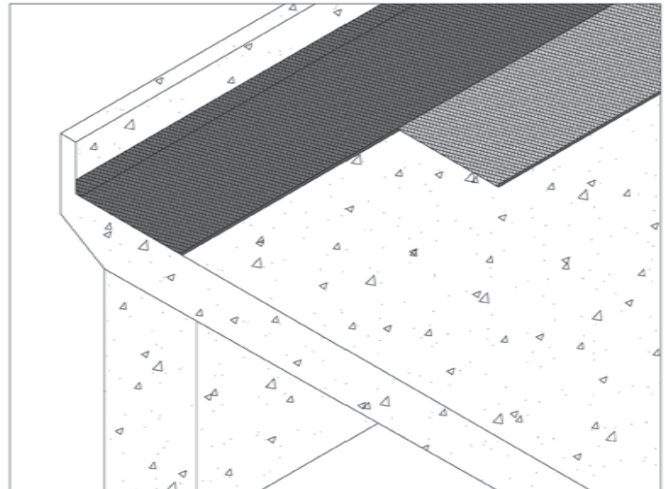
1. Application of the membrane can start once DETAIL STRIP and adhesives are in place and dry. On crowned deck surfaces, place the membrane



sheets from low point to high point in both the longitudinal and transverse directions. On flat deck surfaces, start at one curb and proceed across to the other. Measure the width of the deck (in feet) in at least three places and divide the widest number by three feet (the width of a sheet minus the overlap) to get the number of sheets it will take to cover the deck width.

2. Once you have decided the number of runs that it takes, put a chalk line 38 1/2" (977.9 mm) from the curb. The first sheet should be as straight as possible to allow the following rows to lay easily. Start the roll laying the strip edge release on the chalk line.

3. The manual placement of the membrane requires four people. One person holds the beginning of the roll in place at the beginning of the deck. Two workers roll out the membrane using a broom handle or similar device, guiding the edge so that it follows the chalk line. The fourth person will remove the release film from the bottom. That person pulls the film off at a 45° angle to the placing direction. This helps keep tension on the membrane as it is laid, minimizing the wrinkles.



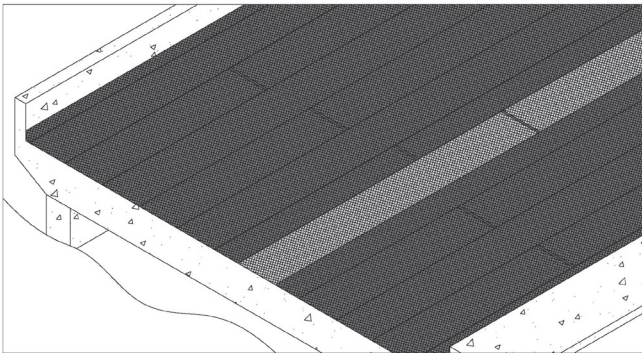


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Once the roll is down, the first person needs to push the membrane into good contact with the deck using a push broom or a hand/push roller. It is important not to trap air under the membrane and to work out all air that may be trapped.

4. If more than one roll is needed to cross the deck, start the second roll overlapping the first roll by 6" (152.4 mm).

5. Once the first row of membrane is completed, start the second, overlapping the leading edge of the first row in shingle fashion 2 1/2" (63.5 mm) after removing the polyethylene strip that exposes the 3/4" (19.1 mm) rubberized asphalt. Use the edge of the release film as your guide. Do not remove the release film until the complete roll is in place on the deck. Start at one end of the roll and pull the release film from between the overlapped rolls.



6. The longitudinal joints must be staggered and overlapped a minimum of 6" (152.4 mm).

7. Continue to place rows until the crown of the bridge is reached. If the bridge is closed completely then start laying membrane from the opposite curb

to the crown. Overlay the two sides with a center strip as a house roof is overlapped at its peak. If the bridge must be opened to traffic on one side before the other side can be waterproofed, then leave a minimum of 8" (203.2 mm) of membrane sticking out from the asphalt. When overlapping longitudinal seams that do not have a 2.5" (63.5 mm) selvage edge, allow 6" (152.4 mm) of overlap to ensure a good seal. This longitudinal joint must be pointed with POINTING MASTIC prior to asphalt placing.

8. Once all the membrane is in place, or all the membrane for that day, remove the plastic strip from the transverse edge (if not previously removed) and roll the joints with a hand/push roller or stiff broom. Next, as previously stated, seal all the transverse joints (if required by DOT) and any longitudinal ones at crown. The sealing of all exposed joints, terminations, including the ends of the rolls, along the curb line and tops of protrusions must be done at the end of the day to prevent possible leaking under the membrane if it should rain.

9. Patches: There is always a chance to trap a small stone under the membrane when placing it. The stones must be removed so that they do not puncture the membrane when the asphalt is placed. To remove the stone, make a "C" shaped cut around the stone. Peel back the membrane, remove the stone, then push the membrane back into place. Cut a 6" x 6" (152.4 mm x 152.4 mm) patch from a piece of membrane to cover the cut. Apply some MEL-PRIME adhesive and allow it to set up to a tack-free consistency. Place membrane patch over





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the cut, roll or brush, and then seal the patch edges with POINTING MASTIC. Similarly, air bubbles, nicks, gouges, rips, tears, etc. are repaired using the same procedure.

Note: In the event, there are wrinkles in the membrane following installation, anything over 1/2" needs to be addressed. To accomplish this, cut out the wrinkle and following the same patching procedure as above.

10. The Asphalt Overlay (minimum 2" compacted thickness) needs to be applied as soon as possible after the membrane installation to avoid damage to the membrane. The asphalt temperature, at point of placement, needs to be above 290° F (143.3° C) and less than 340° F (171.1° C). All areas need to be compacted to specification to develop a bond between the asphalt and membrane. A compatible

tack coat must be applied to the membrane surface prior to the placement of the asphalt overlay. The reason for this tack coat is to address potential concern with decreased asphalt content in overlays that is essential for good adhesion to the membrane. In the event of rain, the membrane surface must be dried prior to asphalt placement.

Minimize the paving equipment turning on the membrane, which may cause damage. It is preferable that paving equipment have flat tracks or pneumatic tires to limit the potential of membrane damage.

This covers the entire general requirements for MEL-DEK membrane installation. If you have any questions on the guideline or on an issue not covered, please contact W. R. MEADOWS technical services at (800) 342-5976 or contact your local W. R. MEADOWS representative.

