

**TENCATE® MIRAFI  
MTK WATERPROOFING MEMBRANE**

**INSTALLATION GUIDELINES FOR  
JOINTS, CRACKS and BRIDGE DECKS**

Prepared by:

TenCate™ Geosynthetics North America  
365 South Holland Drive  
Pendergrass, GA 30567  
Tel. (706) 693 – 2226  
Fax (706) 693 – 2044  
[www.tencate.com](http://www.tencate.com)

January 9, 2014

## **SECTION 1- INSTALLATION GUIDELINES FOR PAVEMENT CRACKS AND REPAIRS**

### **MATERIAL DESCRIPTION**

TenCate® MTK is a unique, very cost effective waterproofing and stress relief membrane comprised of self-adhering rubberized asphalt and durable polypropylene non-woven paving fabric. A release paper, which is removed prior to placement, covers the self-adhesive mastic and provides for easy installation. The material is a minimum 65 mil in thickness. TenCate® MTK prevents surface moisture intrusion and delays reflective cracking. The material is roll packaged in boxes with the following dimensions:

- 12" x 200'
- 18" x 200'
- 24" x 100'
- 36" x 50'

12" and 24" will cover 200 square feet, 18" will cover 300 square feet and 36" will cover 150 square feet of surface.

### **Applications**

- Longitudinal and transverse joints
- Alligator cracks (fatigue cracks)
- Bridge and Parking Deck Waterproofing

### **Equipment**

No unique or special equipment is required for installing TenCate® MTK. Utility knives work well in cutting the membrane and release sheet.

### **Surface Preparation**

Existing pavement surface must be cleaned of all loose dirt and debris and be dry. Cracks wider than 3/8-inch should be filled with suitable crack filler. Severally spalled or other distressed areas must be repaired according with accepted paving practices. Portland cement concrete pavement slabs should be stable. Excessively subsided joints or faulted joints should be repaired by applying a thin hot mix leveling course. If a leveling course is used, crack sealing is not necessary. Note: Commercial crack filler expands under the heat of an overlay and therefore the crack should be filled level or just below the existing pavement surface.

### **Primer**

Surface shall be primed as follows. Primer must be used on all concrete and milled surfaces. On old asphalt surfaces (not milled), primer is not needed if temperatures are 70°F and rising. On new asphalt surfaces, primer is not needed unless temperatures are too cool to obtain a good bond between membrane and pavement. This can occur with surface temperatures between 40° and 50°F. The liquid adhesive shall be placed on the surface, at a minimum rate of 400 square

feet per gallon (250 square feet per gallon on milled surfaces). The primer must be completely dry prior to application of the membrane. Any suitable priming material composed of refined asphalt and rapid drying solvent may be used. It is recommended that *POLYGUARD 650 RC LIQUID ADHESIVE* or equal be used (which has been tested for compatibility with TenCate® MTK); meeting ASTM D41, which is a solvent based liquid adhesive. Primer may be applied using brushes, rollers or by spraying at the prescribed rate of application. Never apply primer to wet or frozen surfaces. Areas primed and not covered with membrane within 24 hours should be re-primed. Smoothness and porosity of existing asphalt and or concrete surface may affect coverage rate. Do not apply liquid adhesive at heavier rates than recommended. Excessive material build-up will delay drying and membrane application

**Temperature:** The surface temperature should be 45° F and above when installing TenCate® MTK. Storage temperature should not exceed 125° F.

**Slope Considerations:** Asphalt pavements are more prone to shoving and shearing on steep grades especially in areas of stopping or sharp turning. TenCate® MTK can be installed on grades with slopes up to 10% on normal pavement conditions. If there are concerns of existing pavement surface, overlay thickness, asphalt mix traffic volumes or construction procedures please contact TenCate® Geosynthetics Americas or your local distributor.

### **Installation**

Center the roll over the joint or crack to be treated with the release paper attached. Allow for a material overrun of 2 to 3 inches beyond each end of the crack to ensure a waterproof seal. Cut the membrane with utility knife. Install the TenCate® MTK by removing release paper.

In the case of Portland cement concrete, transverse joint strips shall be applied before longitudinal joint strips to minimize the chance of the membrane peeling. On longitudinal joints allow 2 to 3 inches overlap in the direction of traffic. Material should be laid smooth and adhere well to the existing pavement by rolling the membrane with a pickup truck or pneumatic roller. A stiff broom can also be used to aid adhesion.

### **Trafficking**

Limited traffic will not damage TenCate® MTK membrane and can be opened to construction traffic. However if local conditions require that traffic should be permitted and in the judgment of the engineer that safety is not issue, the pavement with the membrane can be opened to traffic. Signs should warn motorists that the driving surface might be slippery when wet and speeds reduced accordingly. In all cases where the membrane will be exposed to vehicular traffic, primer **shall** be used to ensure adhesion to the underlying pavement surface.

### **Application of Overlay**

**Tack coat:** A standard prepaving tack coat is applied over the TenCate® MTK and the remaining portion of the surface before placing the hot mix asphalt layer.

**Overlay Thickness:** A minimum compacted thickness of 1-1/2 inches is recommended.

### **Repair of localized distressed Areas**

TenCate® MTK can be used as a preventive maintenance tool on locally distressed pavement areas such as alligator-cracked areas and patched potholes in parking lots, streets, highways, and on any other paved area.

**Preparation:** Pavement surface to be treated should be clean and dry. Localized areas of base failure and alligator cracking may in some cases require base repairs and a leveling course prior to installation. This is an engineering or “best-practice” judgment. Potholes should be repaired using procedures recommended by Asphalt Institute. A leveling course may also be required where grooves in a milled pavement have rough vertical surfaces; however TenCate® MTK can be installed over a finished milled surface.

**TenCate® MTK Placement:** Position the roll, with release paper attached over the distressed area. Allow at least 4 to 6 inches additional material for overlapping sound pavement adjoining the patch.

Unroll membrane by removing the release paper.

Allow 2 to 3 inches overlap if adjacent panels are required to cover the distressed area.

Roll the membrane to ensure adhesion to the existing surface.

Note: For cold weather patching, the surface area to be patched may be heated with a torch to assist with adhesion. The mastic side of the TenCate® MTK may be lightly warmed also.

### **Paving Operations**

Place a standard paving tack coat over the membrane and pavement. The use of a cutback is not recommended. The use of vibratory rollers is not recommended over the areas where the membrane has been installed. This is generally resolved by slowing the roller to reduce the shear forces and using a static roller on the secondary passes. It may be appropriate to wait for the hot mix to cool at the lower levels of acceptable compaction temperatures.

### **Storage and Handling**

It is recommended that the product be stored in a cool, dry place away from direct sunlight. Storing membrane in the sun on a hot day may make the membrane sticky and hard to work with. On cooler days, exposure to sunlight will assist in softening the material to assist in installation. Long-term storage should be indoors at temperatures < 125° F.

## **SECTION 2- ADDITIONAL INSTALLATION INSTRUCTIONS FOR BRIDGE / PARKING DECKS**

### **INSTALLATION**

#### ***PRIMING:***

- When substrate is ready, apply Polyguard (or equal) *650 RC Liquid Adhesive* at a rate of 400 square feet per gallon (250 square feet on milled surfaces).
- Never apply *650 RC Liquid Adhesive* to wet or frozen surfaces.
- Allow primer to dry

- Prime only the area which can be covered with membrane in the same working day. Areas primed and not covered with membrane within 24 hours should be re-primed. Smoothness and porosity of the concrete will affect coverage rate.
- Do not apply liquid adhesive at heavier rates than recommended. Excessive material build-up will delay drying and membrane application.

#### **MTK MEMBRANE INSTALLATION - HORIZONTAL SURFACES:**

- At curbs, posts or projections, apply a double layer of MTK membrane going out at least 6 inches onto the horizontal, and 2" up the vertical face. Roll membrane firmly into the vertical/horizontal interface to eliminate any air pockets.
- MTK membrane should be applied to the primed surface starting at the low point and working to the high point using a shingling technique.
- Side laps should be a minimum of 3 inches and end laps a minimum of 6 inches.
- The entire membrane should be firmly rolled with a rubber tired asphalt roller or hand roller. This will insure excellent adhesion and minimize air pockets between the substrate and membrane.
- At posts or projections, apply either a double layer of *MTK membrane* going out at least 6 inches in all directions.
- At drains, apply a double layer of MTK membrane.
- Inadequately lapped seams and damaged areas should be patched with small sections of MTK membrane. The patch area should extend at least 6 inches beyond the defect.
- All wrinkles should be slit and overlapped, and repaired as above.
- All inside and outside corners shall be treated with 12 inch strips. The membrane should be placed over the corner treatment. It is recommended that inside corners have a minimum  $\frac{3}{4}$  inch fillet of *LM 95 Liquid Membrane* or latex modified cement mortar.
- Double ply all non-working joints or cracks over  $\frac{3}{16}$ " width with a 6" to 12" piece of *MTK membrane*. *650 Mastic* should be applied to all edges, overlapping seams, and end terminations. The recommended application rates for *650 Mastic* is either:
  - 100 linear feet of a 1" wide bead per gallon, if using material from 5 gallon pails
  - Or
  - at the rate of 65 linear feet per 30 ounce tube, when applying a  $\frac{1}{2}$ " wide bead
- *650 Mastic* should then be worked into the seam with a trowel to insure proper sealing.
- A tack coat of asphalt or asphalt emulsion is applied prior to the bituminous overlay.
- It is recommended that the bituminous overlay be not less than 1.5" in thickness after compaction.
- The use of vibratory rollers over MTK membrane is not recommended.

#### **Note: Polyguard 650 Mastic**

##### DESCRIPTION:

POLYGUARD 650 MASTIC is an asphalt /rubber based mastic which provides excellent adhesion to the MTK membrane, structural concrete, masonry, and wood surfaces. 650 MASTIC (or equal) is recommended to protect the termination edges, overlaps, patches and any additional detailing areas. On vertical applications, 650 MASTIC must be applied on both the bottom and top terminations of the MTK material

##### TECHNICAL DATA: PHYSICAL PROPERTIES TYPICAL RESULTS

Color Black  
Specific Gravity 1.12  
Flash Point (PM Closed Cup) 105EF (41EC)

APPLICATION:

POLYGUARD 650 MASTIC is supplied either in a 5 gallon pail or in a 30 oz. caulking tube. If some material is applied with a caulking gun the bead must be struck with a trowel to insure the 650 MASTIC is worked into the termination edges. If the material is supplied in a pail, it may be applied with either a trowel or by hand using rubber gloves as precautions. When applied as a temporary cut-off, trowel the 650 MASTIC over the membrane in a very thin layer, and allow to cure a minimum of 12 hours before placement of additional MTK membrane. On the bottom edge of any vertical application, 650 MASTIC must be applied liberally to these areas. 650 MASTIC should also be applied around any protrusions, drains, or any areas requiring patching, or specific detailing.

**Disclaimer:** TenCate assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.