

Transportation Safety Division

3M™ Stamark™ Removable Tapes Pavement Surface Preparation and Application Procedures

Information Folder 3.2
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Replaces Information Folder 3.2 Dated January 2014

1 Description

This information folder contains pavement surface preparation and application procedures for 3M Stamark removable pavement marking tapes (“Tape”). It is important that users be completely knowledgeable of all application requirements and procedures prior to product application.

It is the responsibility of the installer to contact the appropriate 3M Sales Representative or 3M Application Engineer for guidance when required. Call 3M Pavement Markings Technical Service at 1-800-553-1380 in the U.S. or at 1-800-265-1840 in Canada.

Tapes are for use in detours or construction work zones. Roads can be opened to traffic immediately after Tape application.

2 Product Application Requirements

2.1 General Conditions

- o The minimum air and pavement temperature for Series 710 and Series 715 is 50 °F (10 °C) and rising.
- o Pavement surface must be clean and dry; no rainfall in the 24 hour period preceding application.
- o Butt splices must be used; do not overlap Tape ends.
- o Do not apply Tape over longitudinal seams or joints.
- o A 3M surface preparation adhesive is required when applying Series 710 under marginal weather conditions (see Appendix A).
- o Prior to Tape application, traffic must be kept off of pavement surfaces coated with surface preparation adhesive.

3 Types of 3M Stamark Removable Tapes

Series 710 pavement marking tape has been designed for temporary use on either old roads or newly resurfaced roads where the it will later be removed. When Series 710 is applied according to 3M application procedures, the use of a surface preparation adhesive is not required. Refer to Appendix A for details regarding conditions that require the use of a surface preparation adhesive.

Removable Black Line Mask Series 715 has been designed to be used to temporarily obliterate existing pavement markings for temporary traffic diversion. 3M surface preparation adhesive is not required for Series 715 installations.

4 Procedure for Applying *Long Lines*

Follow the procedure described below when installing Tape as edge, lane, or channelizing lines. Before application, verify that the application environment meets all of the product application requirements listed in Section 2.1.

Step 1 - Clean road

For new concrete that has been open to traffic for less than 90 days, remove curing compound by shot-blasting, hydroblasting, sand-blasting, or lightly grinding the pavement surface. Use a broom and/or high pressure air blower to clean the pavement surface where Tape is to be applied. (Tape must not be applied to any sealed surface before the sealing emulsion has cured and all loose aggregate has been removed.)

Step 2 - Mark road

Use a 200-250 foot (60-70 m) length of sash, chain, or thin wire cable as a guide for long line applications. When applying Tape as a skip line, mark the skip sequence on the sash chain to be followed by the pointer. Example: Mark sash chain with the proper sequence using 1-inch (2.5 cm) spiral key rings.

Step 3 - Determine if surface preparation adhesive is required

While Series 715 installations never requires the use surface preparation adhesive, some Series 710 installations do. Refer to Appendix A for more information. When required, surface preparation adhesive must be applied when road surface is dry and as illustrated in Figure 1.

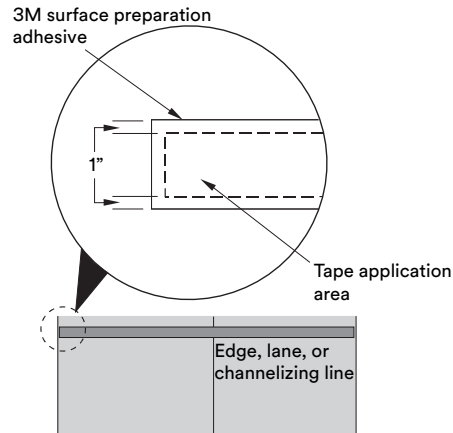


Figure 1. Surface preparation adhesive application area.

If installations requires the use of surface preparation adhesive, proceed to Step 4.

If installation does not require the use of surface preparation adhesive, proceed to Step 6.

Step 4 - Apply 3M surface preparation adhesive

Using a 3M PS-14 Spray Applicator (or a compressed air sprayer), apply a thin, uniform coat of 3M surface preparation adhesive to the pavement. A typical wet thickness for properly applied surface preparation adhesive is 6–7 mil. The applied adhesive should extend at least 1 inch (2.54 cm) beyond the border of the premarked area where the Tape is to be applied. As illustrated in Figure 2, the PS-14 applicator has been designed to spray a 6-inch (15 cm) wide pattern, which is suitable for installing 4-inch (10 cm) wide Tape. Adjust the arm of the PS-14 applicator up or down to deliver a 6 inch (15 cm) wide spray pattern.

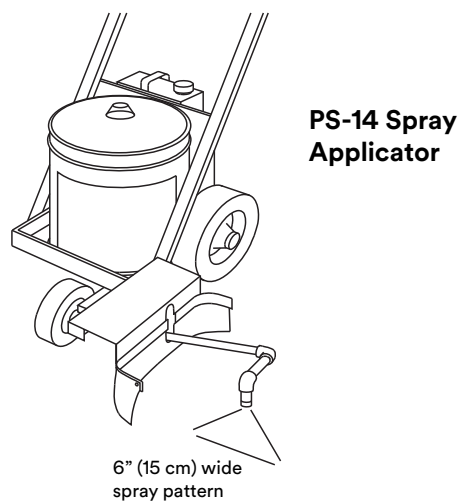


Figure 2. 3M spray applicator PS-14.

If installing Tape more than 4 inches wide, make two passes with the PS-14 applicator. Allow additional time for overlapped spray areas to set. 3M surface preparation adhesive coverage is approximately 450 lineal feet per gallon (36 lineal meters per liter) when applied using a 6 inch (15 cm) wide spray pattern delivered by a PS-14 applicator.

Step 5 - Allow the surface preparation adhesive to set

3M surface preparation adhesives are set when tacky but no longer liquid. Set time depends on climate conditions at time of application. 3M surface preparation adhesive set times are longer at lower temperatures and shorter at higher temperatures. Minimize the distance between the applicator spray nozzle and pavement surface, while maintaining the desired spray pattern, to ensure consistent even setting across the application. Once the surface preparation adhesive has set, apply Tape as soon as possible to avoid contamination.

Step 6 - Apply tape

Apply Tape using a manual highway tape applicator (MHTA) or a highway tape applicator (HTA).

Note: To avoid potential adhesion failures, when installing Tape over a pavement crack or bridge expansion joint, lay Tape over the crack or joint, then cut the Tape one inch away from both sides of the crack or joint, as shown in Figure 3.

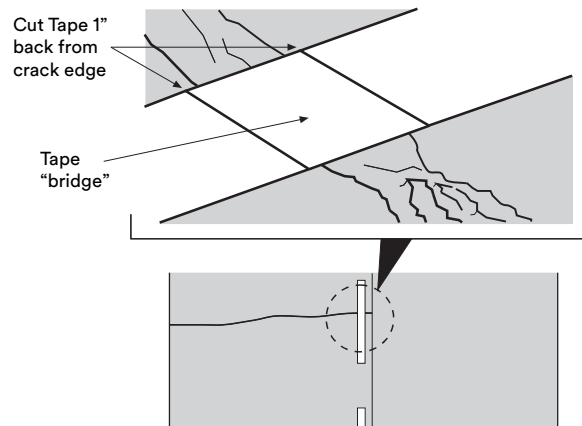


Figure 3. Where to cut Tape when installing over pavement crack or bridge expansion joint.

Step 7 - Tamp tape - VERY IMPORTANT!

Tamp Tape thoroughly using a RTC-2 tamper cart with a 200-pound (90-kg) load, or by slowly driving a vehicle over the Tape three times with the vehicle's tire positioned on the Tape. The vehicle must be equipped with a pointing device to aid in keeping the vehicle tire aligned on the Tape. Make three forward passes along the Tape to achieve proper tamping. Tamp Tape with vehicle tire for long line markings only.

When tamping using a RTC-2 tamper cart:

- o Do not twist or turn the cart on the Tape.
- o Make six passes (three forward and three backward passes) over each part of the Tape.
- o Inspect all edges for firm adhesion to pavement surface.

Proper tamping is essential for proper adhesion!

Step 8 - Open road to traffic

As soon as Tape has been properly tamped, the road may be opened to traffic.

5 Removal of 3M Stamark Removable Pavement Marking Systems

Tapes must be removed before asphalt overlay is installed.

Remove Tapes using the following procedure:

- 1 Always wear gloves and eye protection when removing Tape.
- 2 Pry up the edge of the Tape using a chisel-like tool.
- 3 Pull Tape straight up (at an angle of approximately 90°, relative to the pavement).
- 4 At temperatures below 40 °F (4 °C), Tape may be brittle and difficult to remove in large pieces. In these situations, a small amount of heat may be used to help soften the adhesive.

Note: Neither burning nor grinding is recommended for Tape removal.

6 Storage

Tapes and 3M surface preparation adhesives must be stored in a cool, dry area indoors, kept from freezing, and used within one year of receipt.

7 Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheets (SDS), Article Information Sheets, and products labels of any materials for important health, safety, and environmental information prior to handling or use. When removing Tape, obey all best practices described in the FWHA and State DOT safety guidelines. To obtain SDSs and Article Information Sheets for 3M products, go to 3M.com/SDS, contact 3M by mail, or for urgent requests call 1-800-364-3577.

8 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at <http://www.3M.com/roadsafety>.

9 Literature References

3M IF 5.2	3M™ Highway Tape Applicator (HTA)
3M IF 5.17	3M™ Stamark™ Surface Preparation Adhesive P-50 Instructions for use with 3M™ Stamark™ Pavement Marking Tapes
3M IF 5.21	3M™ Stamark™ Low VOC Surface Preparation Adhesive SPA60 Spray Application Instructions for Bulk Liquid for Longitudinal Pavement Marking Tapes
3M PB 710	3M™ Stamark™ Wet Reflective Removable Tape Series 710
3M PB 715	3M™ Stamark™ Removable Black Line Mask 715

Appendix A: Best Practices

Application of 3M™ Stamark™ Series 710 Removable Pavement Marking Tapes When 3M Surface Preparation Adhesive is Recommended or Required: Marginal Weather Conditions and Marginal Substrates

3M Stamark surface preparation adhesives are used to improve initial and long term adhesion when applying Tapes during marginal weather conditions or to marginal substrates that may prevent Tapes from adhering well to pavement surfaces. 3M surface preparation adhesives can be applied to existing asphalt or Portland cement concrete surfaces.

Marginal weather conditions can include circumstances where:

- The air and pavement temperatures are not expected to exceed the minimum application temperature for 24 to 48 hours.
- Prolonged or heavy rainfall following Tape application is predicted.
- Application is planned for the early spring or late fall, beyond the typical road construction season.

For further details, contact your 3M Application Engineer.

Clean Up

- 1 When finished applying surface preparation adhesive, pull the PS-14 spray applicator backwards 8-10 ft. to draw the surface preparation adhesive back into the container.
- 2 Remove siphon tube from surface preparation adhesive container.
- 3 Insert siphon tube into a can of Acetone or Methyl Ethyl Ketone, place a catch pan under the spray nozzle, and rotate the front wheel until the solvent dispensed from the spray nozzle appears clear.
- 4 Rotate the pump backwards to draw the solvent back into the can.
- 5 If equipped with pump valve, turn it to the horizontal, closed, position.
- 6 Dispose of cleaning solvent according to local regulations and guidelines.

For Information or Assistance

Call: 1-800-553-1380

In Canada Call:

1-800-3M HELPS (1-800-364-3577)

Internet:

<http://www.3M.com/roadsafety>

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Transportation Safety Division

3M Center, Building 0225-04-N-14
St. Paul, MN 55144-1000 USA

Phone 1-800-553-1380

Web 3M.com/roadsafety

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