



Overlay Application Procedure with Extended Season Adhesive 3M™ Stamark™ Pavement Marking Tapes

Information Folder IF OVES UK

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Health and Safety Information

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet (MSDS), and/or product label of chemicals prior to handling or use.

1. General Information

This application manual is designed to assist customers and contractors with applying 3M™ Stamark™ Pavement Marking Tapes with Extended Season (ES) Adhesive and therefore obtain the best durability and performance. It describes the requirements and procedures for application which must be followed to ensure the best possible performance. If a situation is not covered in this folder, then it is the responsibility of the customer working with the 3M tape to contact the 3M Sales or Technical representative for further assistance.

The application of Stamark™ pavement marking tapes with ES Adhesive as overlay in combination with 3M pavement marking equipment provides a durable marking that can be opened to traffic immediately following installation.

Fundamentals of Overlay applications:

- The Overlay application method can be used for concrete, asphalt-concrete, grit-mastic-asphalt as well as drain and open-pore-asphalt. Those asphalts should have a low amount of crushed stones on the surface. The concept is not to be used for melted asphalt and liquid repair asphalt for permanent tape
- Rough surface structures on non-fresh asphalt roads may cause adhesion issues especially in climatic regions that experience large variations in temperature throughout the year (mountainous regions for instance). In these cases the Bitumen Plus application method is recommended.
- Applying on surface on which any kind of impregnation has been applied must be avoided for tape application.

2. Application Procedure

The application consists of 6 steps:

- Check Climate Conditions are suitable for application of 3M Tape with ES Adhesive
- Check Suitability of Substrate (road surface) for application of 3M Tape with ES Adhesive

The application of Stamark™ tapes with ES Adhesive require the following minimum weather conditions. The substrate (road surface) and air temperatures must be 10°C and above. The relative air humidity must be <80% and the substrate must be clean and dry with no rain 48 hours before application.

Stamark™ tapes with ES adhesive can be applied down to 4°C with the use of 3M™ Stamark™ Surface Preparation Adhesive P50. See the relevant information folder for details.

These application conditions are valid for all Stamark™ pavement marking tapes with ES adhesive unless the Product Bulletin refers to other conditions. If one of the above criteria is not fulfilled then the application has a high risk of failure and should be postponed until the weather conditions are within the limits. Ignoring these recommendations might result in rejection of any warranty claim.

If there is a concern regarding moisture on the substrate, the use of the moisture test bag is recommended:

A dark piece of PE-foil is taped to the road surface using a duct tape or pavement marking tape. The tape should seal all the edges and not allow any air movement under the sheet (see Figure 1).

Wait 20 to 25 minutes while the sheet is exposed to direct sunlight. Remove the sheet from the road surface. If there is no moisture present on the backside of the sheet or on the substrate 3M™ Stamark™ Tape can be applied.

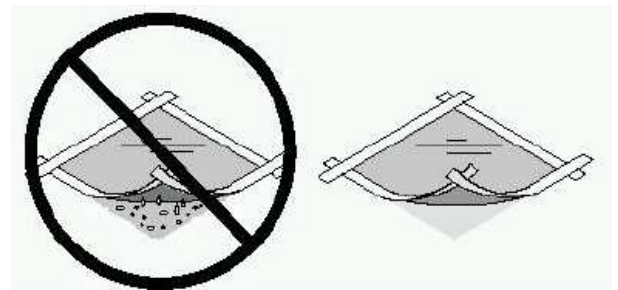


Figure 1: Moisture Bag Test

If moisture is present then allow another hour to pass and repeat the test until no moisture is found. Experience has shown that if moisture is present on the substrate then the tape will not adhere to the surface.

Check the mechanical stability of the road surface. Remove curing compounds of new concrete surfaces by water-jet, sandblasting or mechanical grinding before application of the tape.

If existing markings are to be covered over they should be thoroughly inspected to ensure they are not chalking, flaking or in anyway coming away from the substrate surface. Existing markings that are breaking up or coming away from the substrate should be removed using the above methods.

Test the adhesion before applying the tape.

- **Surface preparation**

The substrate must be free of oil, grease, gasoline, dust, dirt and other substances that could influence the adhesion of the tape negatively. Cleaning the substrate by sweeping or high pressure air will remove loose particles from the surface that would decrease the adhesion.

- **Pre-marking**

The pre-marking process is performed like any other pavement marking pre-marking. Apply the pre-marking in a position that will not be covered by the tape and therefore impact adhesion.

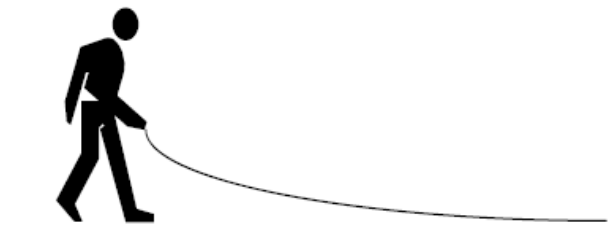


Figure 2: Pre-marking

- **Tape Application**

The 3M™ Stamark™ tape should be applied using 3M™ application equipment. Such equipment includes the manual tape applicator MTA-2. Alternatively the tape can be applied by hand.

When applying pavement marking tape by hand, be careful not to allow the adhesive to touch the substrate until the tape is positioned correctly.

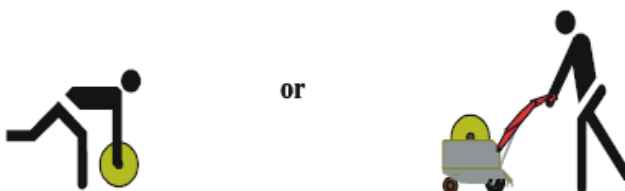


Figure 3: Tape application

All longline applications should be done using the suitable application equipment in order to achieve the best results and productivity.

Note: Avoid stretching the tape!

It is important not to overlap the tape: Use Butt Splices –

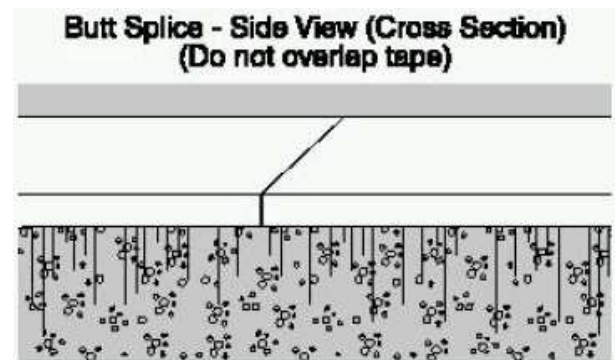


Figure 4: Butt Splices

If there is a crack in the substrate or if the tape is applied over a bridge expansion joint, then cut the tape 2.5cm (1 inch) away from the crack or joint on each side (see Figure 5).

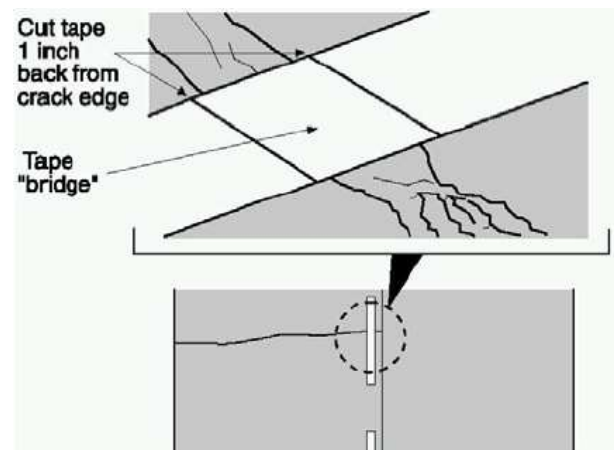


Figure 5: Application on cracks

Note: Avoid application closer than 10cm to the longitudinal asphalt seam

- **Tamping the Tape**

Hand-applied tape needs to be pre-tamped with an RTC-3 tamper cart without the additional weights to avoid wrinkles.

Regular tamping must be done with the RTC-3 tamper cart with a load of 90kg. Tamp the tape by rolling slowly over it. Tamp always in the same direction the tape has been applied and make sure the edges are well adhered.



Figure 6: Tamping the Tape with the RTC-3

Do not twist or turn the tamper cart on the tape. In total 3 passes are required. If applying block markings or pedestrian crossings, start in the centre of the marking then work towards the edges to remove trapped air. **Note:** Tamping the tape by means of truck tires is not sufficient and can cause adhesion failures. After tamping the tape application is complete and the road can be opened to traffic.

3. Application Protocol/Tools

The application protocol is essential in case of any warranty claim. Without it, no claim will be accepted. An application protocol for each application has to be completed and signed by the applicator. Additionally it is used for the documentation of the application conditions and correct application. The Lot numbers of each roll taken from the core or packaging should be recorded as well. The applicator has to send the protocol to the authorities and a copy to the 3M Subsidiary within 14 days.

Since the documentation requirements might vary from country to country, please refer to your local 3M sales organization for further information.

Important for the Overlay Application is the measurement of substrate temperature. Infrared thermometers are recommended for this, such as the 3M™ infrared thermometer IR 750 Non Contact or comparable equipment. All other weather conditions should be measured with the appropriate equipment.

4. Literature Reference

For additional information on 3M™ Stamark™ Tapes, Application Instructions or 3M™ Application equipment, refer to the following publications:

IF P50	Information Folder 3M™ Stamark™ Surface Preparation Adhesive P50
IF PS-98	Information Folder Adhesive Spray Applicator PS-98
IF MTA2	Information Folder Manual Tape Applicator MTA-2
IF RTC-3	Information Folder Tamper Cart RTC-3
PB A380ESD	Product Bulletin 3M™ Stamark™ High Performance Pavement Marking Tape A380ESD
PB A650ESD	Product Bulletin 3M™ Stamark™ Pavement Marking Tape A650ESD

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