



# Stamark™ Pavement Marking Tape

## Series 270 ES

Product Bulletin 270 ES

May 2011

### Description

3M™ Stamark™ Pavement Marking Tape Series 270 ES is a retroreflective patterned polymer pavement marking that can be used as an inlay marking on new asphalt or as an overlay marking on asphalt and concrete pavement surfaces in good condition.

Series 270 ES tape offers “Extended Season” applications due to an improved pressure sensitive adhesive (PSA) package on the bottom surface.

Series 270 ES does not require 3M™ Stamark™ Surface Preparation Adhesive P-50 or 3M™ Stamark™ Low VOC Surface Preparation Adhesive SPA60 prior to application, if applied during the application season as outlined in the 3M Climate Guide for 3M™ Stamark™ Pavement Marking Tapes.

**Series A270 ES:** Unlined. Used for long lines, edge lines, channelizing lines, gore markings, stop bars and crosswalks.

**Series L270 ES:** Lined. Used to cut symbols and legends.

**Series SMS-L270 ES:** Lined. Precut symbols and legends.

### Properties

#### A. Product Features

- Durable, conformable to pavement and retroreflective
- Embedded net provides increased tear resistance
- Pressure sensitive adhesive (PSA) on bottom surface
- No surface preparation adhesive required when applied within standard tape application season as by the 3M Climate Guide
- Can be applied early and late season, down to 40°F (4°C) with use of 3M™ Stamark™ Surface Preparation Adhesive P-50 or 3M™ Stamark™ Low VOC Surface Preparation Adhesive SPA60
- Retroreflective layer of glass beads bonded in a highly durable polyurethane topcoat

- Manufactured without the use of heavy metals, lead chromate pigments or other similar, lead containing chemicals
- Nominal thickness of 0.065 in. (1.6 mm) at pattern heights
- White: 270 ES
- Yellow: 271 ES

#### B. Reflectance

Series 270 ES tape has the following initial minimum retroreflectance values when measured in accordance with ASTM-D4061 and ASTM 4505. The photometric quality to be measured is coefficient of retroreflected luminance ( $R_L$ ) and shall be expressed as:

**English  $R_L$ :** millicandelas per square foot per footcandle [(mcd • ft<sup>-2</sup>) • fc<sup>-1</sup>] or equivalently as:

**Metric  $R_L$ :** millicandelas per square meter per lux [(mcd • m<sup>-2</sup>) • lx<sup>-1</sup>]

	White	Yellow
Entrance Angle	88.76°	88.76°
Observation Angle	1.05°	1.05°
Retroreflected Luminance*	300	250

$R_L$  [(mcd • ft<sup>-2</sup>) • fc<sup>-1</sup>]

\*The quantity of retroreflected luminance ( $R_L$ ) “relates to the way the effective retroreflective surface is focused on the retina of the human eye and to the visual effect thereby produced. It is recommended for describing the performance of highway signs and striping, or large vehicular markings which are commonly viewed as discernible surface areas.” Federal Test Method Standard 370, 3.1.2, Note 6, March 1, 1977.

### C. Color

The preformed markings consist of white or yellow films with pigments selected and blended to conform to standard highway colors.

### D. Skid Resistance

The patterned surface of the retroreflective pliant polymer shall provide an initial minimum skid resistance value of 45 BPN when tested according to ASTM E 303 except values will be taken in one direction and at 45° angle from that direction. These two values will then be averaged to find the skid resistance of the patterned surface.

### E. Application

All applications should be installed using the instructions in the appropriate section of 3M Information Folder 270 ES. Surface preparation adhesive is not needed when applying the tape during the application season outlined in the 3M Climate Guide for 3M™ Stamark™ Pavement Marking Tapes. The tape can be applied down to 40°F (4°C) ambient temperature outside the dates outlined in the Climate Guide for Stamark pavement marking tapes with the use of 3M™ Stamark™ Surface Preparation Adhesive P-50 or 3M™ Stamark™ Low VOC Surface Preparation Adhesive SPA60. For long line applications, the P-50 or SPA60 surface preparation adhesive should be applied with a 3M™ Adhesive Spray Applicator PS-14. For transverse markings, the surface preparation adhesive should be applied using a solvent resistant 3/8 inch nap paint roller.

Road lanes are typically exposed to different levels of traffic shear exposure. Road lanes that are exposed to a high frequency of high shear turning, especially by trucks and other large vehicles, require use of SPA60 or P50 for application of Stamark pavement marking tapes. The following table summarized the product and surface preparation adhesive application recommendations by shear condition:

Contact 3M Technical Service at 1800-553-1380 for questions.

Shear Level	Product and Adhesive Recommendation
Very High Shear	Stamark Tape Use SPA60
High Shear	Stamark Tape “A” and “L” Series Use SPA60
Medium Shear	Stamark Tape “A” and “L” Series Use P50 or SPA60
Low Shear	Stamark Tape “A” and “L” Series

↑  
Pounds per 100 sq ft

Within the Climate Guide Recommendations

### F. Patchability

Heavy traffic and snow plowing may cause wear and damage. New materials can be installed in these areas with minimal surface preparation by following

the manufacturer’s recommendations. Remove the damaged material and replace the damaged area by following the instructions in “Overlay Applications” of 3M Information Folder 270 ES.

### General Performance Considerations

Stamark pavement marking tapes are highly effective traffic control devices when properly applied according to 3M recommendations provided in product bulletins and information folders.

The durability of Series 270 ES tape will depend on traffic conditions, snow removal practices, application techniques used, and pavement and atmospheric conditions at the time of application. Damage will be caused by heavy trucks, excessive encroachment (crossover) on high ADT roadways, narrow lane width, unpaved shoulders, snow removal and ice control techniques. It is recommended that the customer thoroughly evaluate Stamark tapes under the conditions in the specified location before making large-scale applications. While experience has shown that, properly applied, these materials are highly effective traffic control devices, 3M makes no generalized performance claims.

### Storage

Store in a cool, dry area indoors. Use within one year of receipt.

### 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. Also refer to the MSDS for information about the volatile organic compound (VOC) content of chemical products. Consult local regulations and authorities for possible restrictions on product VOC content and/or VOC emissions. Electronically, visit us at [www.3M.com/us](http://www.3M.com/us) and select MSDS search.

## Literature Reference

For additional information on Stamark tapes, application instructions or application equipment, refer to the following publications:

- IF 270 ES Application Guidelines for 3M™ Stamark™ Tape Series 270 ES
- IF 5.2 Information Folder for 3M Highway Tape Applicator - HTA
- IF 5.7 Pavement Surface Preparation and Application Procedures for Stamark Pavement Marking Tapes
- IF 5.8 Application of 3M Stamark Precut Symbols and Legends
- IF 5.17 Instructions for using 3M Stamark Surface Preparation Adhesive P-50 for 3M Stamark Pavement Tapes
- IF 5.21 Instructions for using 3M Stamark Low VOC Surface Preparation Adhesive SPA60 for 3M Stamark Pavement Marking Tapes

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