



Designation: D 4592 – 03

## Standard Specification for Preformed Retroreflective Pavement Marking Tape for Limited Service Life<sup>1</sup>

This standard is issued under the fixed designation D 4592; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers white or yellow preformed retroreflective pavement marking tapes that are designed to provide a service life of typically 3 to 6 months, on roads with up to 15 000 average daily traffic count (ADT).

1.2 The tapes are intended for use as longitudinal, transverse, or word/symbol pavement markings that provide delineation day and night. The tapes may be either removable or nonremovable.

1.3 The values stated in SI units are to be regarded as the standard.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

D 1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications<sup>2</sup>

D 1898 Practice for Sampling Plastics<sup>3</sup>

D 4061 Test Method for Retroreflectance of Horizontal Coatings<sup>4</sup>

D 6628 Specification for Color of Pavement Marking Materials<sup>5</sup>

E 303 Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester<sup>5</sup>

E 1710 Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer<sup>4</sup>

#### 2.2 Federal Standard:<sup>6</sup>

Fed Std Test Method 141

#### 2.3 CIE Publications:<sup>7</sup>

No. 15.2 Colorimetry

No. 39.2 Recommendations for Surface Colours for Visual Signaling

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *limited service life or period*—a minimum service period of three months when placed in accordance with the manufacturer's recommended procedures on pavement surfaces having no more than 15 000 average daily traffic/lane.

NOTE 1—15 000 ADT per lane is typical of heavily traveled roads such as interstate highways through major urban areas.

3.1.2 *preformed tape*—continuous, flexible pavement marking material that is essentially complete and that may be affixed to or imbedded in the road surface without fundamentally altering its configuration.

3.1.3 *retroreflection*—reflection in which radiation is returned in directions close to the direction from which it came, this property being maintained over wide variations of the direction of the incident radiation.

3.1.4 *retroreflector*—surface or device that reflects and returns a relatively high proportion of light in a direction close to the light source. This characteristic is maintained over a wide variation of the angle made by the incident light ray and the normal to the retroreflective surface.

3.1.5 *surface pattern*—a pattern on the surface, in which the raised areas are a minimum of 0.8 mm (31 mils) high and occupy approximately 50 % of the surface area, presenting a substantial area of nearly vertical face to traffic from any approach.

### 4. Classification

4.1 Pavement marking tape manufactured according to this specification shall be identified as Type I or Type II:

4.1.1 *Type I (Removable)*—Marking tapes, after serving the intended limited service life, shall be removable from asphalt or portland cement concrete surfaces at pavement temperatures above 4°C (40°F) intact or in pieces no less than about 600 cm<sup>2</sup> in area, either manually or with a mechanical device without the use of heat, solvents, grinding, or blasting that would damage or discolor the pavement so as to leave an impressed traffic lane mark.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.38 on Highway Traffic Control Materials.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 10.01.

<sup>3</sup> Discontinued; See 1997 *Annual Book of ASTM Standards*, Vol 08.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 06.01.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 04.03.

<sup>6</sup> Available from Naval Publications and Forms Center, 5801 Tabor Ave, Philadelphia, PA 19120.

<sup>7</sup> Available from USNC-CIE Publications Office, TLA Lighting Consultants, Inc., 7 Pond Street, Salem, MA 01970.