

# EXPECTED IMPLEMENTATION JULY 2022

## 990 TEMPORARY TRAFFIC CONTROL DEVICE MATERIALS.

(REV 12-1-21) (FA 1-26-22) (7-22)

ARTICLE 990-4 is deleted and the following substituted:

### 990-4 Removable Tape.

**990-4.1 General:** Removable tape shall be one of the products listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6. Evaluation of Removable Tape will utilize data from an independent laboratory or data from the National Transportation Product Evaluation Program (NTPEP).

**990-4.2 Composition:** Removable tape shall be one of the products listed on the APL. The pavement stripes and markings shall consist of high quality plastic materials, pigments, and glass spheres or other retroreflective materials uniformly distributed throughout their cross-sectional area, with a reflective layer of spheres or other retroreflective material embedded in the top surface. No foil type materials shall be allowed.

**990-4.3 Retroreflectivity:** The white and yellow pavement markings shall attain an initial retroreflectance of not less than  $300 \text{ mcd/lx}\cdot\text{m}^2$  and  $250 \text{ mcd/lx}\cdot\text{m}^2$ , respectively. Black pavement markings shall have a retroreflectance of less than  $20 \text{ mcd/lx}\cdot\text{m}^2$ . The retroreflectance of the white and yellow pavement markings at the end of the six-month period shall not be less than  $150 \text{ mcd/lx}\cdot\text{m}^2$ .

**990-4.4 Thickness:** The APL will list the specified thickness of each approved product.

**990-4.5 Durability and Wear Resistance:** When properly applied, the material shall provide neat, durable stripes and markings. The materials shall provide a cushioned resilient substrate that reduces sphere crushing and loss. The film shall be weather resistant and, through normal wear, shall show no significant tearing, rollback or other signs of poor adhesion. Durability is the measured percent of pavement marking material completely removed from the pavement. The pavement marking material line loss must not exceed 5.0% of surface area.

**990-4.6 Conformability and Resealing:** The stripes and markings shall be capable of conforming to pavement contours, breaks and faults under traffic at pavement temperatures recommended by the manufacturer. The film shall be capable of use for patching worn areas of the same types of film in accordance with the manufacturer's recommendations.

**990-4.7 Tensile Strength:** The stripes and markings shall have a minimum tensile strength of 40 psi when tested according to ASTM D638. A rectangular test specimen 6 inches by 1 inch by 0.05 inches minimum thickness shall be tested at a temperature range of 40°F to 80°F using a jaw speed of 0.25 inches per minute.

**990-4.8 Elongation:** The stripes and markings shall have a minimum elongation of 25% when tested in accordance with ASTM D638.

**990-4.9 Plastic Pull test:** The stripes and markings shall support a dead weight of 4 pounds for not less than five minutes at a temperature range of 70°F to 80°F.

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Rectangular test specimen size shall be 6 inches by 1 inch by 0.05 inches minimum thickness.

**990-4.10 Adhesive:** Precoat removable tape with a pressure sensitive adhesive capable of being affixed to asphalt concrete and portland cement concrete pavement surfaces without the use of heat, solvents, and other additional adhesives or activators. Ensure that the adhesive does not require a protective liner when the removable tape is in rolled form for shipment. Ensure that the adhesive is capable of temporarily bonding to the roadway pavement at temperatures of 50°F and the above without pick-up distortion by vehicular traffic.

**990-4.11 Color:** Meet the requirements of 971-1.6.

**990-4.12 Removability:** Ensure that the manufacturer shows documented reports that the removable tape is capable of being removed intact or in substantially large strips after being in place for a minimum of 90 days and under an average daily traffic count per lane of at least 5,000 vehicles per day.