

## ORIGINATION FORM

**Date:** June 11, 2013

**Originator:** Chester A. Henson

**Contact Information:** chester.henson@dot.state.fl.us

**Specification Title:** Traffic Marking Materials

**Specification Section, Article, or Subarticle Number:** 971-7

**Why does the existing language need to be changed?** There have not been any products that want to qualify as Standard Tape.

**Summary of the changes:** Eliminated the category and references to Standard Tape.

**Are these changes applicable to all Department jobs?** Yes

**If not, what are the restrictions?**

**Will these changes result in an increase or decrease in project costs?** No change

**If yes, what is the estimated change in costs?**

**With who have you discussed these changes?** Specifications, Construction and Maintenance

**What other offices will be impacted by these changes?** None

**Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual?** No

**Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed?** No

Contact the State Specifications Office for assistance in completing this form.  
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## *Florida Department of Transportation*

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**ANANTH PRASAD, P.E.**  
SECRETARY

### **MEMORANDUM**

**DATE:** June 19, 2013

**TO:** Specification Review Distribution List

**FROM:** Daniel Scheer, P.E., State Specifications Engineer

**SUBJECT:** Proposed Specification: **9710700 Traffic Marking Materials.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Chester Henson of the Roadway Design Office due to no producers submitting Standard Tape to qualify for the QPL.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at ST986DS, or [daniel.scheer@dot.state.fl.us](mailto:daniel.scheer@dot.state.fl.us). Comments received after **July 17, 2013**, may not be considered. Your input is encouraged.

DS/cah  
Attachment

**TRAFFIC MARKING MATERIALS.**  
**(REV 6-11-13)**

ARTICLE 971-7 (Pages 1100 – 1101) is deleted and the following is substituted:

**971-7 Permanent Tape Materials for Pavement Stripes and Markings.**

**971-7.1 General:** The materials for pavement stripes and markings shall consist of white or yellow weather-resistant reflective film as specified herein. The markings are ~~divided into two classes: Standard and~~ *classified as* High Performance. ~~The classes are differentiated by their durability and retroreflectivity.~~ The pigment, glass spheres, and filler shall be well dispersed in the resin. However, the requirements delineated in this Specification and Section 713 shall apply. The material shall be free from all skins, dirt and foreign objects.

**971-7.2 Composition:** The pavement stripes and markings shall consist of high-quality plastic materials, pigments, and glass spheres uniformly distributed throughout their cross-sectional area, with a reflective layer of spheres embedded in the top surface.

**971-7.3 Skid Resistance:** The surface of the stripes and markings shall provide a minimum skid resistance value of 35 BPN when tested according to ASTM E303. Bike lane symbols and pedestrian crosswalks shall provide a minimum skid resistance value of 55 BPN.

**971-7.4 Thickness:** The QPL will list the specified thickness of each approved product.

**971-7.5 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 at the end of its service life.

**971-7.6 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.

**971-7.7 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 to 80°F using a jaw speed of 0.25 inch/min.

**971-7.8 Elongation:** The stripes and markings shall have a minimum elongation of 25% when tested in accordance with ASTM D 638.

**971-7.9 Plastic Pull test:** The stripes and markings shall support a dead weight of 4 lb for not less than five minutes at a temperature range of 70 to 80°F. Rectangular test specimen size shall be 6 inches by 1 inch by 0.05 inches minimum thickness.

**971-7.10 Pigmentation:** The pigment shall be selected and blended to provide a material which is white or yellow conforming to standard highway colors through the expected life of the stripes and markings.

**971-7.11 Glass Spheres:** The stripes and markings shall have glass retention qualities such that, when at room temperature a 2 inches by 6 inches specimen is bent over a 0.5 inch diameter mandrel axis, a microscopic examination of the area on the mandrel shall show no more than 10% of the spheres with entrapment by the material of less than 40%. The bead adhesion

shall be such that spheres are not easily removed when the film surface is scratched firmly with a thumbnail.

~~—————**971-7.12 Standard Markings:** The preformed materials for pavement stripes and markings shall have a service life of three year. The materials shall attain an initial retroreflectance of not less than 300 mcd/lx·m<sup>2</sup> for white and contrast markings and not less than 250 mcd/lx·m<sup>2</sup>, for yellow markings. The retroreflectance of the white, yellow and contrast pavement markings at the end of the three year service life shall not be less than 150 mcd/lx·m<sup>2</sup>. All pedestrian crosswalks, bike lane symbols and messages in a proposed bike lane shall attain initial retroreflectivity of not less than 275 mcd/lx·m<sup>2</sup>.~~

**971-7.123 High Performance Markings:** The preformed materials for pavement stripes and markings shall have a service life of five years. The materials shall attain an initial retroreflectance of not less than 450 mcd/lx·m<sup>2</sup> for white and contrast markings and not less than 350 mcd/lx·m<sup>2</sup> for yellow markings. The pavement stripes and markings shall retain a minimum retroreflectance for two years of not less than 300 mcd/lx·m<sup>2</sup> for white and contrast markings and not less than 250 mcd/lx·m<sup>2</sup> for yellow markings. The retroreflectance of the white, yellow and contrast pavement markings at the end of the five year service life shall not be less than 150 mcd/lx·m<sup>2</sup>.