



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

OFFICE OF THE
SECRETARY

March 7, 2011

This Memo Has Expired

DCE MEMORANDUM NO. 05-11
DME MEMORANDUM NO. 01-11
DDE MEMORANDUM NO. 11-01
(FHWA Approved: 3/7/11)

TO: DISTRICT CONSTRUCTION ENGINEERS
DISTRICT MAINTENANCE ENGINEERS
DISTRICT DESIGN ENGINEERS

FROM: David A. Sadler, P.E., Director, Office of Construction
Tim Lattner, P.E., Director, Office of Maintenance
Duane F. Brautigam, P.E., Interim Director, Office of Design

COPIES: Chris Richter (FHWA), Bob Burleson (FTBA), Brian Blanchard,
Chester Henson, Karen Byram, Phil Fausnight (ATSSA), Chad Thompson,
Abraham Scott

SUBJECT: RETAINED YELLOW COLOR OF PAVEMENT MARKING
MATERIALS

FDOT Specifications require the yellow color of pavement markings to lie within a set of initial color coordinates forming an "initial yellow color box". Our specifications also include additional coordinates for an extension to the initial box forming a "retained yellow color box", representing in-service performance requirements (after three years for permanent markings). FDOT's color box is unique to Florida, having been created in the mid to late 1990s when lead was removed from these products.

In recent years, the Department has modified its Specifications to include new categories of pavement marking materials with higher physical profiles, such as audible and wet weather markings. We have also established a clear priority to increase retroreflectivity of all markings, resulting in changes to the glass bead systems to include double drop systems and alternative reflective materials. We know that both of these actions have a negative effect on yellow color,

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especially the ability of materials to meet the retained yellow color coordinate requirements. Consequently, we have had great difficulty keeping products on the QPL, due to failure on retained yellow color, even though most of the failures would still look very yellow to the driver's eye. Although we intuitively know why this is happening to some degree, the consensus technical opinion is that it is not a product failure as much as an unforeseen disparity with color coordinates established in the 1990s. Most states do not specify retained color, and few, if any, use Florida's color box. However, we are reluctant to eliminate retained yellow color altogether due to the performance concern that manufacturers might eliminate UV inhibitors in their products, leading to quick performance degradation.

As a result, the task team looking at this issue in detail made the recommendation to waive the retained yellow color coordinate requirements for manufacturers seeking QPL approval, until such time that we make a revision to our Specifications to better address retained yellow color. The team plans to work with the State Materials Office to perform parametric studies to develop a more meaningful testing protocol to address the UV degradation issue, most likely in the form of accelerated laboratory testing that would be performed by an independent laboratory and submitted by the manufacturer in the QPL approval process. Our specifications will be modified to redefine and reinstate retained yellow color requirements once those studies are complete. The team also recommended immediately adding any product to the QPL that has met all requirements except for retained yellow color. Both of these recommendations are being implemented effective with the date of this memo.

If you have further questions, please contact Stefanie Maxwell at 850-414-4314, Karen Byram at 850-414-4353 or Dale Cook at 850-410-5638.

SLB/ww