

Part 1: Introduction

(5 minutes)



Introduction Outline

- Objectives
- Background
 - Retroreflectivity
 - Retroreflectivity Evaluations
- Specifications
 - Item 666—Retroreflectorized Pavement Markings
 - SS 6291—Mobile Retroreflectivity Data Collection for Pavement Markings

5



This section covers the objectives of the whole presentation, background material on marking retroreflectivity, how marking retroreflectivity is evaluated, and TxDOT specifications that cover marking retroreflectivity.

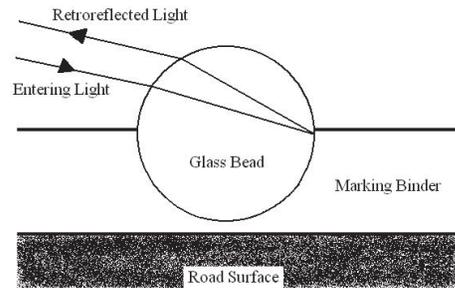
Other pavement marking special specifications such as SS6024—High Performance Pavement Markings with Retroreflectivity Requirements, SS6038—Multipolymer Pavement Markings, and SS6048—Reflectorized Pavement Markings for Seal Coat Projects, are not discussed in detail. These special specifications have similar requirements to Item 666. There may be differences in the required retroreflectivity values, the time frame when the measurements are supposed to occur, and the types of jobs to which the retroreflectivity requirements apply. Pavement marking specifications for all-weather pavement markings also have mobile measurements for the dry portion of the retroreflectivity readings. They are handled in a similar fashion to other marking types.

Objectives

- Increase user knowledge about pavement marking retroreflectivity requirements by providing information covering:
 - Pavement Marking Specifications Concerning Mobile Retroreflectivity
 - Mobile Retroreflectivity Programs
 - Pavement Marking Retroreflectivity Equipment
 - Retroreflectivity Data Requirements and Analysis
- Provide users with contacts for additional information and support

What Is Retroreflectivity?

- Retroreflectivity is a measure of the ability of a material to return light in the general direction from which it came
- Coefficient of retroreflected luminance (R_L) is the most commonly used measurement of retroreflectance for pavement markings
- Units: millicandelas per square meter per lux ($\text{mcd}/\text{m}^2/\text{lux}$)



Markings with higher initial retroreflectivity are generally going to last longer if properly applied. A higher retroreflectivity value will result in a marking that looks brighter at night. TxDOT has minimum initial retroreflectivity levels that must be met or exceeded. The specific levels depend on the specification being used. There are no federal requirements for initial or maintained retroreflectivity levels. The FHWA is working on establishing a minimum maintained value.

Retroreflectivity Evaluations

- Portable Retroreflectivity
- Mobile Retroreflectivity

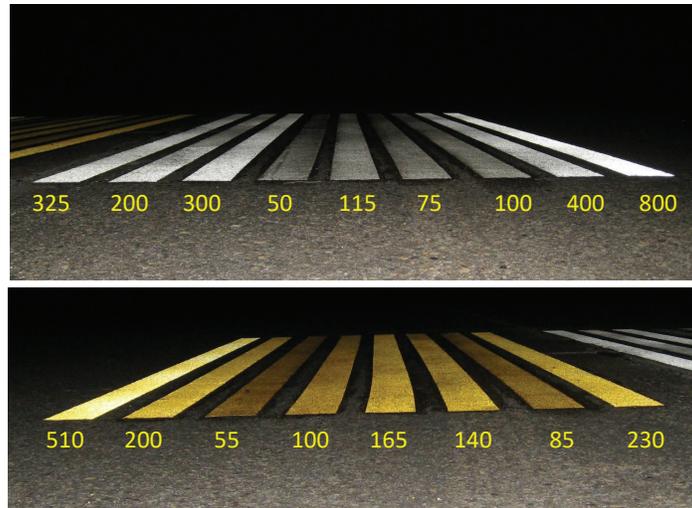


8

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Portable retroreflectivity utilizes a handheld retroreflectometer that must be placed on the marking to take a measurement. Mobile retroreflectivity uses a vehicle-mounted retroreflectometer that collects data while traveling at highway speeds. Both evaluation techniques will be described in more detail in latter parts of the guidance presentation. The equipment, data collection requirements, and reporting requirements will also be described.

Pavement Marking Retroreflectivity Examples



9

These pavement markings were modified to provide a range of retroreflectivity levels for demonstration purposes. The increase in brightness of the markings as the retroreflectivity level increases is evident.

TxDOT Item 666 requires a white initial minimum retroreflectivity of 250 mcd/m²/lux and a yellow initial minimum retroreflectivity of 175 mcd/m²/lux.

TxDOT Specifications

- Item 666—Retroreflectorized Pavement Markings
 - Type I marking retroreflectivity requirements
 - Retroreflectivity measurement instructions
 - Updated with Special Provision 007 in February 2018
- Special Specification 6291—Mobile Retroreflectivity Data Collection for Pavement Markings
 - Instructions and requirements for mobile retroreflectivity readings
 - Verification and Referee testing requirements
 - Approved in February 2018

10



Both Item 666 and Special Specification 6291 will be described in more detail in latter parts of the guidance presentation. Provider responsibilities, data collection requirements, and reporting requirements will be described. Interpretation of the data and how to compare to the minimum installation requirements will also be described.

Both Item 666 and Special Specification 6291 are currently undergoing revisions. Updates are expected in early to mid-2020. This presentation will be updated as newer versions are approved.

This concludes the discussion of the introductory guidance material. Additional guidance material covering the parts previously described is provided in the other parts of the guidance presentation.