

**MARKINGS TECHNICAL COMMITTEE SPONSOR BALLOT**  
**NEW SECTION 3A.06**  
**MINIMUM RETROREFLECTIVITY FOR LONGITUDINAL PAVEMENT MARKINGS**

The Markings Technical Committee proposed adding a new section to Chapter 3A to address minimum retroreflectivity for pavement markings. All language is new.

Since the FHWA published the Final Rule on Maintaining Minimum Sign Retroreflectivity in December 2007, their focus has shifted to preparing proposed language for pavement marking minimum retroreflectivity in order to fully comply with the 1993 congressional mandate to establish minimum levels of retroreflectivity for signs and markings. In order to provide input to the FHWA in a timely manner, the Markings Technical Committee developed proposed MUTCD language to address minimum retroreflectivity. The MTC believes that language can be crafted in such a way to comply with the law while addressing the concerns of the various agencies responsible for roadway maintenance.

Believing that the research that has been conducted to date will serve as the basis for determining the numerical values to be included in the FHWA proposed language, the MTC focused its effort on developing the MUTCD language for implementing minimum retroreflectivity. The key point of the proposed language is the requirement for agencies to establish a method to maintain minimum levels. Informational statements describe how this is achieved. The Committee believes this language places needed emphasis on marking retroreflectivity, requires a method to be established, affords wide latitude for timely replacements or upgrades, and minimizes liabilities to the agencies. The language approved by the NCUTCD Council does not include a table of actual minimum levels of retroreflectivity. The Council asked the MTC to prepare such a table for consideration at a future NCUTCD meeting.

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**3A.06 Longitudinal Pavement Marking Retroreflectivity**

Support:

Retroreflectivity is a factor associated with pavement marking visibility.

**Standard:**

**Public agencies or officials having jurisdiction shall establish an assessment or management method for maintaining longitudinal pavement marking visibility for center lines, edge lines, and lane lines.**

Guidance:

The jurisdiction's method should apply to, at a minimum, center line, edge line, or lane line markings required by a standard or recommended by a guidance statement in this Manual. One or more of the following assessment or management methods should be used to evaluate pavement marking retroreflectivity with respect to the minimum levels:

- a. Measured Marking Retroreflectivity - Pavement marking retroreflectivity is measured using a 30-meter retroreflectometer.
- b. Visual Nighttime Inspection - The retroreflectivity of existing markings is assessed by a visual inspection from a moving vehicle during nighttime conditions.
- c. Expected Marking Life - The replacement of markings is based on the experience of pavement marking retroreflectivity degradation. Degradation experience is based on such items as materials test results, traffic volumes, geographic area, weather, snowplowing, pavement type and roadway type.
- d. Control Markings – The replacement of markings is based on the performance of a sample of control markings. The control markings are a small sample located in typical roadway environments that are representative of the larger population of markings in the jurisdiction.

Support:

Compliance with the above Standard is achieved by having a method in place and using the method to maintain nighttime visibility of markings. Agencies and jurisdictions are deemed to be in compliance provided an assessment or management method is in use even though some sections of markings are below minimum levels or methods cannot be employed. These occurrences include but are not limited to:

- weather (such as snow, ice, temperature, and rainy seasons);
- reconstruction, resurfacing, and replacement schedules;

- localized or abnormal wear (such as vehicular abrasion by heavy trucks or severe erosion); and
- other constraints.

Based upon the Support and Guidance statements above, successful implementation of the assessment or management methods identifies markings in need of replacement. Markings are replaced as conditions permit.

Option:

Jurisdictions may use other methods where established and documented.

The minimum retroreflectivity levels may be reduced if a longitudinal marking line is supplemented by retroreflective raised pavement markers in accordance with Section 3B.13 or if continuous roadway lighting is present.

Support:

Additional information on minimum retroreflectivity levels, measurement and assessment methods, and specifications for measurement taking, can be found in the FHWA publication, *“Maintaining Pavement Marking Retroreflectivity.”*

The following factors can also be used to help establish methods, process evaluations, and schedules for replacement or retracing:

- (1) Representative sample size for a roadway segment
- (2) Presence of dirt, water, snow, etc. on the sections of markings
- (3) Time or season of year for evaluation and replacement/retracing
- (4) Width of line; type of material and retroreflective elements
- (5) AADT including percentage of nighttime travel
- (6) Typical roadway section and functional classification (including presence or absence of all-weather shoulder, rumble stripe, rumble strips, etc.)

Additional comments on the proposed language from the National Committee on Uniform Traffic Control Devices:

- The NCUTCD recommends the following compliance periods:
  - ♦ 4 years from the effective date of the Final Rule to have a method in place
  - ♦ 7 years from the effective date of the Final Rule to be in compliance and/or when the road is being resurfaced, but in no case greater than 10 years from the effective date of the Final Rule.
- The NCUTCD did not have sufficient data to recommend specific values for minimum marking retroreflectivity. The NCUTCD instructed the MTC to work with researchers to present recommended minimum values for consideration at the June 2009 meeting. Consequently, the NCUTCD has not yet addressed where the minimum retroreflectivity values are to be published. In developing the proposed language, the Markings Technical Committee reviewed the research recommendations developed through research sponsored by the FHWA and described in paper by Deballion, et. al published

in TRR 2055. The Markings Technical Committee identified the following factors related to the research recommended values that could not be supported:

- ♦ The recommended minimum value of 575 for high-speed centerline-only marked roads may be unattainable as a maintained retroreflectivity level over time.