

South Carolina Department of Transportation
Engineering Directive

Directive Number: ED-57 **Effective:** May 8, 2023

Subject: Maintaining Traffic Sign Retroreflectivity

References: 23 Code of Federal Regulations (CFR), Part 655
Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition
Engineering Directive 40
University of South Carolina research project, SPR 727,
FHWA – SC – 18 – 02 “Sign Life Expectancy” dated April 12, 2018

Primary Department: Maintenance

Background: Minimum traffic sign retroreflectivity standards were initially established by the Federal Highway Administration in 23 Code of Federal Regulations (CFR), Part 655. The purpose of this engineering directive is to set policy and document procedures to be followed to ensure compliance with the requirements set forth in the Federal Register and the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition.

The final rule that established minimum sign retroreflectivity standards went into effect on January 22, 2008. All regulatory, warning, and ground mounted guide signs were required to meet these minimum retroreflectivity requirements prior to January 22, 2015, (seven years from the effective date of the rule making) and all overhead guide signs were required to meet the requirements by January 22, 2018.

Assessment (nighttime sign inspections) or management methods can be used to verify that a sign meets the retroreflectivity standards. The South Carolina Department of Transportation has chosen to adopt a management style approach and use nighttime sign inspections as a quality control check. This approach would be a combination of the “Expected Life Method” and the “Blanket Replacement Method” that are described in the Federal Register and the MUTCD, 2009 Edition. In the “Blanket Replacement Method” all signs on a road will be replaced at the same time. This will allow blanket replacements in the future when the life expectancy of the sheeting has been surpassed. Life expectancy is currently based on the University of South Carolina research project, SPR 727, FHWA – SC – 18 – 02 “Sign Life Expectancy” dated April 12, 2018. The life expectancy of existing signs is twelve years from the date of manufacture of the sign (the date that reflective sheeting is applied to the substrata (sign blank)). The “Expected Life Method” is different from the “Blanket Replacement Method” in that only signs that have exceeded the life expectancy of the sheeting will be replaced. (See Section 2A.08 and Table 2A-3 in the MUTCD, 2009 Edition.)

The following signs may be excluded from the various methods of maintaining sign retroreflectivity:

- Parking, Standing, and Stopping signs (R7 and R8 series);

- Walking/Hitchhiking/Crossing signs (R9 series, R10-1 through R10-4b);
- All acknowledgement signs covered in Engineering Directive 40 (Adopt-A-Highway, Palmetto Prideway, Adopt-An-Interchange, State Championship, and Dedication Signs);
- All signs with a blue or brown background; and
- S-Marker Signs.

In order to be in compliance with the final rule, each district is expected to keep records that clearly show the method used to manage or assess its signs, and establish a reasonable schedule for sign replacement as needed within each county. Compliance with the program will be verified through the Maintenance QMT program.

Submitted by: Jeff Terry, P.E.
Director of Maintenance

Recommended by: Andrew T. Leaphart, P.E.
Chief Engineer for Operations

Approved by: Leland Colvin, P.E.
Deputy Secretary for Engineering

History: Issued on October 31, 2012
First Revision on May 8, 2023