



It's All About Safety

Providing retroreflective delineation and signing is important as a means of reducing the higher nighttime crash rates. Signs that have sufficient retroreflectivity during nighttime conditions are especially beneficial to older road users. Safe and efficient highways are a benefit to the motoring public and the health and viability of a community.

More Information

Additional information regarding nighttime visibility can be found at: www.fhwa.dot.gov/retro.

This web site includes:

- A sign sheeting ID guide
- FAQs
- Methods to maintain sign retroreflectivity
- Research reports
- Presentations

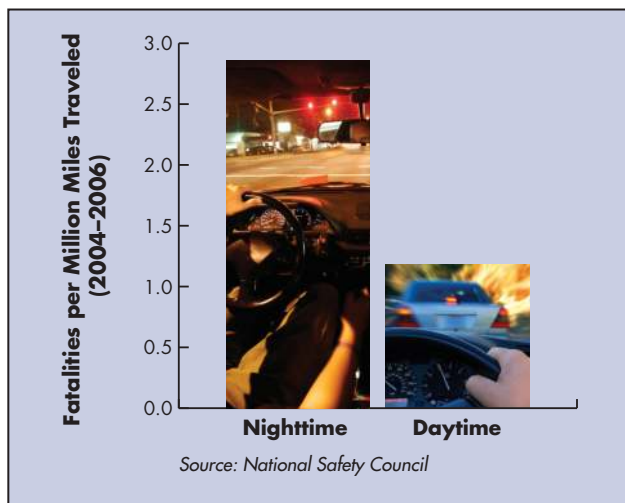


New Sign Retroreflectivity Requirements



Night Travel and Crashes

One of the Federal Highway Administration's (FHWA's) primary missions is to improve safety on the nation's roadways. Approximately 42,000 people have been killed on American roads during each of the past eight years. While only one-quarter of all travel occurs at night, about half of the traffic fatalities occur during nighttime hours. To address this disparity, the FHWA has adopted new traffic sign retroreflectivity requirements.



Nighttime visibility of traffic control devices is becoming increasingly important as our population ages. By the year 2020, about one-fifth of the U.S. population will be 65 years of age or older. In general, older individuals have declining vision and slower reaction times. Signs that are easier to see and read at night can help older drivers retain their freedom of mobility and remain independent.



Retroreflective sheeting degrades over time. Daytime visual inspections cannot be used to assess retroreflectivity.

New National Requirements

The *Manual on Uniform Traffic Control Devices* (MUTCD) is the national standard for all traffic control devices on any street or highway open to public travel.

The MUTCD requires signs to be either illuminated or made with retroreflective sheeting materials. Most signs in the U.S. are made with retroreflective sheeting materials, which degrade over time and therefore have a limited life. Until now, there has been little information available to determine when signs need to be replaced based on retroreflectivity.

Revision number two of the 2003 Edition of the MUTCD introduces new language establishing minimum retroreflectivity levels that must be maintained for traffic signs. The new MUTCD language and changes are highlighted on the MUTCD web page: <http://mutcd.fhwa.dot.gov/>.



Sign weathering racks used to measure durability.

Adding Flexibility

The MUTCD now requires that agencies maintain traffic signs to a set of minimum levels but provide a variety of maintenance methods that agencies can use to be in compliance with the new MUTCD requirements. The FHWA believes that the new MUTCD language will promote safety while providing flexibility for agencies to choose a maintenance method that best fits their specific conditions.

The minimum retroreflectivity requirements do not imply that an agency must measure every sign. Rather, the new MUTCD language describes methods that agencies can use to maintain traffic sign retroreflectivity at or above the minimum levels.



Agencies have until **January 2012** to establish and implement a sign assessment or management method to maintain minimum levels of sign retroreflectivity. The

compliance date for meeting the minimum retroreflectivity requirements on regulatory, warning, and ground-mounted guide signs is January 2015. For overhead guide signs and street name signs, the compliance date is January 2018.

Retroreflective Sheeting Materials

ASTM D4956 describes the types of retroreflective sheeting materials that can be used on traffic signs. The new MUTCD minimum retroreflectivity requirements refer to sheeting types as defined in ASTM D4956. Sheeting types that can be used according to the new requirements are as follows (current as of March 2008):

- All prismatic sheeting materials may be used for all signs.
- High Intensity Beaded (Type III) and Super Engineer Grade (Type II) may be used for all signs except for the white legend on overhead guide signs.
- Engineer Grade (Type I) may be used for all signs except for:
 - the white legend on guide signs,
 - the white legend on street name signs, and
 - all yellow and orange warning signs.

Even though a particular type of sheeting might initially meet the minimum retroreflectivity levels when new, it might quickly degrade to below the minimum retroreflectivity levels.

The use of higher performance sheeting, even though it has a higher initial cost, might provide a better life-cycle cost for the agency.

The FHWA has developed a sheeting ID guide and has posted it at: www.fhwa.dot.gov/retro