National Requirements for Maintaining Traffic Sign Retroreflectivity

U.S. Department of Transportation Federal Highway Administration

Sign Backgrounds

On December 21, 2007, The Department of Transportation, Federal Highway Administration (FHWA) issued Final Regulations governing the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD); Maintaining Traffic Sign Retroreflectivity. This Final Rule is far reaching in effect and applies to most regulatory, warning, street name, and both ground-mounted and overhead guide signs - whether permanent, temporary or portable - on all public roads and private property where the public is invited to travel.

This rule is a result of a Congressional directive in Section 406 of the Department of Transportation and related Agencies Appropriations Act, 1993 (Public Law 102-388; Oct. 6, 1992). That act directed the Secretary of Transportation to revise the MUTCD to include a standard for minimum levels of retroreflectivity that must be maintained for traffic signs and pavement markings. This rule applies only to traffic signs. The FHWA is expected to promulgate a rule for pavement markings at a later date.

Examples of Non-Compliant Signs (Incorrect)





Frequently Asked Questions

Q. What does the new rule require?

A. The new federal standard as published in the Manual on Uniform Traffic Control Devices (MUTCD) requires all agencies or officials having jurisdiction over a road to implement a method to keep their traffic signs above an established minimum level of retroreflectivity.

Q. What is the Manual on Uniform Traffic Control Devices?

A. The Manual on Uniform Traffic Control Devices (MUTCD) is recognized as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). It is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F.

Q. What does the word "retroreflective" mean?

A. "Retroreflective" means the ability of a material to return light to its source. In order to appear bright to drivers at night, signs need to be either directly illuminated or have "retroreflective" surfaces so that the light striking them from vehicle headlights is reflected back to the driver's eyes.

Q. How is a sign made retroreflective?

A. To make a sign retroreflective, special material called "reflective sheeting" is used. This sheeting consists of a white or colored material having a smooth, sealed outer surface incorporating miniature glass beads or uniform microprismatic lenses over its entire surface.

Q. What signs are affected?

A. The regulation applies to most regulatory, warning, street name and guide signs. These signs are also referred to as white, red, yellow, green, or orange series signs. The following signs are excluded: Parking, standing, walking, hitchhiking, crossing, adopt-a-highway, all signs with blue or brown backgrounds, and bikeway signs that are intended for exclusive use by bicyclists or pedestrians.

Q. How does a local jurisdiction comply with this requirement?

A. The FHWA was careful to provide substantial flexibility in its final rule so that state and local jurisdictions have a choice of methods to meet the retroreflectivity requirements. There are five options developed by the FHWA, called "Assessment or Management Methods."

Q. Is there a compliance timetable for this new regulation?

A. Compliance required as signs are being replaced or refurbished because they are damaged, missing, or no longer serviceable for any reason.

Q. What are the specific "minimum levels" of retroreflectivity?

A. These levels are included in a table that is part of the Final Rule. The table can be found on page 4.



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The Final Rule issued by the Federal Highway Administration provides five "Assessment or Management Methods" for agencies to implement a retroreflectivity sign management program.

Five Methods

Visual Nighttime Inspection Method

In the visual nighttime inspection method, the inspector assesses the visibility and retroreflectivity of the traffic signs as he or she approaches the signs. Signs need to be replaced if they do not meet the comparison defined in the appropriate procedure.

Measured Retroreflectivity Method

In this method, the retroreflectivity of a sign is measured and directly compared to the minimum level appropriate to that sign. A sign needs to be replaced if the average retroreflectivity value is less than the appropriate minimum level.

It's Time for Action.

Expected Sign Life Method

In this method, individual signs are replaced before they reach the end of their expected service life. To do this, an agency will need to know the expected service life required for the retroreflective material to degrade to the minimum retroreflective levels, and will need a method of identifying the age of individual signs.

Blanket Replacement Method

In this method, an agency replaces all the signs in an area/corridor, or of a given type, at specified intervals. An agency that uses this method does not need to track the age or assess the retroreflectivity of individual signs.

Control Sign Method

In this method, a control sample of signs is used to represent the total population of an agency's signs. The retroreflectivity of the control sign is monitored at appropriate intervals and sign replacement is based on the performance of the control signs.

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Do you have an Assessment Method in place to maintain Minimum Retroreflectivity?

Sign Dating Stickers

3 ways to implement the Expected Sign Life or the Blanket Replacement

Method of maintaining traffic sign retro-reflectivity.

3 ways to implement the Expected Sign Life or the Blanket Replacement Method

of maintaining traffic sign retro-reflectivity.

Expected Sign Life METHOD:

Signs must be replaced before they reach the end of their expected sign life. An agency must have documentation of expected replacement for individual signs.

Blanket Replacement METHOD:

The agency will replace all the signs in an area or of a specific series at given intervals. The agency can use stickers that specify installation dates to help them know when to replace all signs in the area or series

Specify Year when ordering. Material: (H) High Intensity Prismatic

Blanket Replacement METHOD:

The agency will replace all the signs in an area or of a specific series at given intervals. The agency can use stickers that specify installation dates to help them know when to replace all signs in the area or series

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Specify Year and Material when ordering. High Intensity (H)

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	GENERIC DATING STICKER	The Generic dating sticker provides the year and you simply punch out the month	123456 2025	1 2 3 4 5 6 REPLACE 2 0 3 5 6 FIBS 2 0 3 5 6 SIGN IN 9 10 11 12 Expected Sign Life Style #DGES(H)35 WARRING In In In 10 11 12 PERCENT NO PERCENT ROAD SIGN NO 10 10 10 10 IN In In 10 10 11 12 WARRING NO PERCENT ROAD SIGN NO 10 11 12 10 1	
	2 1/4" WIDE x 1 1/8" HIGH	that applies to either the date of installation or replacement date.	7 8 9 10 11 12 Sign Installation Date Style #DGID(H)25		
	WARNING MESSAGE DATING STICKER	The Warning Message dating sticker provides a deterrent to vandalism and theft while still maintaining the date of installation or replacement	WARNING IT IS UNLAWFUL TO REMOVE ON DEFACE AN OFFICIAL ROAD SIGN OF TRAFFIC CONTROL DEVICE POINT ALLE BY INT AND/OF IMPRISONMENT		
	2 1/4" HIGH	date.	Sign Installation Date Style #DWID(H)25	Expected Sign Life Style #DWES(H)35	
	UNIQUE DATING STICKER	The Unique dating sticker serves both purposes listed	Emblem Jurisdictional Name WARNING Itis untawful to remove or deface any of fillial road sign of the filling f	Emblem Jurisdictional Name WARNING Iti unlawfu to remove or deface any official road sign or the factor	
	4" WIDE x 2 1/4" HIGH	above while also allowing you to use logos and text of your choosing.	Sign Installation Date Style #DUID(H)25	Expected Sign Life Style	

Expected Sign Life METHOD:

Signs must be replaced before they reach the end of their expected sign life. An agency must have documentation of expected replacement for individual signs.



MUTCD Table 2A-3. Minimum Maintained Retroreflectivity Levels									
SIGN COLOR	Beaded Sheeting			Prismatic Sheeting					
	l I	Ш	III	III, IV, VI, VII, VIII, IX, X					
White on Green	W*; G≥7	W*; G≥15	W*; G≥25	W≥250; G≥25	Overhead				
	W*; G≥7		W≥120; G≥15		Post-Mounted				
White on Blue	W*; B≥3	W*; B≥5	W*; B≥12	W≥250; B≥12	Overhead				
	W*; B≥3	W/* D-> C	W≥120; B≥7	M/s 250, Ds 10	Post-Mounted				
White on Brown	W^; Br≥1	W^; Br≥5	$W > 150$, $Br \ge 10$	W≥350; B≥10	Overnead Doct Mountod				
	₩, DI≥1	W2130, DI23							
Black on Yellow or	¥";0"	1250;0250			0				
black off Oralige	Y*; O*	Y*; U* Y≥/5; U≥/5							
White on Red		W≥35; R≥7			4				
Black on White		W≥5	0						
 of 0.2° and an entrance angle of -4.0° Por word legend and fine symbol signs measuring at least 48 inches and for all sizes of bold symbol signs. For word legends and fine symbol signs measuring less than 48 inches. Minimum sign contrast ratio ≥3:1 (white retroreflectivity ÷ red reflectivity). * This sheeting type shall not be used for this color for this application. 									
		BOLD SYMB	OL SIGNS						
• W1-1, -2 - Turn and (• W1-3, -4 - Reverse Tr • W1-5, - Winding Roa • W1-6, -7 - Large Arro • W1-8 - Chevron • W1-10 - Intersection • W1-11 - Hairpin Cur • W1-15 - 270 Degree • W2-1 - Cross Road • W2-2, -3 - Side Road • W2-4, -5 - T and Y In • W2-6 - Circular Inter • W2-7,8 - Double Sid	Curve urn and Curve ad ow n in Curve ve Loop Loop tersection rsection le Roads	 W3-1 - Stop Ahead W3-2 - Yield Ahead W3-3 - Signal Ahead W4-1- Merge W4-2 - Lane Ends W4-2 - Lane Ends W4-5 - Entering Roadway Merge W4-6 - Entering Roadway Added Lane W6-1, -2 - Divided Highway Begins and Ends W6-3 - Two-Way Traffic W10-1, 2, 3, 4, 11, 12 - Grade Crossing Advance Warning 		 W11-2 - Pedestrian Crossing W11-3,4,16-22 - Large Animals W11-5 - Farm Equipment W11-6 - Snowmobile Crossing W11-7 - Equestrian Crossing W11-8 - Fire Station W11-10 - Truck Crossing W12-1 - Double Arrow W16-5P, 6P, 7P - Pointing Arrow Plaques W20-7 - Flagger W21-1 - Worker 					
Fine Symbol Signd (symbol signs not listed as bold symbol signs)									
		SPECIAL	CASES						
 W3-1 - Stop Ahead: Red retroreflectivity ≥7 W3-2 - Yield Ahead: Red retroreflectivity ≥7; White retroreflectivity ≥35 W3-3 - Signal Ahead: Red retroreflectivity ≥7; Green retroreflectivity ≥7 W3-5 - Speed Reduction: White retroreflectivity ≥50 For non-diamond shaped signs such as W14-3 (No Passing Zone), W4-4P (Cross Traffic Does Not Stop) or W13-1P, 2, 3, 6, 7 (Speed Advisory Signs), use largest sign dimension to determine proper minimum retroreflectivity level 									
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