RESCINDED
JANUARY 2024

This Recommended Change to the MUTCD was rescinded by the NCUTCD Council on January 12, 2024.

Attachment No. 11
RW Signs No 6a

National Committee on
Uniform Traffic Control Devices

17200 West Bell Road No.1135 * Surprise, Ariz. 85374
Telephone (623) 214-2403 * e-mail: ncutcd@aol.com

RWSTC Agenda item III.2, January 2014

National Committee on Uniform Traffic Control Devices
RWSTC

TECHNICAL COMMITTEE: NCUTCD Regulatory/Warning Signs Technical Committee

DATE OF ACTION: (Task Force) 5-11-13
TASK FORCE: Tom Heydel (chair), Jason Kennedy, Paul Carlson
RWSTC APPROVAL DATE: 6-26-13, revised 12-16-13 following sponsor comments
TRANSMITTAL TO SPONSORS DATE: December 2013
RWSTC APPROVAL DATE FOLLOWING SPONSOR COMMENTS: 1-8-14
COUNCIL APPROVAL DATE: 1-10-14

TOPIC: Table 2A-3, and Section 2A.08 - Added sheeting types - Minimum Maintained Retroreflectivity Levels

AFFECTED PORTIONS OF MUTCD: Table 2A-3, Section 2A.08

DISCUSSION/QUESTION:

In April 2008, FHWA published "Minimum Retroreflectivity Levels for Blue and Brown Signs, Publication No FHWA-HRT-08-029. At the time the 2009 MUTCD was placed in the docket for comment, brown and blue signs did not have final approved research for minimum levels of retroreflectivity. Therefore, blue and brown background signs were excluded from retroreflectivity minimum standards in the 2009 MUTCD. This publication has those levels contained within table 17 (Minimum MR levels) of this document. The table was amended on July 5, 2011. ASTM D4956-11a is also shown on this table 17 at the top. The 2009 manual indicates ASTM D4956-04.
The FHWA website under MUTCD and subheading publications has this FHWA-HRT-08-029 report with the update to the table 2A-3 related to brown and blue signs.

Also, since the time the 2009 MUTCD was published, prismatic sheeting type XI has now been approved by FHWA and should be listed as well in table 2A-3. The rest of this table mirrors table 2A-3 of the 2009 MUTCD.

RECOMMENDATION:

- Add prismatic sheeting type XI to table 2A-3.
- Change ASTM D4956-04 to read ASTM D4956-11a to the sheet type heading. 11a replaces 04.
- Eliminate the option statement regarding exclusion of blue and brown background signs from the Section 2A.08 option statement.
- Add W21-1a worker sign to table 2A-3 to be consistent with the FHWA sign details.

RECOMMENDED WORDING:

Note: Proposed changes to the MUTCD are shown in underline red and removed text are shown in ~~strikethrough red.~~

Section 2A.08 Maintaining Minimum Retroreflectivity

Support:
01 Retroreflectivity is one of several factors associated with maintaining nighttime sign visibility (see Section 2A.22).

Standard:
02 **Public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-3.**

Table 2A-3. Minimum Maintained Retroreflectivity Levels

Sign Color	Sheeting Type ~~(ASTM D4956-04)~~ (ASTM D4956-11a)		Additional Criteria
	Beaded Sheeting	Prismatic Sheeting	

RESCINDED JANUARY 2024

This Recommended Change to the MUTCD was rescinded by the NCUTCD Council on January 12, 2024.

	I	II	III	III, IV, VI, VII**, VIII, IX, X**, XI	
White on green	W*; G ≥ 7	W*; G ≥ 15	W*; G ≥ 25	W ≥ 250; G ≥ 25	Overhead
	W*; G ≥ 7	W ≥ 120; G ≥ 15			Ground mounted
White on blue	W*; B ≥ 3	W*; B ≥ 5	W*; B ≥ 12	W ≥ 250; B ≥ 12	Overhead
	W*; B ≥ 3	W ≥ 120; B ≥ 7			Ground mounted
White on brown	W*; Br ≥ 1	W*; Br ≥ 5	W*; Br ≥ 10	W ≥ 350; Br ≥ 10	Overhead
	W*; Br ≥ 1	W ≥ 150; Br ≥ 5			Ground mounted
Black on yellow or black on orange	**Y*; O***	Y ≥ 50; O ≥ 50			①
	Y*; O*	Y ≥ 75; O ≥ 75			②
White on red	W ≥ 35; R ≥ 7				③
Black on white	W ≥ 50				—

The minimum MR levels shown in this table are in units of cd/lx/m^2 measured at an observation angle of 0.2° and an entrance angle of -4.0°.

① For text and fine symbol signs measuring at least 1,200 mm (48 inches) and for all sizes of bold symbol signs.

② For text and fine symbol signs measuring less than 1,200 mm (48 inches).

③ Minimum Sign Contrast Ratio ≥ 3:1 (white retroreflectivity ÷ red retroreflectivity).

* This sheeting type should not be used for this color for this application.

** this type sheeting was consolidated and has become type VIII sheeting under ASTM D4956-11a

Bold Symbol Signs

- W1-1, -2 – Turn and Curve
- W1-3, -4 – Reverse Turn and Curve
- W1-5 – Winding Road
- W1-6, -7 – Large Arrow
- W1-8 – Chevron
- W1-10 – Intersection in Curve
- W1-11 – Hairpin Curve
- W1-15 – 270 Degree Loop
- W2-1 – Cross Road
- W2-2, -3 – Side Road
- W2-4, -5 – T and Y Intersection
- W2-6 – Circular Intersection
- W3-1 – Stop Ahead
- W3-2 – Yield Ahead
- W3-3 – Signal Ahead
- W4-1 – Merge
- W4-2 – Lane Ends
- W4-3 – Added Lane
- 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 – Highway-Railroad Advance Warning
- W11-2 – Pedestrian Crossing
- W11-3 – Deer Crossing
- W11-4 – Cattle Crossing
- 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
- W20-7a – Flagger
- W21-1 and W21-1a –

		Worker
Fine Symbol Signs – 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 W14-3 (No Passing Zone), W4-4p (Cross Traffic Does Not Stop), or W13-1, -2, -3, -5 (Speed Advisory Plaques), use largest sign dimension to determine proper minimum retroreflectivity level		

Support:

03 Compliance with the Standard in Paragraph 2 is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-3. Provided that an assessment or management method is being used, an agency or official having jurisdiction would be in compliance with the Standard in Paragraph 2 even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.

Guidance:

04 *Except for those signs specifically identified in Paragraph 6, one or more of the following assessment or management methods should be used to maintain sign retroreflectivity:*

A. *Visual Nighttime Inspection—The retroreflectivity of an existing sign is assessed by a trained sign inspector conducting a visual inspection from a moving vehicle during nighttime conditions. Signs that are visually identified by the inspector to have retroreflectivity below the minimum levels should be replaced.*

B. *Measured Sign Retroreflectivity—Sign retroreflectivity is measured using a retroreflectometer. Signs with retroreflectivity below the minimum levels should be replaced.*

C. *Expected Sign Life—When signs are installed, the installation date is labeled or recorded so that the age of a sign is known. The age of the sign is compared to the expected sign life. The expected sign life is based on the experience of sign retroreflectivity degradation in a geographic area compared to the minimum levels. Signs older than the expected life should be replaced.*

D. *Blanket Replacement—All signs in an area/corridor, or of a given type, should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest-life material used on the affected signs.*

E. *Control Signs—Replacement of signs in the field is based on the performance of a sample of control signs. The control signs might be a small sample located in a maintenance yard or a sample of signs in the field. The control signs are monitored to determine the end of retroreflective life for the associated signs. All field signs represented by the control sample should be replaced before the retroreflectivity levels of the control sample reach the minimum levels.*

F. *Other Methods—Other methods developed based on engineering studies can be used.*

Support:

05 Additional information about these methods is contained in the 2007 Edition of FHWA's "Maintaining Traffic Sign Retroreflectivity" (see Section 1A.11).

Option:

06 Highway agencies may exclude the following signs from the retroreflectivity maintenance guidelines described in this Section:

A. Parking, Standing, and Stopping signs (R7 and R8 series)
B. Walking/Hitchhiking/Crossing signs (R9 series, R10-1 through R10-4b)
C. Acknowledgment signs
~~D. All signs with blue or brown backgrounds~~
D. Bikeway signs that are intended for exclusive use by bicyclists or pedestrians

RWSTC Vote: For: Unanimous 1-8-14
Against:
Abstentions:

Council Vote: For: 1-10-14 Unanimous
Against:
Abstentions:

c: NCUTCD/Jan 2014/Heydel/ RW # 2 - Table 2A-3 added sheeting types, 5-11-13, approved by RWSTC 6-26-13 revised following sponsor comments 12-15-13, revised 12-16-13, approved by RWSTC 1-8-14, approved by Council 1-10-14