

SPECIFICATION FOR ASTM
RETROREFLECTIVE SHEETING FOR
PERMANENT SIGNING

(High Intensity Prismatic Grade)

Sept 2004

SPECIFICATION FOR ASTM SHEETING FOR PERMANENT SIGNING

High Intensity Prismatic

NOTICE: This specification contains a sheeting manufacturer's field performance obligation paragraph 7.2 which shall apply only when included and made part of a bid request, proposal, and/or purchase agreement of (Agency).

1.0 Scope

This specification covers flexible white or colored, wide angle retroreflective sheeting (hereinafter called sheeting), tape and related processing materials designed to enhance nighttime visibility of traffic control signs and objects. **High Intensity Prismatic Sheeting shall consist of prismatic lens elements with a distinctive interlocking diamond seal pattern and datum orientation marks visible from the face of a smooth surface.** The sheeting shall have a precoated adhesive protected by an easily removable liner.

2.0 Requirements

- 2.1 Color Requirements. Color shall be as specified and shall conform to the requirements of Table I. Conformance to color requirements shall be determined spectrophotometrically in accordance with ASTM E 1164, with instruments utilizing either 45/0, or 0/45 illumination/viewing conditions and tolerances as described in ASTM E 1164 for retroreflective materials. CIE Tristimulus values for the 2° observer and illuminant D65 shall be calculated in accordance with ASTM E 308.

Table I

Color Specification Limits* and Reference Standards

Color	$\bar{x}$	$\bar{y}$	$\bar{x}$	$\bar{y}$	$\bar{x}$	$\bar{y}$	$\bar{x}$	$\bar{y}$	Daytime Luminance Factor (Y_T %) Limit (y)	
									Min.	Max.
White	.305	.305	.355	.355	.335	.375	.285	.325	40	-
Yellow	.487	.423	.54	.454	.465	.534	.427	.483	24	45
Red	.690	.310	.595	.315	.569	.341	.655	.345	3	15
Blue	.078	.171	.150	.220	.210	.160	.137	.038	1	10
Green	.030	.398	.166	.364	.286	.446	.201	.794	3	9

- * The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illumination Source D65.

- 2.2 Coefficient of Retroreflection: The coefficients of retroreflection shall be determined in accordance with ASTM E-810, for the minimum requirements of Table II. This table contains "core" values as found in ASTM D 4956, to characterize sheeting performance throughout its expected range of use.

Table II High Intensity Prismatic
Minimum Coefficient of Retroreflection
(cd/lux/m²)

White	-4.0	30.0	
0.2	360	170	
0.5	150	72	
Yellow	-4.0	30.0	
0.2	270	135	
0.5	110	54	
Red	-4.0	30.0	
0.2	65	30	
0.5	27	13	

Green	-4.0	30.0	
0.2	50	25	
0.5	21	10	
Blue	-4.0	30.0	
0.2	30	14	
0.5	13	6.0	

- 2.3 Certification of Sheeting: All sheeting submitted during the tender process shall provide proof of testing certificate to international standard such as to ASTM D4956-01 by accredited third party laboratory
- 2.4 The sheeting manufacturer shall provide the end user with product performance warranty provided that the sheeting was applied in accordance to the manufacturer's recommendation methods and onto the manufacturer's approved substrate