



# Flexible Prismatic Cone Sheeting

## Series 3340

### For Use on Polyvinyl Chloride Reboundable Traffic Cones

Product Bulletin 3340

May 2014

Replaces PB 4000 Dated October 2011

**Description** 3M™ Flexible Prismatic Cone Sheeting Series 3340 is a plasticizer resistant, prismatic lens reflective sheeting with pressure sensitive adhesive.

Series 3340 cone sheeting is specifically designed for reflectorizing polyvinyl chloride (PVC) traffic cones. It is not recommended for use on polyethylene or rubber cones. Vinyl cones properly reflectorized with Series 3340 cone sheeting comply with MUTCD requirements for highway and utility use and exceeds the reflectivity values of ASTM Type VI.

**Photometric** Conformance to color requirements should be determined by instrumental method in accordance with ASTM E 1164 on sheeting applied to aluminum test panels. The values should be determined with a Hunter Color Flex 45/0 spectrophotometer. Computations should be done in accordance with ASTM E 308 for the 2° observer.

**Table I — CIE Chromaticity Coordinate Limits<sup>2</sup> for new sheeting**

Color	1		2		3		4		Limit (Y%)	
	x	y	x	y	x	y	x	y	Min.	Max
White	.303	.300	.368	.366	.340	.393	.274	.329	27	-

<sup>2</sup>The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illuminant D64.

#### Coefficients of Retroreflection

The values in Table II are minimum coefficients of retroreflection for new sheeting expressed in candelas per foot candle per square foot (candelas per lux per square meter).

#### Test for Coefficients of Retroreflection

Conformance to coefficient of retroreflection requirements should be determined by instrumental method in accordance with ASTM E 810 “Test Method for Coefficient of Retroreflection of Retroreflective Sheeting”.

**Photometric  
(continued)**

**Table II**  
**Minimum Coefficient of Retroreflection**  
**(Candelas Per Footcandle Per Square Foot**  
**or Candelas Per Lux Per Square meter)**

<b>Observation Angle°</b>	<b>Entrance Angle°</b>	<b>White</b>
0.1	- 4	750
0.1	+30	300
0.2	- 4	500
0.2	+30	200
0.5	- 4	225
—	+30	85

Observation (Divergence) Angle - The angle between the illumination axis and the observation axis. Entrance (Incidence) Angle-The angle from the illumination axis to the retroreflector axis. The retroreflector axis is an axis perpendicular to the retroreflective surfaces.

**Process Colors**

Screen processing Series 3340 is not recommended.

**Recommended Application Procedures**

Series 3340 cone sheeting is intended for application to reboundable PVC cones. Applications should be made at temperatures above 60°F (16°C). The surfaces of plasticized vinyl cones sometimes contain oily contaminants that may reduce adhesion. A solvent wipe with a 50-50 blend of isopropyl alcohol and water can be used to clean the cone before application.

**Adhesive and Film Properties**

**Standard Test Panels**

Unless otherwise specified herein, sheeting should be applied to test panels and conditioned in accordance with ASTM D4956 and test methods and conditions should conform to ASTM D4956.

**Properties**

The following properties should conform to the requirements in ASTM D4956.

1. Adhesion
2. Outdoor weathering
  - retained coefficient of retroreflection
  - colorfastness
3. Shrinkage
4. Flexibility
5. Liner removal
6. Impact resistance
7. Night time color

In addition, Series 3340 sheeting will conform to the following properties.

**1. Gloss**

Test Method — Test in accordance with ASTM D523 using a 60° glossmeter.

Requirement — Rating not less than 50.

**2. Optical Stability**

Test Method — Apply a 3 inch x 6 inch sample to a test panel. Measure  $R_A$ , then place it in an oven at  $71^\circ\text{C} \pm 3^\circ\text{C}$  ( $160^\circ\text{F} \pm 5^\circ\text{F}$ ) for 24 hours followed by conditioning at standard conditions for two hours.

Remeasure  $R_A$ .

Requirement — The sheeting shall retain a minimum of 85% and a maximum of 115% of the original coefficient of retroreflection.

<b>Cleaning</b>	It is recommended that reflectorized cones be cleaned periodically with a 50-50 isopropyl alcohol-water blend to remove accumulated road grime and any surface contamination that may have occurred as a result of cone stacking.
<b>Storage and Packaging</b>	Series 3340 sheeting should be stored in a cool, dry area, preferably at 65-75°F (18-24°C) and 30-50% relative humidity and should be applied within one year of purchase. Rolls and sleeves should be stored horizontally in the shipping carton. Devices should be stored or shipped vertically stacked to avoid scuffing during shipment.
<b>General Performance Considerations</b>	<p>The durability of Series 3340 cone sheeting will depend upon compliance with recommended application procedures, geographic area, exposure conditions, and maintenance.</p> <p>Maximum durability of this sheeting is obtained when it is applied to polyvinyl chloride (PVC) traffic cones following manufacturer's recommendations.</p> <p>Purchasers should select a suitable test for determining reflective sheeting durability on reboundable plastic substrates. Test should include plastic manufacturer's recommendation for impact of reboundable plastic traffic control devices.</p>
<b>Health and Safety Information</b>	Read all Health Hazard Precautionary, and First Aid statements found in the Material Safety Data Sheet, and/or product label of chemicals prior to handling or use.
<b>3M Basic Product Warranty and Limited Remedy</b>	3M™ Flexible Prismatic Cone Sheeting Series 3340 ("Product") is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. If the Product is proven not to have met the Basic Warranty on its shipment date, then a buyer's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refund or replacement of the Product.
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