



Bureau of Materials Materials Approval Procedures

MAP Number: **118-15**

Effective Date: April 1, 2015

Approved By: Eileen Sheehy

PROCEDURE FOR APPROVAL OF RETROREFLECTIVE SHEETING FOR SIGNS AND DELINEATORS

PURPOSE:

To establish a procedure to approve retroreflective sheeting for addition to the NJDOT Bureau of Material's Qualified Products List (QPL).

REFERENCES:

New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction

Sections 911.01.01.B (Types III, VIII, IX) and 911.03.4 (Type VIII)

ASTM D 4956, Standard Specification for Retroreflective Sheeting for Traffic Control

National Transportation Products Evaluation Program (NTPEP) www.ntpep.org/

PROCEDURE:

A. Manufacturer's Request for Approval.

The Manufacturer shall request in writing for the approval of the product. Include the following information in the request:

1. The name, address and contact information for the manufacturer.
2. The name and designation of product to be evaluated.
3. Type of sheeting (Type III, VIII, or IX) as specified in ASTM D 4956.
4. For each sheeting type and color, National Transportation Product Evaluation Program (NTPEP) data, SSM number, and test deck location where all requirements of ASTM D 4956 and MAP-118 were met.
5. Statement that the sheeting meets the requirements of ASTM D 4956 for the type it is to be evaluated for approval.
6. Materials Safety Data Sheet (MSDS).

With the request, the manufacturer shall submit 2 samples of retroreflective sheeting. Ensure that each sample is 8 inches × 11 inches and is clearly labeled on the back with the manufacturer, type, name, and designation. The ME will use the samples for laboratory testing and future reference.

Mail the request for approval to the following:

Mailing Address (USPS):

Manager, Bureau of Materials (Thiokol Bldg. 4)
New Jersey Department of Transportation
P.O. Box 600
Trenton, NJ 08625-0600

Street Address (UPS, FedEx, etc.):

Manager, Bureau of Materials (Thiokol Bldg. 4)
New Jersey Department of Transportation
930 Lower Ferry Road
West Trenton, NJ 08628

B. Bureau of Materials Review of NTPEP Data.

The Materials Engineer (ME) will review NTPEP data for the SSM number(s) and location submitted. The ME will compare the NTPEP results to the requirements in Table MAP-118-1. All requirements of ASTM D 4956 and MAP-118 must be met in full at the test deck location submitted by the manufacturer. For each sheeting type and color, the manufacturer shall submit only one test deck location for consideration. In his evaluation, the ME will only consider test results from the one test deck submitted. The ME will not combine results from multiple test decks to get a complete set of complying data. The ME will not approve sheeting that has missing data or data which is non-complying with the criteria from Table MAP-118-1. The ME will not approve materials which have not completed the required 36 months of testing.

Table MAP-118-1 Requirements of NTPEP Data for Retroreflective Sheeting			
Property	Time of Testing	Type of Reading	Criteria from ASTM D 4956
Coefficient of Retroreflection (cd/lux/m ²)			
- 4°/0.2° Geometry ¹	Initial	field	Table 4 for Type III; Table 8 for Type VIII; or Table 9 for Type IX
+ 30°/0.2° Geometry ¹	Initial	field	Table 4 for Type III; Table 8 for Type VIII; or Table 9 for Type IX
- 4°/0.2° Geometry ¹	36 months	field	Table 12
+ 30°/0.2° Geometry ¹	36 months	field	Table 12
Color Coordinates ²	Initial	field	Table 11
Color Coordinates ²	36 months	field	Table 11
Luminance Factor ² (%)	Initial	field	Table 2
Luminance Factor ² (%)	36 months	field	Table 2
Visual Evaluation	all times up to 36 months		Ratings of “none” for shrinkage, cracking, and blistering.
1. The average of the A and B sample light tunnel results for the 0° orientation must meet the required minimum retroreflectivity. 2. The average of the A and B sample results using the laboratory instrument must meet the requirements for color and luminance factor.			

C. Bureau of Materials Laboratory Testing

The ME will perform testing for coefficient of retroreflection, color and luminance factor on the samples submitted by the manufacturer. The samples must meet the requirements in Table MAP-118-2.

Table MAP-118-2 Requirements for Laboratory Testing of Retroreflective Sheeting	
Property	Criteria from ASTM D 4956
Coefficient of Retroreflection (cd/lux/m ²) - 4°/0.2° Geometry	Table 4 for Type III; Table 8 for Type VIII; or Table 9 for Type IX
Color Coordinates ²	Table 11
Luminance Factor ² (%)	Table 2

PROJECT ACCEPTANCE REQUIREMENTS:

Qualification of a product and addition to the QPL does not constitute a blanket approval of the material. The Contractor for each proposed project must submit the product and source on a Materials Questionnaire as specified in Section 106. The ME will approve the product and source on a project to project basis based on the specifications for the project. The ME will sample, test and accept the material according to the applicable Section of the *NJDOT Standard Specifications for Road and Bridge Construction*.

DISQUALIFICATION:

The ME may remove the product from the QPL for non-conformance with specification requirements or for a documented history of poor field performance. The manufacturer shall notify the ME, in writing, of any change in product formulation. Failure to notify the ME of changes in product formulation will result in disqualification.

REQUALIFICATION:

The ME will reevaluate a product which has been disqualified and removed from the QPL only after submission of a formal request along with acceptable evidence that the problems causing the disqualification have been resolved.

The ME may require the manufacturer to requalify the product for any of the following reasons:

1. To ensure that obsolete products are not kept on the list, the ME may request written confirmation from the manufacturer that the product is still available and has not changed formulation. Failure to respond to the Bureau's written request will result in the product being removed from the list.
2. If the formulation of the product has changed, the ME may require that the new formulation be requalified.
3. If the Department's standard specifications change or if the referenced ASTM or AASTHO standards change, the ME may require requalification to ensure that the product meets the new specification.