1.0 SCOPE.

1.1 This procedure covers the method that temporary pavement marking tape, type I, is evaluated.

1.2 This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the ITM use. The ITM user's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ASTM Standards.

D 6628 Specification for Color of Pavement Marking Materials


2.2 Federal Specification.

Federal Standard Color Chips 595a, No. 33538 for yellow.


Highway Capacity Manual 2000, Chapter 10, Exhibit 10-23 Default Lane Utilization Adjustment Factors

2.4 Manual on Uniform Traffic Control Devices.

Part VI Standard and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility and Incident Management Operations

3.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department’s Standard Specifications, Section 101.
4.0 SIGNIFICANCE AND USE. This ITM is used to evaluate removable construction pavement marking tape, type I. Each manufacturer’s type of temporary pavement marking tape, type I will be evaluated separately.

5.0 APPARATUS.

5.1 Retroreflectometer, Delta Model LTL-2000, Delta Model LTL-X, or Gamma Scientific Model Stripemaster II. The measurement geometry used will be 88.76° for the entrance angle $\beta_1$, 0° for $\beta_2$, and 1.05° for the observation angle. The aperture angles for both the source and receiver will not exceed 0.33°.

5.2 Hunter Lab MiniScan XE-Plus 45/0 Spectrophotometer

5.3 Calibration. Before each use of an instrument, a verification of each instrument calibration will be performed using the secondary standards that are provided with the instruments. A factory calibration shall be performed on the retroreflectometer at a minimum of once per calendar year.

6.0 PROCEDURE.

6.1 The color coordinates, x and y, and retroreflectivity readings will be taken prior to the placement and on the date of field reviews.

6.2 The manufacturer, or his representative, shall place the material on both concrete and asphalt surface pavements. Assistance is only given by the Department if requested and personnel are available. The material shall not be placed using a primer. When both colors of material are simultaneously being evaluated, there shall be three white transverse strips and three yellow transverse strips. These transverse strips shall be placed across the entire lane and at 1 ft spacing and alternating color. There shall also be four, 12 ft long, longitudinal strips. Two of the strips shall be white and two of the strips shall be yellow. The longitudinal strips shall be placed as follows: one yellow strip on the left edge of the lane, one white strip on the left wheel path, one yellow strip on the right wheel path, one white strip on the right edge of the lane.

6.3 Field review of the material will be conducted after approximately 700,000, 1,000,000, and 1,600,000 vehicles have traveled over the test area. On each field review, retroreflectivity and color readings will be taken and tape removals will be made. Retroreflectivity and color readings on the transverse lines will be taken at the left edge of the lane, left wheel path, center of lane, right wheel path and right edge of the lane. Retroreflectivity and color readings on the longitudinal lines will be taken at each end of the line. Relative ease of removal and size and number of pieces the materials break into during the removal will be noted. Visual observations of material adhesion to the roadway will be made during the reviews. Visual observations of the color and retroreflectivity will be conducted at night.
7.0 CALCULATIONS.

7.1 The estimate for vehicles traveling across the test area on a daily basis will be calculated by dividing the ADT volume by 2 to determine the directional movement of vehicular volume. The directional movement of vehicular volume will then be multiplied by the appropriate percentage, based upon the lane configuration of the roadway that is given under the heading of “Traffic in Most Heavily Traveled Lane (%)” of Exhibit 10-23 of Chapter 10 of the Highway Capacity Manual 2000. The lane containing the evaluation material will be assumed to be the most heavily traveled lane.

7.2 The average retroreflectivity reading for each color of the tape, for each time of acquiring data is determined.

7.3 The average color chromaticity readings for each color of the tape, for each time of acquiring data is determined.

8.0 REPORT. The average data reading of the test results for both colors of a manufacturer’s specific temporary pavement marking tape will be tabulated in the final report.
INDIANA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS MANAGEMENT
PRELIMINARY INFORMATION FOR PRODUCT MATERIAL EVALUATION

Trade Name: _____________________________ Date: ________________

Manufacturer: __________________________ Patented? Yes _____ No _____ Applied for _____

Address: __________________________________________________________________________
Street No (P. O. Box)          City                      State                     Zip Code

Representative: _________________________ Phone No (   )____________

Address: __________________________________________________________________________
Street No (P. O. Box)          City                      State                     Zip Code

Product Information: ________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

Materials Composition: ______________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

** Is this product considered hazardous material when disposing of non-used or surplus materials? Yes _____ No ______

** What is the shelf life of this material? Years _____ Months _______ N/A _______

Recommended Use (Primary): _______________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Recommended Use (Alternate): _____________________________________________________
________________________________________________________________________________
________________________________________________________________________________

A1 of 7
Advantages and/or Benefits: ______________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

** Materials specifications by manufacturer, installation/operation manual, literature, test results, guarantee, hazardous material data sheets, plan, picture or sketch are required to be submitted with this form. In the case of electronic devices the schematic diagram, parts list, and parts layout diagram are required to be submitted for each printed circuit board within the device.

Meets following specifications:

AASHTO: ____________________  __________________________________________

ASTM: ____________________  ______________________  _____________________

OTHER: ____________________________________________  _______________________

Use by highway authorities or similar agencies in other states.

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<thead>
<tr>
<th>Agency</th>
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<th>Remarks</th>
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** Has product ever been evaluated by and rejected for use by a governmental agency?

Yes ______ No ______ If yes, by what agency and for what reason:

____________________________________________________________________________
____________________________________________________________________________

Will demonstration be provided? Yes ______ No _______

Availability: Seasonal ______ Non-seasonal ______ Delivery at site _______

After receipt of order, are quantities limited? Yes ______ No ______
Will laboratory analysis be furnished? Yes _______ No _______

** Approximate cost: _________________ Royalty Cost: _______________________________

When was the product introduced to the market? ______________________________________

This product is an alternate for what product? _______________________________________

______________________________________________________________________________

______________________________________________________________________________

Will warranty be provided? Yes _______ No _______ If yes, for how long? _____________

Background of company, including principal products: _________________________________

______________________________________________________________________________

______________________________________________________________________________

What offices of the Indiana Department of Transportation have been contacted?

______________________________________________________________________________

Additional Information: __________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

(Attach additional sheets as necessary)
Person furnishing information: ______________________________________________________

Name

____________________________________________________

Title

Address: ______________________________________________________________________

Street No (P. O. Box)

____________________________________________________________________

City

____________________________________________________________________

State     Zip Code

Items marked ** are required to be responded to or further consideration may not be given for this product.

Please mail this form to: Traffic Evaluations Engineer
Office of Materials Management
120 S. Shortridge Rd
Indianapolis, IN 46219