
Test Procedure for**DETERMINING THICKNESS OF THERMOPLASTIC STRIPE****TxDOT Designation: Tex-854-B*****Effective Date: August 2002***

1. SCOPE

- 1.1 This method describes two procedures.
 - 1.1.1 Use Part I to measure the thickness of a thermoplastic stripe mechanically.
 - 1.1.2 Use Part II to determine stripe thickness from thermoplastic usage rates.
 - 1.2 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.
-

PART I—MEASURING THERMOPLASTIC THICKNESS

2. SCOPE

- 2.1 Use this part to measure the thickness of a thermoplastic stripe mechanically.
-

3. APPARATUS

- 3.1 *Needlepoint micrometer gauge, such as Mitutoyo Model 342-711-30.*
-

4. MATERIALS

- 4.1 *Duct tape or metal plate.*
 - 4.2 *Knife.*
-

5. PROCEDURES

- 5.1 *Measuring Line Uniformity and Thickness:*
 - 5.1.1 Take random samples at 600-m (2,000-ft.) maximum intervals. If at least three successive readings meet the minimum thickness, the Engineer may designate an alternative interval.
-

- 5.1.2 Place a strip of duct tape or metal plate across the path of the intended stripe.
Note 1—A metal plate is recommended for rougher surfaces.
- 5.1.3 Perform the application at normal speed and include beads applied at the normal rate. If there is a question concerning the thermoplastic test application, the inspector should monitor the speed of the striping truck and the setting of applicable gauges in the truck during normal operation, and compare them to the speed and gauge settings when the test is complete.
- 5.1.4 Make two cuts in the thermoplastic material across the stripe at the edges of the duct tape or plate.
- 5.1.5 Allow the stripe to cool sufficiently so that no deformation to the stripe occurs when removing the tape or plate from the roadway.
- 5.1.6 Remove the tape. Use the knife to assist with the removal.
- 5.2 *Measuring Thermoplastic Stripe:*
- 5.2.1 Measure stripe thickness with the needlepoint micrometer gauge by measuring stripe thickness at the center and at approximately 25-mm (1-in.) intervals to the edge of the stripe.
- 5.2.1.1 Take the measurement to the top of the thermoplastic, not to the top of the bead.
- 5.2.1.2 Take care not to indent the thermoplastic film with the micrometer points.
- 5.2.1.3 The thermoplastic can also be removed from the tape or plate and broken into pieces.
- 5.2.1.4 The measurement closest to the edge should be taken at least 6 mm (0.25 in.) from the edge of the stripe.
- 5.2.1.5 Take additional measurements as necessary.
- 5.2.2 The average of the readings across each sample must be equal to or above the specified minimum thickness. No reading should be more than 250 μm (10 mils) below the specified minimum thickness.

PART II—DETERMINING STRIPE THICKNESS

6. SCOPE

- 6.1 Use this part to determine stripe thickness from thermoplastic usage rates.

7. PROCEDURE

7.1 *Determining Line Thickness from Usage Rates:*

7.1.1 Determine the amount of thermoplastic and beads the applicator has on hand at the beginning of striping operations.

Note 2—This is not necessarily at the beginning of the day. For smaller jobs, the amount of material the contractor loads into the melter or striper will be the initial amount.

7.1.2 Determine the amount of material the applicator has on hand at the end of striping operations. The conditions in Section 7.1.1 may apply.

7.1.3 Subtract the final quantities from the initial quantities to determine the amount of materials used.

7.1.4 Determine the linear footage of stripe applied. Obtain this quantity from the applicator or from direct measurements.

7.1.5 Divide the quantity used by the linear footage applied and compare the value to the theoretical usage rate.

7.2 *Theoretical Usage Rate Table:*

7.2.1 The following table details the usage rates required to produce a solid 100-mm (4-in.) wide stripe. For 200-mm (8-in.) wide stripe, multiply the usage rate by two.

Table 1—Theoretical Usage Rates

Specification Thickness		Minimum Pounds of Thermoplastic			
Mils	Micrometers	Pounds per Mile	Kilograms per Kilometer	Pounds per Foot	Grams per Meter
60	1500	1,000	282	0.189	282
75	2250	1,300	366	0.246	366
100	2500	1,800	507	0.341	507

8. CALCULATIONS

8.1 Calculate the theoretical usage rates:

$$\text{Linear Footage} \times \text{lb. per ft.} = \text{Min lb. Thermoplastic Needed}$$

9. REPORT

9.1 Report locations and results in Inspector’s diary.

10. ARCHIVED VERSIONS

10.1 Archived versions are available.