Standard Method of Test for

Thermoplastic Traffic Line Material

AASHTO Designation: T 250-05 (2019)

Technical Subcommittee: 4c, Markings and Coatings

Release: Group 2 (June)

AASHTO

American Association of State Highway and Transportation Officials
444 North Capitol Street N.W., Suite 249
Washington, D.C. 20001

Standard Method of Test for

Thermoplastic Traffic Line Material

AASHTO Designation: T 250-05 (2019)

Technical Subcommittee: 4c, Markings and Coatings

Release: Group 2 (June)

AASHTO

1. SCOPE

1.1. The procedures used for testing thermoplastic traffic line material are described in this method. This includes the method for obtaining a representative test sample, preparation of the test specimens, and performing the specified tests. The material is a mixture of resins, fillers, pigments, and reflective spheres. These materials are combined by heating to obtain a product with the desired properties suitable for traffic line striping.

1.2. *This test method is divided into the following parts*:

1.2.1. Section 3, Sampling of Thermoplastic Material;

1.2.2. Section 4, Sample Meltdown and Preparation;

1.2.3. Section 5, Binder Content;

1.2.4. Section 6, Glass Bead Content;

1.2.5. Section 7, Glass Bead Grading Analysis;

1.2.6. Section 8, Reflectance, Color, and Yellowness Index;

1.2.7. Section 9, Titanium Dioxide Determination;

1.2.8. Section 10, Lead Chromate Determination;

1.2.9. Section 11, Flowability (Percent Residue);

1.2.10. Section 12, Low Temperature Stress Resistance;

1.2.11. Section 13, Bond Strength;

1.2.12. Section 14, Impact Resistance;

1.2.13. Section 15, Ring-and-Ball Softening Point;

1.2.14. Section 16, Specific Gravity;

1.2.15. Section 17, Flowability (Percent Residue) Extended Heating;

1.2.16. Section 18, Ultraviolet Light and Condensate Exposure;

1.2.17. Section 19, Hardness; and

1.2.18. Section 20, Flash Point.

1.3. The values stated in SI units are to be regarded as the standard.

Note 1—**Warning:** Due to the elevated temperatures used in these tests and the nature of the material, extreme care should be used when working with the thermoplastic materials. Use heat-resistant gloves and safety glasses or face shield when handling in the fluid state. Severe burns can result from spilled thermoplastics or mishandled equipment. Should melted thermoplastic come in contact with the skin, do not attempt to wipe off. Immediately hold or submerge the affected area under cold water. Inform someone in the immediate vicinity that an accident has occurred. Seek proper medical attention.

2. REFERENCED DOCUMENTS

2.1. *AASHTO Standards*:

- M 231, Weighing Devices Used in the Testing of Materials
- M 247, Glass Beads Used in Pavement Markings
- M 249, White and Yellow Reflective Thermoplastic Striping Material (Solid Form)

2.2. *ASTM Standards*:

- D36/D36M, Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
- D92, Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
- D792, Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D2240, Standard Test Method for Rubber Property—Durometer Hardness
- D4764, Standard Test Method for Determination by X-ray Fluorescence Spectroscopy of Titanium Dioxide Content in Paint
- D4796, Standard Test Method for Bond Strength of Thermoplastic Traffic Marking Materials
- D4797, Standard Test Methods for Gravimetric Analysis of White and Yellow Thermoplastic Pavement Marking
- D4960, Standard Test Method for Evaluation of Color for Thermoplastic Traffic Marking Materials
- E11, Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
- E313, Standard Practice for Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates
- E1349, Standard Test Method for Reflectance Factor and Color by Spectrophotometry Using Bidirectional (45°:0° or 0°:45°) Geometry
- G154, Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

2.3. *Federal Standard*:

- Federal Standard No. 141, Paint, Varnish, Lacquer and Related Materials