



WSDOT Test Method T 426

Pull-Off Test for Hot Melt Traffic Button Adhesive

1. Scope

This method describes the procedure for determining the force (psi) required to pull a Type 1 raised pavement marker, from an asphalt or concrete surface that has been adhered with hot melt button adhesive.

2. Apparatus and Materials

- a. Asphalt or concrete surface, conditioned for 24 hours at standard laboratory conditions prior to testing.
- b. Raised pavement marker – WSDOT Type 1 plastic or thermoplastic, drilled in the center to accept a threaded steel rod.
- c. Laboratory melter – as described in ASTM D5167.
- d. Threaded steel eye bolt for attaching to the raised pavement marker.
- e. Tensile testing apparatus – as described in AASHTO T 237 Section 15, fitted with a threaded steel rod with a 2 hook.

3. Procedure

- a. Pull-off tests shall be run in triplicate.
- b. Hot melt traffic button adhesive shall be heated in a laboratory melter to the manufacturer's recommended application temperature.
- c. A quantity of adhesive sufficient to squeeze out a small bead around the entire periphery of a 4 button shall be poured onto surface and a pre-drilled raised pavement marker shall be seated on the adhesive and allowed to cure for at least 4 hours.
- d. A threaded steel eye bolt shall be inserted into the pre-drilled hole in the button.
- e. The puck/block and button shall be placed in the tensile testing apparatus and the threaded hook shall be inserted in the eye bolt.
- f. Load shall be applied slowly until the button pulls off from the surface and the maximum load shall be recorded.

4. Calculation

The pull-off strength shall be calculated as follows:

$$\text{Pull-off Strength, psi} = L/A$$

$$L = \text{Maximum load, pounds}$$

$$A = \text{Surface area of Pavement marker (in}^2\text{)}$$

5. Report

The pull-off strength reported shall be the average of the three determinations.

