

**Standard Method of Test for  
Field Determination of Weight of Zinc Coating on Guardrail  
SCDOT Designation: SC-T-139 (3/2014)**

**1. SCOPE**

This method of test covers a field procedure for the determination of the weight of zinc coating on guardrail.

**2. REFERENCED DOCUMENTS**

- 2.1 AASHTO Standards
  - M 180 Corrugated Steel Beams for Highway Guardrail
  - T 65 Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
- 2.2 South Carolina Calibration Procedures
  - SC-CL-10 Calibration Procedure for Magnetic Coating Thickness Gauges

**3. APPARATUS**

- 3.1 Magnetic coating thickness gauge.

**4. FIELD CALIBRATION**

- 4.1 Each gauge shall be calibrated in accordance with SC-CL-10 at the test site prior to testing and at intervals during use, if necessary.

**5. TEST SPECIMENS**

- 5.1 Beam elements shall be selected at random from each shipment.

**6. PROCEDURE**

- 6.1 Foreign materials such as dirt, grease and corrosion products should be removed by cleaning without removing any coating material. Areas on specimens having visible defects that are difficult to remove such as flux, acid spots, dross, and oxide, should be avoided in making measurements.
- 6.2 Operate each instrument in accordance with the manufacturer's instructions. Readings should not be made closer than 13 mm (1/2 in.) from edges, holes, inside corners, etc. Due to coating variations, readings shall be taken at three (3) sites on a given beam.
- 6.3 The three (3) test sites shall be at points 2 to 4 feet from each end and at the approximate middle of the beam. (See Figure 1).
- 6.4 Three (3) spot tests shall be taken at each of the three test sites. (See Figure 2).

6.5 The readings at the three (3) sites shall be averaged to establish a value for a field test. The average shall be a minimum of 4.0 oz/ft<sup>2</sup> with no spot test less than 3.6 oz/ft<sup>2</sup>.

6.5.1. Procedure for retesting failing spot test.

6.5.1.1. When a spot test is less than 3.6 oz/ft<sup>2</sup>, additional testing shall be performed.

6.5.1.2. Six (6) additional spot tests shall be selected, three (3) on either side of the spot test in question, at six inch intervals, aligned on the same plane.

6.5.1.3. The average of these additional spot tests, excluding the original spot test, shall have a minimum coating of 3.6 oz/ft<sup>2</sup>.

## 7. DISPUTES

7.1 In the event a dispute occurs as to the validity of these test results, a specimen shall be taken from the beam area in question and tested in accordance with AASHTO T 65.

## 8. CALCULATIONS

8.1 The readings from the magnetic gauges will be in mils. Add the two readings in mils at each spot. Convert to oz/ft<sup>2</sup> by dividing the sum by 1.7.

## 9. REPORT

9.1 Test results are reported on Lab Form 953. Data and calculations are recorded on worksheet QA 1.

Figure #1

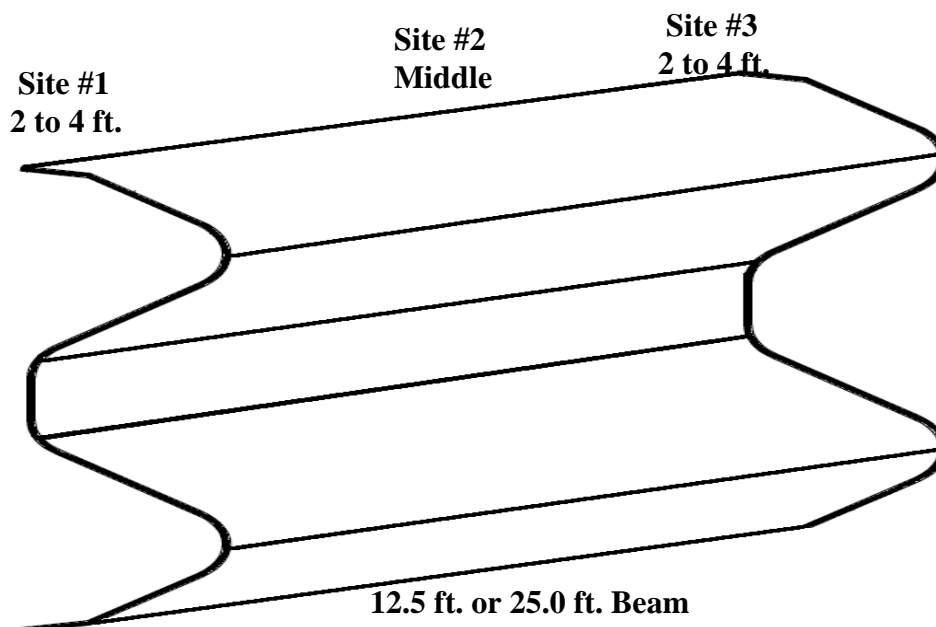


Figure #2

