

**Tennessee Department of Transportation
Division of Materials and Tests**

Procedures and Qualifications for Guardrail Manufacturer and Supplier (SOP 6-1)

Purpose: The purpose of this document is to establish the minimum qualifications for the manufacturer and supplier of guardrail including posts, blocks, bolts, washers, and other miscellaneous parts. This document will provide the requirements for testing frequencies, re-testing procedures, and product identification.

Background: Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction dated January 1, 2021, and Standard Drawings generally specify guardrail to be in accordance with AASHTO and/or ASTM Standards. These standards provide the various materials and testing procedures.

Procedures:

1. Manufacturer and Supplier Requirements – Guardrail is accepted on guarantee if it is furnished by a manufacturer or supplier who is a part of the Department’s Guarantee Program. (See Sampling and Testing Guide in SOP 1-1)
2. All guardrail and guardrail hardware (posts, blocks, bolts, washer, and other miscellaneous parts) shall be manufactured in strict accordance with the requirements below.
 - a. TDOT Standard Specifications, Sections 705, 706, and 909.
 - b. TDOT Standard Drawings – Any variations to the TDOT Standard Drawings must be submitted to the TDOT Design Division for approval.
 - c. Approved shop drawings
 - d. Plans
 - e. ASTM/AASHTO Specifications
3. Certifications for guardrail
 - a. Submit a completed DT-0044 (T-2) showing the quantities used on the project to Regional Materials and Tests.
 - b. Include with the DT-0044 (T-2) a cover letter from the installer of the rail stating the materials used on the project meet TDOT Standard Specifications and are covered by the attached certifications.

- c. A certification letter from the manufacturer of the materials for the rail, post, bolts, backup plates, blockouts, etc. showing the material was pre-approved for use by the Guardrail Guarantee Program and/or the TDOT Materials and Tests Supervisor.
- d. The requirements and certifications for the Brand Registration and Guarantee are attached (see appendix A).
- e. In the event that the fabricator does not elect to furnish a Brand Registration and Guarantee, all material shipped to a TDOT project must be accompanied by a Certified Mill Test report and shall be sampled and tested prior to use.

Note: Notify the Regional Materials and Tests Office when anchor bolts used on the project require a pull test. A Materials and Tests Inspector will perform a pull test.

4. An additional certification is required for the following items:
 - a. Wood Posts or Blockouts – If recycled composite blockouts are to be used, they must be from the Department's Qualified Products List.
 - b. Wire Stands or Cables
 - c. Reflective Sheeting
 - d. Guardrail Delineators
5. A certification letter indicating the tangent energy absorbing terminal is on the Department's QPL and this shall be stated on the certification.

APPENDIX A

The Tennessee Department of Transportation (TDOT) has a policy whereby certifications of guardrail to individual TDOT projects would not be required provided that you had furnished a Brand Registration and Guarantee in compliance with Paragraph 5.3.1 of AASHTO Designation M 180 Specifications for Corrugated Sheet Beams for Highway Guardrail. This Guarantee must be renewed annually during the month of September and will be valid for a period of one (1) year expiring December 31st of the following year. If the Guarantee which you have on file with us has expired, no more guardrail or accessories will be accepted by Guarantee until the Guarantee has been renewed. This Brand Registration and Guarantee shall be furnished to:

Ms. Heather Hall, Materials and Tests Director
Division of Materials and Tests
Tennessee Department of Transportation
6601 Centennial Boulevard
Nashville, Tennessee 37243-0360

The Guardrail Brand Registration and Guarantee must state that the material(s) furnished conform to the requirements of AASHTO M 180, ASTM A36, ASTM A123, AASHTO M 111 or ASTM A153, whichever may apply; that all manufacturing processes including galvanizing have occurred in the USA; and must contain a clause which states that the material(s) will be replaced without cost to the Department when found not to be in compliance with the above requirements.

Items that may be included in the Brand Registration and Guarantee are sheet beams, backup plates, buffer ends, end shoes, posts, block-outs, bolts, nuts, washers, and other accessories. All items furnished must be marked in accordance with AASHTO M 180, Subsection 11, Paragraphs 11.1, 11.2, 11.3 and 11.4. All bolts shall be marked in compliance with ASTM A307.

The Brand Registration and Guarantee shall be sworn to for the fabricator by a person having legal authority to bind the company with an acknowledgment by a Notary Public. The fabricator is required to keep on file at the fabrication plant copies of all tests as outlined in AASHTO M 180, Paragraph 5.3.2.

As part of the Brand Registration and Guarantee, every fabricator's plant that will supply products shall be audited by the National Transportation Product Evaluation Program (NTPEP) Audit Program (NAP) for Guardrail. A Certificate of Compliance from NTPEP must be submitted with your Brand Registration and Guarantee. Your audit reports will be reviewed when they become available, and this Brand Registration and Guarantee can be suspended based upon that report.

In the event that the fabricator does not elect to furnish a Brand Registration and Guarantee, all material shipped to a TDOT project must be accompanied by a Certified Mill Test report and shall be sampled and tested prior to use.

Please initial the following sheet and attach the documents that are required.

Guardrail Brand Registration and Guarantee

Please initial each entry and attach all documents required

The material(s) furnished shall conform to the requirements of:

_____ AASHTO M 180

_____ ASTM A36

_____ ASTM A123

_____ AASHTO M 111

_____ ASTM A153

_____ All manufacturing processes including galvanizing have occurred in the USA

_____ All items furnished must be marked in accordance with AASHTO M 180, Subsection 11, Paragraphs 11.1, 11.2, 11.3 and 11.4.

_____ All bolts shall be marked in compliance with ASTM A307.

_____ The material(s) shall be replaced without cost to the Department when found not to be in compliance with the above requirements.

_____ The Brand Registration and Guarantee shall be sworn to for the fabricator by a person having legal authority to bind the company with an acknowledgment by a Notary Public.

_____ The fabricator is required to keep on file at the fabrication plant copies of all tests as outlined in AASHTO M 180, Paragraph 5.3.2.