

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, (posts, blocks, bolts, washers,) and other miscellaneous parts. This document will provide the requirements for manufacturer and supplier, testing frequencies, re-testing procedures, and product identification.

Background- TDOT Standard Specifications 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 section 30 and 31)
2. All Guardrail and Guardrail Hardware (posts, blocks, bolts, washer, and other miscellaneous parts) products shall be manufactured in strict accordance with the requirements below.
 - a. TDOT Specifications, 705,706,909.
 - 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 meets TDOT 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, and etc. showing the material was pre-approved for use by the Guardrail Guarantee Program and/or the state materials engineer.

The requirements and certifications for the Brand Registration and Guarantee are attached (see appendix A).

In the event that the fabricator does not elect to furnish a Brand Registration and Guarantee, all material shipped to a Tennessee Department of Transportation 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 if any anchor bolts that require a pull test are used on the project. 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, must be from the Departments Qualified Products List 32.
 - b. Wire Stands or Cables
 - c. Reflective Sheeting
 - d. Guardrail Delineators
5. A certification letter indicating the tangent energy absorbing terminals is on the Departments Qualified Products List (QPL) and/or that it meets NCHRP 350 requirements and this should be stated on the certification.

APPENDIX A

The Tennessee Department of Transportation has a policy whereby certifications of guardrail to individual Tennessee DOT projects would not be required provided that you had furnished a Brand Registration and Guarantee in compliance with Paragraph 5.3.1 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 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 should be furnished to:

Mr. Gary D. Head, Engineering 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 materials furnished shall conform to the requirements of AASHTO Designation M-180, ASTM A-36, ASTM A-123, AASHTO M-111 or ASTM A-153, whichever may apply; that all manufacturing processes including galvanizing have occurred in the USA, and must contain a clause which states that the materials will be replaced without cost to the Department when found not to be in conformity with the above specifications.

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 Designation M-180, Subsection Eleven (11), Paragraphs 11.1, 11.2, 11.3 and 11.4. All bolts shall be marked in compliance with ASTM A-307.

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

In the event that the fabricator does not elect to furnish a Brand Registration and Guarantee, all material shipped to a Tennessee Department of Transportation project must be accompanied by a Certified Mill Test report and will 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 materials furnished shall conform to the requirements of;

_____ AASHTO Designation M-180

_____ ASTM A-36

_____ ASTM A-123

_____ AASHTO M-111

_____ ASTM A-153

_____ All manufacturing processes including galvanizing have occurred in the USA.

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

_____ All bolts shall be marked in compliance with ASTM A-307.

_____ A clause which states that the materials will be replaced without cost to the Department when found not to be in conformity with the above specifications.

_____ 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.

_____ The manufacturer shall submit three (3) consecutive months of mill test results (from the submittal year) upon submittal of the guarantee.

The mill test results must show the name of manufacturer, name of plant and location. Also show the mechanical properties of the base metal, conforming to the following requirements.

- Yield Point. minimum, 343 MPa (50000 psi)
- Tensile Strength. minimum, 483 MPa (70000 psi)
- Elongation, in 50 mm (2 in.) minimum, 12 percent

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