

(1012GRDRL, 01/25/18)

**SECTION 1012 GUARDRAIL MATERIALS:** of the Standard Specifications is revised to read:

**1012-1 General Requirements:**

Certificates of Compliance conforming to the requirements of Subsection 106.05 shall be submitted.

References to ARTBA in this section shall hereinafter refer to AASHTO-AGC-ARTBA "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE". ARTBA hardware drawings and specifications are available at the Roadway Engineering web site.

**1012-2 Fasteners, Rail Elements, Posts, and Blockouts:**

Guardrail fasteners, rail elements, posts, blockouts, and other components shall conform to the requirements of ARTBA. Rail elements shall be galvanized after fabrication, with fabrication to include forming, cutting, shearing, punching, drilling, bending, welding, and riveting.

Unless otherwise specified, all surfaces of guardrail elements which are exposed to traffic shall present a uniform, pleasing appearance and shall be free of scars, stains or corrosion.

**1012-3 Miscellaneous Materials:**

Nails shall be 16-penny common, galvanized. Nails for retainer strap shall be 10-penny common, galvanized.

Nuts, bolts, and washers to be used in installations for which the details are not shown on the plans nor in the ARTBA publication shall conform to the requirements of ASTM F 568 or A 307; be galvanized in accordance with the requirements of ASTM A 153, Class C; and conform to the dimensional requirements of the American National Standards Institute.

Structural steel shapes, plates, bars and strips used in fabrication of hardware and all miscellaneous steel shall conform to the requirements of ASTM A 36 and shall be galvanized in conformance with the appropriate requirements of AASHTO M 111 and M 232. They shall meet the dimensional requirements of The American Institute of Steel Construction.

Round and square structural steel tubing shall conform to the material requirements of either ASTM A 500 or A 501 and shall be galvanized in accordance with the requirements of AASHTO M 180, Type 1.

Where galvanizing has been damaged, the coating shall be repaired by applying two coats of zinc-rich primer conforming to the requirements of Section 1002.

**1012-4 Timber Guardrail, Posts and Blockouts:**

Timber for posts and blockouts shall be rough sawn (unplaned) or S4S with the nominal dimensions indicated. Any species or group of woods graded in accordance with the requirements for Timber and Posts of the Western Wood Products Association may be used.

Timber shall be No. 1 or better, and the stress grade shall be 1,200 pounds per square inch or higher.

At the time of installation, the dimensions of timber posts and blockouts shall vary no more than  $\pm 1/2$  inch from the nominal dimensions as hereinbefore specified.

The size tolerance of rough sawn blockouts in the direction of the bolt holes shall vary no more than  $\pm 3/8$  inch. Only one type of post and blockout shall be used for any one continuous length of guardrail.

All timber shall have a preservative treatment in accordance with the requirements of AASHTO M 133, American Wood Protection Association (AWPA) Standard U1 "Commodity Specification B: Posts", and AWPA Standard T1.