

ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR

(The person who receives or originates the issue and needs to forward the issue for action.)

Modify Specification _____967_____.
Section/File number

New Section _____.
Section number

Subject: Rail Elements for Guardrail

Origination date: August 27, 2002

Originator: Karen Byram

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Problem statement: Standard practice by manufacturers of guardrail is to cut and shape the steel to the desired form and then to galvanize. An alternative method of manufacturing guardrail is by galvanizing steel coils on a continuous line and then shaping and cutting the steel to the desired form. Florida Standard Specifications do not allow the continuous line type of galvanized products to be used, however, the two manufacturing methods provide materials that have equal performance. This has excluded the manufacturers of continuous line materials from being able to market their materials to the State. The disadvantage to the State has been reduced competition resulting in a potential cost savings due to bidding competition and potential loss in obtaining superior products.

Information source: Industry Contacts: Joe Gimigliano; Gregory Galvanizing
Department Staff: Karen Byram; Chemist Administrator

Background data: The current Florida Department of Transportation Standard Specifications for Road and Bridge Construction 2000, Section 967 requires all guardrail materials to meet AASHTO M 180. AASHTO M 180 specifically identifies ASTM A 653/ A 653M as a referenced document. The ASTM A 653/ A 653M method covers all methods of galvanizing, including the continuous line manufacturing. But, an exception was added in 967 to the AASHTO M 180 requirement for galvanized elements. It states that all galvanizing of rail elements shall meet ASTM A 123 [ASTM A 123M]. The problem is that the

ASTM A 123/A 123M method specifically does not apply to steel sheet that has been galvanized on a specialized or continuous line.

The ASTM A 123 [ASTM A 123M] method provides additional requirements for the coating properties, sampling, test methods, inspection, and certification of galvanized materials.

The proposed solution to the problem is to rewrite the exemption to include only those sections the ASTM A 123 [ASTM A 123M] method that are applicable to all manufacturing processes.

As a verification test of the material, the State Materials Office Chemistry Laboratory installed a sample of the Gregory guardrail, manufactured by the continuous line method, at the test deck on Tea Table Key during March 2001. The installation was designed to mimic an actual installation. The product was on the beach, facing south, and less than 10 yards from the water. On March 29th, 2002, an inspection of the guardrail was performed. Special attention was made to the cut edges and punched out holes. The rail was in excellent condition and showed the typical zinc oxidation on the surface. No rusting, flaking, peeling, staining, streaking, or other failures were noted. Cut edges were free of rusting, pitting, or other signs of degradation.

**Desired
implementation
date:**

July 2003 lettings.



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

THOMAS F. BARRY, JR.
SECRETARY

MEMORANDUM

DATE: September 27, 2002
TO: Specification Review Distribution List
FROM: Duane F. Brautigam, P.E., State Specifications Engineer
SUBJECT: Proposed Specifications Change – D9670001 – Rail Elements For Guardrail.

In accordance with Specification Development Procedures, we are resending you a copy of a proposed specification change to Section 967.

This change was proposed by Karen Byram, of the State Materials Office to change the exception to the requirements of AASHTO M 180.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after October 25, 2002 may not be considered. Your input is encouraged.

DFB/jho

Attachment

COMMENTS:

Submitted by:

Phone #:

**RAIL ELEMENTS FOR GUARDRAIL.
(REV 9-16-02)**

ARTICLE 967-1 (Page 910) is deleted and the following substituted:

967-1 Steel Guardrail.

Steel guardrail materials shall meet the requirements of AASHTO M 180, (except as specified below), and for either Class shown. Type 2 zinc coating will be required.

As an exception to the requirements of AASHTO M 180, the *coating properties, sampling, test methods, inspection, and certification related to galvanizing regardless of the method of galvanization* of the rail elements shall meet the requirements of ASTM A 123 [ASTM A 123M].

All supports, fastenings and other accessories, including bolts, nuts, washers, etc., (and including the steel trailing end-anchorage rods required to be used with aluminum guardrail) shall be galvanized as specified in ASTM A 153 [ASTM A 153M].

Acceptance of steel guardrail materials shall be based on manufacturer's certified mill analysis of test results meeting the specification limits of the ASTM or AASHTO designation as stated above. Certification of these test values, representing each shipment of guardrail materials, shall be provided to the Engineer for each project.