



*Florida Department of Transportation*

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SECRETARY

November 30, 2016

Khoa Nguyen  
Director, Office of Technical Services  
Federal Highway Administration  
3500 Financial Plaza, Suite 400  
Tallahassee, Florida 32312

Re: State Specifications Office  
Section: **962**  
Proposed Specification: **9620600 Structural Steel and Miscellaneous Metal Items**  
(Other than Aluminum). **REVISED**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification. **Revisions (highlighted) were made in response to a comment from Frank Corrado.**

The changes are proposed by Steve Duke of the State Materials Office to update an Industry reference. ASTM A325 and ASTM A490 have been withdrawn and consolidated into new ASTM F3125.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to [dan.hurtado@dot.state.fl.us](mailto:dan.hurtado@dot.state.fl.us).

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Dan Hurtado, P.E.  
State Specifications Engineer

DH/dt

Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

**962—STRUCTURAL STEEL AND MISCELLANEOUS METAL ITEMS (OTHER THAN ALUMINUM).**

**(REV ~~9-20-16~~ 11-30-16) (~~FA 11-23-16~~) (7-17)**

ARTICLE 962-6 is deleted and the following substituted:

**962-6 High-Strength Bolts, Nuts, Washers and Direct-Tension-Indicator (DTI) Devices.**

Use high strength bolts, nuts, washers and DTI devices meeting the following requirements:

Bolts: **ASTM F3125, Grade** A325 or **Grade** A-490, Heavy Hex. Only use **ASTM Grade** A490 high strength bolts with the approval of the Engineer.

Nuts: ASTM A-563, Heavy Hex. Select nuts in accordance with ASTM **A325 F3125** (**Subsection 3.2 Table 1**). If grade C, D or C3 nuts are selected, provide with a minimum Rockwell hardness of 89 HRB or a minimum Brinell hardness of 180 HB. Use nuts meeting the requirements of ASTM A194 only when approved by the Engineer.

Washers: ASTM F436 and ASTM **A325 F3125** (**Subsection 3.3 Table 1**). Use washers meeting the requirements of ASTM F844 only when approved by the Engineer.

Identifying Marks: in accordance with ASTM **A325 F3125 (Table 1)**; **ASTM A490** and ASTM A563.

DTI devices: meeting the requirements of ASTM F959. Furnish plain DTI devices for use with plain bolts if the finish coat of paint is applied after installation and testing of the DTI device and will cover the remaining gap. Otherwise, coat the DTI device in accordance with the manufacturer's recommendations.

When the Contract Documents call for uncoated weathering steel in any component of the connected part, provide Type 3 bolts and washers, and nuts with weathering characteristics. If one side of the assembly is coated and the other exposed weathering steel, coat the fastener assembly on the coated side similarly (Such as the case for weathering steel tub girders coated on the inside only).

Ensure that fastener assemblies are properly lubricated in accordance with ASTM A563 Supplementary Requirements S1 and S2.

SUBARTICLE 965-9.2 is deleted and the following substituted:

**962-9.2 Fasteners and Hardware:** When zinc coating is required in the Contract Documents, fasteners and hardware items shall be galvanized in accordance with the requirements of ASTM A153, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware, except for high strength fasteners as noted below:

1. Do not galvanize **ASTM Grade** A490 bolts.
2. Mechanically galvanize **ASTM F3215, Grade** A325 Type 1 bolts in accordance with ASTM B695, Class **505**.
3. For all anchor rods and hardware treat the coated rods, nuts and washers with chromate after coating in a water solution containing 0.2% sodium dichromate 3 ounces/10 gallons. Coat the bolt, nut and washer used in the fastener assembly by the same zinc process, and submit a test report on the zinc coating thickness.

4. For anchor rods fabricated from material having a yield strength greater than 80,000 psi, apply an electroplated zinc coating SC 3, Type II in accordance with ASTM B633.

**STRUCTURAL STEEL AND MISCELLANEOUS METAL ITEMS (OTHER THAN ALUMINUM).****(REV 11-30-16)**

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**962-6 High-Strength Bolts, Nuts, Washers and Direct-Tension-Indicator (DTI) Devices.**

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Bolts: **ASTM F3125**, Grade A325 or Grade A490, Heavy Hex. Only use Grade A490 high strength bolts with the approval of the Engineer.

Nuts: ASTM A-563, Heavy Hex. Select nuts in accordance with ASTM F3125 (Table 1). If grade C, D or C3 nuts are selected, provide with a minimum Rockwell hardness of 89 HRB or a minimum Brinell hardness of 180 HB. Use nuts meeting the requirements of ASTM A194 only when approved by the Engineer.

Washers: ASTM F436 and ASTM F3125 (Table 1). Use washers meeting the requirements of ASTM F844 only when approved by the Engineer.

Identifying Marks: in accordance with ASTM F3125 (Table 1) and ASTM A563.

DTI devices: meeting the requirements of ASTM F959. Furnish plain DTI devices for use with plain bolts if the finish coat of paint is applied after installation and testing of the DTI device and will cover the remaining gap. Otherwise, coat the DTI device in accordance with the manufacturer's recommendations.

When the Contract Documents call for uncoated weathering steel in any component of the connected part, provide Type 3 bolts and washers, and nuts with weathering characteristics. If one side of the assembly is coated and the other exposed weathering steel, coat the fastener assembly on the coated side similarly (Such as the case for weathering steel tub girders coated on the inside only).

Ensure that fastener assemblies are properly lubricated in accordance with ASTM A563 Supplementary Requirements S1 and S2.

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1. Do not galvanize Grade A490 bolts.
2. Mechanically galvanize **ASTM F3215**, Grade A325 Type 1 bolts in accordance with ASTM B695, Class 55.
3. For all anchor rods and hardware treat the coated rods, nuts and washers with chromate after coating in a water solution containing 0.2% sodium dichromate 3 ounces/10 gallons. Coat the bolt, nut and washer used in the fastener assembly by the same zinc process, and submit a test report on the zinc coating thickness.
4. For anchor rods fabricated from material having a yield strength greater than 80,000 psi, apply an electroplated zinc coating SC 3, Type II in accordance with ASTM B633.

9620600.D01

All Jobs