

4600501 STRUCTURAL STEEL AND MISCELLANEOUS METALS
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comments: (11-28-11)

As proposed –

460-5.1 General: Use *bolts as follows:*

1. Use *galvanized* ASTM A 325 *Type 1* bolts in all bolted structural steel connections *that are primed before installation of the bolts.*

2. Use *either black or galvanized* ASTM A 325 *Type 1* bolts in all bolted structural steel connections *that are to be primed after installation of the bolts.*

3. Use *black* ASTM 325 *Type 3* bolts in all bolted structural steel connections for *weathering steel that is to remain unpainted.*

4. Use *the bolts as specified for,* ~~unless the~~ connected assemblies or parts *that* are designated as miscellaneous components ~~and where~~ the fastener ~~assembly~~*type* is specified elsewhere in the Contract Documents.

-Tighten ASTM A 325 bolts in accordance with the procedures specified below for turn-of-nut or direct-tension-indicator (DTI) tightening.

Lubricate and maintain consistency in lubrication of fastener assembly during Rotational Capacity (RC) testing and installation. Assemblies that exhibit a loss of lubrication, as determined by the Engineer, may be relubricated and retested prior to installation.

Use ASTM A 490 bolts only with the approval of the Engineer. Provide procedures in accordance with for the handling, lubrication, installation, tightening and testing of ASTM A 490 bolts. Do not install ASTM A 490 bolts without prior approval of the procedures by the Engineer.

When the Engineer approves ASTM A 307 bolts for use in miscellaneous components, tighten them such that the plies of the joint are in firm contact. Use three to five impacts of an impact wrench or the full effort of a person using an ordinary spud wrench to obtain a snug connection.

Fasten aluminum, other materials or assemblies of dissimilar materials in accordance with the Contract Documents.

Install ordinary rough or machine bolts and nuts in accordance with the Contract Documents.

1. If the field bolts are to be galvanized, some consideration and stipulation should be made as to whether they should be hot-dipped or mechanical galvanized. The latter is usually preferred due to a more uniform coating thickness and fewer thread fit issues.

Response:

2. If the galvanized bolts are to be painted, should they be stipulated as “no quenching”? Does that not enhance the bonding of the paint to the galvanizing?

Response:

3. If the galvanized bolts are to be painted, what is the required preparation prior to painting? Solvent wipe? Pressure wash? Brush blasted? Is a profile required? Does this change between quenched or non-quenched? If so how?

Response:

4. If the galvanized bolts are not to be painted, some rusting will occur, since the installation process, and tightening of the bolts, will result in removal of some of the zinc galvanizing at the edges of the bolt faces. Will some rusting be acceptable? How much? How will that be measured? If not acceptable, then how should it be repaired? With a brushed coat of mastic?

Response:

D4

Comments: (12-20-11)

460-5.1 General:

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We recommend against the use of galvanized bolts due the problems with bolt tightening vs the galvanizing on the threaded parts. This is why I thought we went back to black bolts (and paint) several years ago.

Response:

D3

Jennifer Williams

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Comments: (12-22-11)

District Three staff has reviewed the subject document and we have the following comment to offer.

There have been cases of galvanized bolts giving erroneous torque measurements due to the threads being fouled by the galvanization. Was there any consideration given to requiring direct-tension-indicator (DTI's) when galvanized bolts are used?

Response:
