

“?” about something related to structural steel design or construction, *Modern Steel Construction's* monthly Steel Interchange column is for you! Send your questions or comments to solutions@aisc.org.

TC bolts were used in a bolted splice for W8s. The beams have corrugated deck on top of them that will receive 6 to 12 in. of concrete, and the assembly forms a ramp for foot traffic. The engineer wants us to remove the TC bolts and replace them with slip-critical bolts. I am under the impression that slip-critical is a connection and not a type of bolt. Is this a valid point from the inspector? Do we have to replace the bolts, or is the use of TC bolts acceptable for this condition?

You are correct that slip-critical (SC) refers to a type of connection, while TC refers to a type of bolt. Furthermore, TC bolts often are used in SC connections.

TC bolts are a product that is central to one of the four methods permitted by the RCSC *Specification* to achieve pretension in a bolt, as is required in SC connections. As long as the requirements in the RCSC *Specification* for this method are followed, TC bolts are acceptable in SC connections.

Aman el Gebremeskel, P.E.

AISC 341-05 Section 6.3 specifies a minimum Charpy V-notch value for structural steel in the SLRS with flanges 1½ in. and thicker. Commentary Section C6.3, however, states that steel with flanges exceeding 2 in. is subject to the same requirement. I assume the Standard is correct and the Commentary is incorrect? Please verify.

There does not appear to be an inconsistency between the *Seismic*

Manual AWS D1.1 requirements for these welds. Look for Manual Table 8-2 and the Specification Table J2.2 to both be based on a function of R , rather than the wall thickness in the next editions. For the GMAW process, the proposed draft lists the effective weld size as $\frac{5}{8}R$ for the flare-bevel groove weld.

Kurt Gustafson S.E., P.E.

In discussions with several engineers, I am hearing it said that the 13th edition is forcing engineers to abandon the ASD method, and to conform to the LRFD method.

Two things that I remember from this year's AISC seminar on the 13th edition are:

- 1. The LRFD strength is equal to 1.5 times the ASD strength, and**
- 2. Either approach can be used, and the designer just has to remain consistent with the chosen method during the calculation.**

Unfortunately, I am not knowledgeable enough with the 13th edition to convince them that ASD is still permitted. Can you explain this a little more convincingly?

It remains completely viable—and familiar—to use ASD with the 13th edition. You may remember from the seminar you attended that all examples were worked in both ASD and LRFD, and many comparisons showed where provisions were identical or improved in the 13th edition ASD compared to the 9th edition ASD.

The two points that you list form the basis of the “unified” specification. The levels of safety are essentially equivalent regardless of which load combinations in ASCE 7 the designer chooses to use. These were good points to bring away from the seminar.

The 2005 AISC

Manual (page 8-61). The effective weld size (E) is shown as $\frac{5}{8}t$. In Table J2.2 of the Manual, the effective weld size of a flare-bevel groove weld is given as $\frac{5}{8}R$ for the GMAW process. Which one is correct?

The Effective weld size shown in Table 8-2 (page 8-61) of the 13th edition *Steel Construction Manual* was based on the 2004 AWS D1.1 requirements. This effective size for flare-bevel groove welds has been revised in the 2006 AWS D1.1 and will vary based on the weld process used. The current draft of the 2010 AISC *Specification* includes a revision to update the provisions for flare-bevel groove welds to be consistent with the cur-

steel interchange

The complete collection of Steel Interchange questions and answers is available online. Find questions and answers related to

Kurt Gustafson is the director of technical assistance and Amanuel Gebremeskel is a senior engineer in AISC's Steel Solutions Center. Charlie Carter is an AISC vice president and the chief structural engineer.

Steel Interchange is a forum to exchange useful and practical professional ideas and information on all phases of steel building and bridge construction. Opinions and suggestions are welcome on any subject covered in this magazine.

The opinions expressed in Steel Interchange do not necessarily represent an official position of the American Institute of Steel Construction, Inc. and have not been reviewed. It is recognized that the design of structures is within the scope and expertise of a competent licensed structural engineer, architect or other licensed professional for the application of principles to a particular structure.

If you have a question or problem that your fellow readers might help you solve, please forward it to us. At the same time, feel free to respond to any of the questions that you have read here. Contact Steel Interchange via AISC's Steel Solutions Center:



One East Wacker Dr., Suite 700
Chicago, IL 60601
tel: 866.ASK.AISC • fax: 312.803.4709

[www.aisc.org](#) @ [www.aisc.org](#)

