

# steel quiz

**LOOKING FOR A CHALLENGE?** *Modern Steel Construction's* monthly Steel Quiz tests your knowledge of steel design and construction. The answers for most of the questions this month can be found in the 2010 AISC *Code of Standard Practice (COSP)* and the AISC *Specification for Structural Steel Buildings*. Both are available as free downloads at [www.aisc.org/freepubs](http://www.aisc.org/freepubs).

- 1 Are base plates and bearing plates considered structural steel?
- 2 True/False: The 2010 *COSP* allows delegation of connection design work by the Structural Engineer of Record to the steel detailer.
- 3 Is there a difference between Contract Documents and Design Drawings?
- 4 If members or trusses without specified camber have an incidental camber, what does the 2010 *COSP* say the fabricator should do?
  - a) Remove the incidental camber by heat straightening.
  - b) Ignore the incidental camber and continue fabrication.
  - c) Notify the Engineer of Record and seek a solution.
  - d) Fabricate the member or truss so that the incidental camber is upward after erection.
- 5 True/False: The 2010 AISC *COSP* requires that erection drawings be released to the erector prior to their completion.
- 6 How does the AISC *Specification* become applicable in a project?
- 7 True/False: The 2010 AISC *COSP* becomes applicable in a project by being referenced in the AISC *Specification*.
- 8 Which ASTM specification should be used when ordering rectangular hollow structural sections (HSS) with minimum specified yield strength of 50 ksi?
  - a) ASTM A53 Grade B
  - b) ASTM A500 Grade B
  - c) ASTM A500 Grade C
  - d) ASTM A501 Grade B
- 9 What is the outside corner radius limit in ASTM A500 for square and rectangular HSS members?
  - a) 1.5 times the thickness of the HSS wall
  - b) 2 times the thickness of the HSS wall
  - c) 2.5 times the thickness of the HSS wall
  - d) 3 times the thickness of the HSS wall
- 10 True/False: Internal protection from corrosion of HSS is not required by the AISC *Specification*.

# steel quiz ANSWERS

- 1 Yes, but there is an exception. The newly released 2010 AISC *Code of Standard Practice*, which is available as a free download at [www.aisc.org/freepubs](http://www.aisc.org/freepubs), has clarified the classification of base plates and bearing plates. Section 2 of the *COSP* states that base plates and bearing plates are structural steel when they are attached to the structural steel frame; but not when they are loose items.
- 2 False. Option 3 in Section 3.1.2 of the 2010 *COSP* allows delegation of connection design work by the Structural Engineer of Record to another licensed professional engineer working for the fabricator.
- 3 Yes. According to the definitions presented in the glossary of the 2010 *COSP*, the Design Drawings are a part of the Contract Documents, which also include specifications, the contract itself, etc.
- 4 (d) According to Section 6.4.3 of the 2010 *COSP* the fabricator shall fabricate the member or truss so that any incidental camber is upward after erection.
- 5 False. Section 4.7, which is newly added to the 2010 *COSP*, requires that erection drawings must be provided to the erector in a timely manner. The Commentary goes on to clarify that this may include release of preliminary erection drawings, if requested by the erector.
- 6 The AISC *Specification* is referenced in model building codes, such as the *International Building Code*. The model building code in turn is commonly adopted by reference by a locality (the Authority Having Jurisdiction), which thereby makes it into law for that jurisdiction.
- 7 False. The AISC *COSP* becomes applicable to a project by reference in the project contract. It also has standing within the legal system as the standard of custom and usage, which means that the courts will apply its specific provisions when a contract does not contain a specific provision to address a situation that arises.
- 8 (c) Both ASTM A500 Grade C and ASTM A501 Grade B specifications can be used to obtain rectangular HSS with a minimum specified yield strength of 50 ksi. However A500 product is readily available for purchase, whereas A501 is a product that should be confirmed for availability before specification. For further information see Table 1-1 of *AISC Steel Design Guide 24*, which is available at [www.aisc.org/epubs](http://www.aisc.org/epubs) as a free download for AISC members and for purchase by others.
- 9 (d) The maximum outside radius of square and rectangular ASTM A500 HSS corners is  $3t$ , where  $t$  is the wall thickness.
- 10 True. The AISC *Specification* does not require internal protection of HSS against corrosion. The Commentary to Section B3.11 states that internal protection is needed only in open HSS where a change in air volume by ventilation or direct flow of water is possible. It adds that HSS subject to temperature gradient that would cause condensation also may require protection.

Anyone is welcome to submit questions and answers for Steel Quiz. If you are interested in submitting one question or an entire quiz, contact AISC's Steel Solutions Center at 866.ASK.AISC or at [solutions@aisc.org](mailto:solutions@aisc.org).

