

# steel quiz

**LOOKING FOR A CHALLENGE?** *Modern Steel Construction's* monthly Steel Quiz tests your knowledge of steel design and construction. Most of the answers for this month's quiz can be found in the 2010 AISC *Code of Standard Practice* (AISC 303-10), which is available as a free download on the AISC website, [www.aisc.org/freepubs](http://www.aisc.org/freepubs).

- 1 According to Section 10 of the AISC *Code of Standard Practice*, what additional information must be shown in the contract documents when specifying Architecturally Exposed Structural Steel (AESS)?
  - a) Specific identification of AESS members and components
  - b) Any tolerances for AESS that are more restrictive than those found in Section 10 of the *Code*
  - c) Any requirements for a mock-up panel for inspection prior to the start of fabrication
  - d) All of the above
- 2 In Section 10 of the *Code*, which of the following is acceptable to remain on AESS?
  - a) Stamped or raised manufacturer's identification marks
  - b) Seams of HSS
  - c) A and B
  - d) None of the above
- 3 True/False: Architecturally Exposed Structural Steel (AESS) requirements apply only when members or components are designated as AESS.
- 4 True/False: It is always necessary to finish or grind welds of AESS members.
- 5 True/False: Section 10 of the *Code* notes that weathering steel designated as AESS must be prepared to category SSPC-SP6.
- 6 A complete-joint-penetration (CJP) groove weld is utilized in a joint between members that are specified in the contract documents as AESS. The joint selected is one that requires a backing bar. Is the backing bar required to be removed?
- 7 True/False: For AESS, weld show through is acceptable.
- 8 True/False: Castings used in connections are considered structural steel per the *Code*.
- 9 True/False: Cast connections are a new idea in building and bridge structures.
- 10 Which of the following are prequalified in ANSI/AISC 358 for use in SMF and IMF?
  - a) The Kaiser Bolted Bracket
  - b) The CastConnex connector
  - c) The ConXtech ConXL connection
  - d) A and C

ANSWERS ON THE NEXT PAGE

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- 1 (d) This information for AESS is in addition to that required by the *Code* for non-AESS members. Further information on AESS is available in the supplement "Architecturally Exposed Structural Steel," which appeared in the May 2003 issue of *Modern Steel Construction*. Download it at [www.aisc.org/aess2003](http://www.aisc.org/aess2003).
- 2 (c) Section 10.2 of the *Code* states the default condition that manufacturer's identification marks shall not be filled, ground or otherwise removed and seams of HSS are acceptable as produced.
- 3 True. See Section 10 of the *Code* for AESS requirements.
- 4 False. As stated in Section 10.2.5 of the *Code*, "...Finishing or grinding of welds shall not be necessary, unless such treatment is required to provide for clearances or fit of other components."
- 5 True. This section also prohibits erection marks or other painted marks on surfaces that are exposed to view in the completed structure. These requirements for weathering steel are discussed in the article "Properly Prepared," which appeared in the April 2008 issue of *Modern Steel Construction*. The article is available as a free download at [www.modernsteel.com/backissues](http://www.modernsteel.com/backissues).
- 6 No, the backing bar can remain in place. If other treatment is desired, this must be stated in the contract documents.
- 7 True, unless a specific visual acceptance criterion for weld show-through is specified in the contract documents as indicated in Section 10.2.3 of the *Code*.
- 8 False. Castings fall into Section 2.2 of the *Code*, which lists those items that are considered other steel, iron or metal items. When cast connections, such as the Kaiser Bolted Bracket ([www.boltedbracket.com](http://www.boltedbracket.com)), Cast Connex ([www.castconnex.com](http://www.castconnex.com)), or ConXtech ([www.conxtech.com](http://www.conxtech.com)) connections, are used in a project, the contract documents should be clear about who is to procure and provide such connection elements.
- 9 False. While many new ideas have developed in recent years, cast steel connections are not new in buildings or bridges. More information can be found in the article "Steel Castings in Architecture and Engineering," from the April 2003 issue of *Modern Steel Construction*. The article is available as a free download at [www.modernsteel.com/backissues](http://www.modernsteel.com/backissues).
- 10 (d) The Kaiser Bolted Bracket and the ConXtech ConXL connection are two of the prequalified connections currently listed in ANSI/AISC 358. The CastConnex connector is a node for braced frames, not moment frames, and therefore ANSI/AISC 358 is not relevant to it.



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).