

steel quiz

LOOKING FOR A CHALLENGE? *Modern Steel Construction's* monthly Steel Quiz tests your knowledge of steel design and construction. Most answers can be found in the 2005 *Specification for Structural Steel Buildings*, available as a free download from AISC's website, www.aisc.org/2005spec. Where appropriate, other industry standards are also referenced.

- 1 How many design guides does AISC currently publish?
- 2 Are serviceability requirements covered in detail in any AISC publication?
- 3 Which of the following beams generally should not be cambered?
 - (a) spandrel beams
 - (b) beams with cantilevered end(s)
 - (c) beams in knee-braced frames
 - (d) beams with moment-connected ends
 - (e) all of the above
- 4 It is commonly recommended to specify camber only when the required camber is greater than:
 - (a) $\frac{3}{4}$ in.
 - (b) $\frac{1}{2}$ in.
 - (c) $\frac{1}{4}$ in.
 - (d) both
 - (e) (a) and (b) are common
- 5 True/False: According to Section 6.4 in the AISC *Code of Standard Practice* camber is measured in the unstressed position in the fabrication shop.
- 6 When checking a steel-framed composite floor for vibration, which live load value is commonly used?
- 7 Staggered truss systems are commonly used in which applications?
 - (a) buildings that require low floor-to-floor heights
 - (b) where long column-free spans are required
 - (c) where speed of construction is important
 - (d) all of the above
- 8 Which AISC Design Guide contains historic shape data and section properties that can be used when a project involves an existing building?
- 9 True/False: Across all industries there are approximately 100 welding processes in use today.
- 10 True/False: Generally the most economical weld type to use is the PJP groove weld.

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- 1 AISC presently has 23 Design Guides. The most recent three are No. 21 (*Welded Connections—A Primer for Engineers*), No. 22 (*Façade Attachments to Steel-Framed Buildings*) and No. 23 (*Constructability of Structural Steel Buildings*). All are available as PDF downloads at www.aisc.org/epubs (free for AISC members; non-member may purchase).
- 2 AISC Design Guide No. 3 *Serviceability Design Considerations for Steel Buildings*, Second Edition, addresses serviceability topics.
- 3 (e) all of the above.
- 4 (a) $\frac{3}{4}$ in.
- 5 True.
- 6 According to AISC Design Guide No. 11 *Floor Vibration Due to Human Activity*, the expected live loads, rather than design live loads, should be used for vibration related checks. The value used is usually much less than the design live load.
- 7 (d) AISC Design Guide No. 14 *Staggered Truss Framing Systems* provides information on staggered truss systems.
- 8 AISC Design Guide No. 15 *AISC Rehabilitation and Retrofit Guide: A Reference for Historic Shapes and Specifications* contains historic section properties and discussions on the retrofit and rehabilitation of existing structures.
- 9 True. As noted in AISC Design Guide No. 21 *Welded Connections—A Primer for Engineers*, there are approximately 100 welding processes in use across all industries. The building construction industry commonly uses only a few of these: SMAW, FCAW, SAW, GMAW, ESW/EGW. Please see AISC Design Guide 19 for more on these processes.
- 10 False. Generally speaking, fillet welding is most economical. Design Guide No. 21 provides extensive guidance on economy in welding.

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.

