

# steel quiz

The answers to this month's steel quiz can be found on AISC's website,  
[www.aisc.org](http://www.aisc.org).

- 1 Acronyms are commonly used to describe various organizations in the steel construction industry, but do you know the scope or mission of these organizations? Match each industry organization acronym with its appropriate scope or applicable material/function.  
a) SSPC                      1) Structural steel  
b) NAAMM                  2) Coatings  
c) AISC                      3) Architectural metals
- 2 More of the same.  
a) SSINA                    1) Metal buildings  
b) IFI                        2) Fasteners  
c) ASTM                    3) Stainless steel  
d) MBMA                    4) Material standards/testing
- 3 And one last set.  
a) AWS                      1) Cold-formed steel  
b) AISI                      2) Welding  
c) AGA                      3) Galvanizing
- 4 True/False: There are guideline documents produced by the AASHTO/NSBA Steel Bridge Collaboration to address the design, fabrication and erection processes for the structural steel bridge community.
- 5 True/False: One of those guideline documents defines steel bridge erection as the process of transporting, handling and assembling steel bridge components to result in a bridge structure that meets all the geometric and structural requirements of the contract documents.
- 6 True/False: Bridge girders must be stabilized until adjacent girders are erected.
- 7 True/False: The minimum edge distance in the 2010 AISC *Specification* Section J3.5 varies based on whether the holes are thermally cut or punched.
- 8 For angles, the inside corner fillet radius can be estimated from tabulated data by subtracting which of the following dimensions from the k-dimension?  
a)  $t$                       b)  $b$                       c)  $A$                       d)  $h$
- 9 This document provides guidance for items that are to be included on the shop and erection drawings, unless the contract documents specify otherwise.
- 10 True/False: The system used for erection marks is a contractual matter and is not specifically addressed in the AISC *Code of Standard Practice*.

TURN PAGE FOR ANSWERS

- 1 a/2) SSPC (The Society for Protective Coatings) is concerned with the use of coatings (both paint and galvanizing) to protect steel structures.  
b/3) NAAMM (National Association of Architectural Metal Manufacturers) covers a wide variety of architectural metal products (such as stairs and railings) for building construction.  
c/1) OK, we hope you know this one. AISC (American Institute of Steel Construction) addresses structural steel design and construction for buildings and bridges.
- 2 a/3) SSINA (Specialty Steel Industry of North America) represents producers of specialty steel, including a variety of products such as bar, rod, wire, angle, plate, sheet and strip in stainless steel and other specialty steels.  
b/2) IFI (Industrial Fasteners Institute) represents the interests of the manufacturers of mechanical fasteners and formed parts.  
c/4) ASTM (American Society for Testing and Materials) develops international voluntary consensus standards.  
d/1) MBMA (Metal Building Manufacturers Association) promotes the use of metal buildings.
- 3 a/2) AWS (American Welding Society) promotes welding.  
b/1) AISI (American Iron and Steel Institute) promotes the use of steel in general and develops ANSI standards for cold-formed steel design.  
c/3) AGA (American Galvanizers Association) promotes the use of hot-dip galvanizing for corrosion control.
- 4 True. There are several standards ranging from "Shop Detail Drawing Review/Approval Guidelines" to "Guidelines for Design Details." These are free downloads on the AISC website at [www.aisc.org/contentNSBA.aspx?id=20130](http://www.aisc.org/contentNSBA.aspx?id=20130).
- 5 True. S10.1-2007 *Steel Bridge Erection Guide Specification* is a standard that was developed by AASHTO/NSBA to address many aspects of steel bridge design and construction. It is a free download at [www.aisc.org/WorkArea/showcontent.aspx?id=20120](http://www.aisc.org/WorkArea/showcontent.aspx?id=20120).
- 6 True. Girders are stabilized with falsework, temporary bracing and/or holding cranes until a sufficient number of adjacent girders are erected with diaphragms and/or cross-frames connected to provide the necessary lateral stability and to make the structure self-supporting.
- 7 False. The minimum edge distance, whether for punched or thermally cut holes, is found in AISC *Specification* Section J3.5 and is based on the bolt diameter to be used. This is a change from previous versions of the *Specification*.
- 8 a) The leg thickness dimension is used to estimate the inside corner fillet radius. The leg thickness and *k*-dimension are listed in Table 1-7 in the 14th Edition AISC *Steel Construction Manual* and also in the AISC Shapes Database.
- 9 The AISC *Code of Standard Practice*. Section 4 in the *Code* outlines what is to be included on shop and erection drawings. The *Code* gives a general outline and requires that shop and erection drawings be "complete" and provide sufficient information for the piece to be fabricated or erected. Similar requirements for contract documents are stated in Section 3.
- 10 True. This issue is discussed in the 3rd Edition of AISC's *Detailing for Steel Construction*. The section on "Locating Marks" in Chapter 6 describes common practice as follows:  
"The shop places erection marks on the left end of pieces detailed in horizontal or diagonal positions and at the bottom of pieces detailed in the vertical position. Therefore, placement of these marks on the erection drawings must follow the same system. This marking system, along with the fact that the marks are placed on steel to read right-side-up, enables the erector to position most of the members in a structure by referring to the location of marks on the drawings.  
Some fabricators prefer to use variations of this system. For example, the compass direction is noted on some members, notably columns. Thus: 'Mark Face A North.' Likewise, members such as long girders or trusses, which cannot be turned at a job site, will require a compass direction on the appropriate end so it will be shipped that way (i.e., with the end pointed in the proper direction upon its arrival at the job site)."



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).