Steel Quiz

Steel Quiz, a monthly feature in Modern Steel Construction, allows you to test your knowledge of steel design and construction. Answers can generally be found in the LRFD *Manual of Steel Construction*, 2nd edition, but other industry standards are often referenced.

If you or your firm are interested in submitting a *Steel Quiz* question or column, please contact:

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Happy holidays to **Nicholas A. Vaini** at United Steel Deck in Peru, IL who contributed questions to this month's *Steel Quiz*.

Questions

1. What is the most common diameter of a shear stud connector?

2. What is the minimum bearing for a long span joist (ex. 40LH12)?

3. What is the difference between form deck and composite deck?

4. What is the minimum bearing for a pourstop?

5. What is the minimum bearing for a roof deck finish strip?

6. How far should a shear stud extend above the top of the deck flute?
   a. a wee bit
   b. a whole lot
   c. 1/2"
   d. 1-1/2"

7. True or false: a 20 gage deck is thicker than an 18 gage deck.

8. What is the thickness tolerance for metal decks (in percent)?

9. What ASTM specification covers galvanized steel deck?
   a. A992
   b. A653
   c. A500
   d. WD-40

10. What ASTM specification should the galvanizing itself meet?
    a. A588
    b. F1554
    c. A924
    d. Huh?

Turn page for answers

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Answers

1. ¾".
2. 4" minimum on steel supports; 6" minimum on masonry.
3. Form deck is only used as formwork for a concrete slab. Composite deck is designed to act compositely with the concrete slab; it is a structural element.
4. 2".
5. ½".
6. d. 1-1/2" according to AISC LRFD *Specification* section I3.5a.
7. False. The lower the gage number, the thicker and heavier the deck.
8. ASTM and SDI standards permit a tolerance of 5%.
9. b. ASTM A653.
10. c. ASTM A924 .

Some reader comments–better late than never:

Regarding the April 2000 Quiz, Question 1: The given answer that a 5/16" maximum fillet weld size can be made with one pass using SMAW is only 50% true. That applies only to horizontal and overhead positions. In the flat position it can be 3/8" and in the vertical it is 1/2" (see Table 3.7 of AWS D1.1-2000).

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In the July 2000 issue of Modern Steel Construction, I would like take issue with the answer to Question 3. The difference between filler metal and weld metal is not "somewhat esoteric" as stated in the answer. The composition and properties of filler metal and weld metal can be quite different, depending on a lot of factors. These include dilution with the base metal, type of flux and/or shielding gas, the electrical parameters, travel speed, preheat, etc. That is why welding procedure qualification testing is vital to make sure that the designer is getting what he or she specified, regarding strength, toughness, and other properties, in the joint.

Greg Pike
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Just opened up my November issue of *Modern Steel Construction* and went to my favorite place, the *Steel Quiz*. Question 5 is "Pound for pound, what is the most expensive material in a steel structure?" I was shocked that the answer was not the most obvious one...the RFI, of course.

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