Connection Design: Tips, Tricks & Lessons Learned
Quiz for Session 5: Vertical Bracing Connections – March 11, 2019
Due: April 1, 8:00 a.m. EDT – Submit through the online form

AISC Night School

1. When using the Uniform Force Method (UFM), the portion of the vertical component of the brace force that goes to the column is:
   a. $P(\alpha/r)$
   b. $P(\beta/r)$
   c. $P(e_c/r)$
   d. $P(e_b/r)$

2. When using the UFM, the portion of the vertical component of the brace force that goes to the beam is:
   a. $P(\alpha/r)$
   b. $P(\beta/r)$
   c. $P(e_c/r)$
   d. $P(e_b/r)$

3. To determine the transfer forces in steel-to-steel connections with no contribution from the diaphragm…
   a. use horizontal component of the brace.
   b. cut a section on each side of the column and sum forces to determine the unbalanced force.
   c. use 50% horizontal component of the brace.
   d. use the maximum of answers a and b.

4. Where are slip-critical joints needed?
   a. At all vertical bracing connections
   b. If oversized holes are used
   c. If the force is applied perpendicular to the slot
   d. Both b and c

5. At chevron connections, stability bracing for the compression brace can be provided by which of the following?
   a. Only full depth stiffeners
   b. A beam framing into the brace work point that covers 3/4 the T-dimension of the chevron beam
   c. A beam framing into the brace work point that covers 1/2 the T-dimension of the chevron beam
   d. Full depth connections at the end of the chevron beam

6. For angle bracing that is bolted to gusset plates, the work line should be located…
    a. at the center of gravity of the angle.
    b. at the center of the connected angle leg.
    c. at the first bolt gage, g_1.
    d. between the bolt gages, g_1 and g_2.

7. For R>3 seismic design,
    a. only the lateral column splices need to be designed for shear.
    b. only the lateral column splices in a moment frame need to be designed for shear.
    c. both the lateral and gravity column splices need to be designed for shear.
    d. the lateral column splices need to be designed for the full shear strength of the smaller column at the splice.

8. Double-angle braces designed as a built-up member…
    a. shall also be checked as two single angles acting independently.
    b. require stitch plates.
    c. shall have fully pre-tensioned bolts with a Class A or Class B faying surface, if bolted to the gusset.
    d. Both b and c

9. True or False: Transfer forces should be noted on the contract documents.
    a. True
    b. False

10. True or False: At W-Section bracing connected to the gusset with claw angles, oversized holes are required in the claw angles or gusset to account for possible overrun in the brace.
    a. True
    b. False