



1. Panel zone shear in the column web of a beam-to-column gravity moment connection...
 - a. Only exists when the design beam moments are balanced.
 - b. Never exists.
 - c. Exists when the design beam moments are unbalanced.
 - d. Is determined directly from the larger of the two design beam moments.

2. Transfer forces at a moment frame joint...
 - a. May affect both the moment beam flange and web connections, but do not affect other structural framing members.
 - b. Only affects the flanges of the moment frame beam.
 - c. May affect the both the moment beam flange and web connections, as well as the flange and web connections of the adjacent collector beam.
 - d. Do not apply. Transfer forces only exist in braced frames.

3. Beam-to-Beam moment connections with equal depth beams...
 - a. Are convenient because they can be directly welded with no real erection concerns.
 - b. Can be problematic due to erection and mill tolerances such as flange tilt and over/underrun.
 - c. Should be avoided whenever possible.
 - d. Are usually shop welded.

4. True or False: In a bolted flange plate moment connection, the distance from the face of the support to the first row of bolts in the flange connection should always be the same as to the bolted beam web connection.
 - a. True
 - b. False

5. Having relatively heavy moment frame beams, with large design moments, framing to relatively light columns...
 - a. Ensures clean columns.
 - b. May lead to fabrication issues when welding relatively thick continuity plates in column sections with relatively thin flanges.
 - c. Lead to no real fabrication issues if the beam moments are 100% balanced gravity loads.
 - d. Produces relatively large column panel zone shear if the beam moments are 100% balanced gravity loads.



Connection Design: Tips, Tricks & Lessons Learned

Quiz for Session 4: Moment Connections – March 4, 2019

Due: March 25, 8:00 a.m. EDT – Submit through the online form

6. When a wide flange moment frame beam frames to the weak axis of a wide flange column...
 - a. Stiffener/diaphragm plates should be no thicker than one-half the thickness of the beam flange.
 - b. Stiffener/diaphragm plates should be no thicker than the thickness of the beam flange.
 - c. Stiffener/diaphragm plates should be thicker than the beam flange to sufficiently account for potential erection and mill tolerances.
 - d. Stiffener/diaphragm plates should not be welded to the inside face of the column flanges.

7. In a two-sided strong axis moment frame joint with unequal-depth wide flange beams framing to a wide flange column...
 - a. Two separate column panel zones may develop when the tops of beams are the same.
 - b. A dispute may arise when the sum of the beam moments are unbalanced.
 - c. The sum of the beam top flange forces are used to check column flange bending.
 - d. Bolted flange plate connections cannot be used.

8. The welds used to attach unbeveled web doubler plates at the flanges of wide flange columns...
 - a. Must be two-sided fillet welds.
 - b. Must be one-sided fillet welds.
 - c. Are CJP welds that require magnetic particle testing inspection.
 - d. Are referred to as “double plate welds” in the 2016 AWS D1.8, and do not require magnetic particle testing inspection.

9. The welds used to attach continuity plates in wide flange columns...
 - a. Are sized to transfer the full calculated beam flange force.
 - b. Are sized based on the contact surfaces of the plates with the column flanges and web.
 - c. Are sized based on a free body diagram of the continuity plate that is not in equilibrium.
 - d. Are sized to account for the horizontal component of the column panel zone shear.

10. Which of the following is considered a “clean” column?
 - a. A column that requires no surface preparation prior to placing welds
 - b. A column that requires no primer
 - c. A column that requires no stiffening at the beam-column moment joint
 - d. A column that has only strong axis beam framing

