Design of Curved Members/Façade Attachments
Quiz for Session 1: Introduction To Curved Members – June 18, 2018
Due: July 9, 8:00 a.m. EDT – Submit through the online form

1. The characteristics that define a standard bend are:
    a. A single radius of curvature
    b. Two or more arcs in the same plane
    c. Curvature about a principal or geometric axis
    d. Curvature about more than one axis
    e. Both a and c
    f. Both a and d

2. The following curves are formed with variable-radius bends:
    a. Spiral
    b. Parabolic
    c. Compound
    d. Elliptical
    e. Both a and b
    f. Both b and d

3. What is the absolute minimum radius for a W24 bent the hard way?
    a. Rigid guidelines are not available
    b. Practically any radius desired
    c. 20 ft
    d. 28 ft

4. The minimum bending radius is dependent on:
    a. The bending axis
    b. The shape of the cross section
    c. The slenderness of the cross-sectional elements
    d. The bending method and equipment
    e. The level of acceptable distortion
    f. All of the above

5. When can tension-flange holes be formed before bending an I-shape member?
    a. Only where tension flange fracture can be avoided
    b. Only where hole elongation can be avoided
    c. Where both tension flange fracture and hole elongation can be avoided
    d. Always
    e. Never

6. What is the primary type of cross-sectional distortion that occurs during the bending of round HSS members?
    a. Flange bending
    b. Local buckling
    c. Ovalization
    d. Torsional buckling

7. Which of the following is not a potential cause of cross-sectional distortion during the bending operation?
    a. Flexural compression stresses
    b. Shear stresses
    c. Axial compression stresses
    d. Contact forces

8. Cross-sectional distortion can be reduced when:
    a. A mandrel is used during the bending process
    b. The curved member element slenderness increases
    c. Special rolls are used during the bending process
    d. A cold-bending process is used to curve the member
    e. Both b and d
    f. Both a and c

9. Which cross-sectional element type is least susceptible to distortion during the bending operation:
    a. Round elements
    b. Rectangular stiffened elements
    c. Rectangular unstiffened elements

10. Compact members, where $\lambda \leq \lambda_p$ for all elements of the cross section, are usually acceptable for (select the most demanding acceptable bend):
    a. Large-radius bends
    b. Medium-radius bends
    c. Small-radius bends