Design of Curved Members/Façade Attachments
Quiz for Session 2: Design of Vertically-Curved Members– June 25, 2018
Due: July 16, 8:00 a.m. EDT – Submit through the online form

AISC Night School

1. The 2016 AISC *Code of Standard Practice* defines the following tolerances:
    a. Chord length tolerance
    b. Curvature tolerance
    c. Cross-sectional distortion tolerance
    d. Both a and b
    e. a, b and c

2. A common ovalization tolerance, ρ, for round HSS structural members is:
    a. 2%
    b. 5%
    c. 8%
    d. 12%

3. Which statement is true for architecturally exposed (AESS) members?
    a. The chord length and curvature tolerances defined in the AISC *Code of Standard Practice* are dependent on the AESS category
    b. All AESS members must be identified in the contract documents
    c. AESS members must be assigned a category defined in the AISC *Code of Standard Practice*
    d. Both b and c
    e. a, b and c

4. For in-plane buckling, curved compression members can be designed using the flexural buckling provisions in AISC *Specification* Section E3 if:
    a. Snap-through buckling is avoided
    b. The straight column length is replaced with the span (chord) length between supports, L_s
    c. The axial load is replaced with the average axial load along the member length
    d. Lateral-torsional buckling is avoided

5. The effective length factor, K_i, for in-plane buckling of curved compression members is dependent on all of the following except:
    a. The moment of inertia about the axis of curvature, I_i
    b. The rise-to-span ratio, H/L_s
    c. The curved shape (circular or parabolic)
    d. The end conditions

6. The effective length factor, K_o, for out-of-plane buckling of curved compression members is dependent on all of the following except:
   a. The moment of inertia perpendicular to the axis of curvature, I_o
   b. The angle between braces, θ_b
   c. The torsional constant, J, and the warping constant, C_w
   d. The maximum axial load within the segment, P

7. For curved members subjected to flexure, the lateral-torsional buckling strength is dependent on:
   a. The loading direction
   b. The curvature tolerance
   c. The in-plane restraint stiffness
   d. The snap-through buckling mode

8. For curved members subjected to axial compression and in-plane flexure, the required moment:
   a. Can be based solely on a first-order finite element analysis
   b. Can be based solely on a second-order finite element analysis
   c. Can be calculated by multiplying the results of a first-order finite element analysis by an amplification factor
   d. Both b and c

9. For curved compression members, a second-order finite element analysis:
   a. Can be performed using a traditional P-Δ analysis that is commonly used with straight framing members
   b. Must properly consider member axial shortening
   c. Must properly consider out-of-plane deformations caused by lateral-torsional buckling
   d. Both b and c
   e. a, b and c

10. Cross-sectional distortion of curved members under service loads:
    a. Is caused by flexure in the plane of curvature
    b. Is caused by axial compression loads
    c. Induces local element bending
    d. Can result in a reduction of the in-plane flexural strength and stiffness of the member
    e. Both b and c
    f. a, c and d