

# 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*, 2<sup>nd</sup> 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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7. What two AISC documents are available as free downloads at the AISC web site?
8. Name the three types of stresses usually considered in a member subject to torsion.
9. What is the AWS definition of a plug weld?
10. What grades may be specified for ASTM F1554 anchor rods?

**See next page for answers**

## Questions

1. Where can you find information on the metric section properties of steel shapes used in the U.S.?
2. True or False: A minimum “stickout” of 2 threads beyond the nut is required for a properly installed bolt.
3. When some of, but not all of, the elements of the cross-section of a tension member are connected, the effective net area may be less than the total net area due to a phenomenon known as....?
4. To what standards must rolled steel shapes conform?
5. True or False: A 1/16” gap is permissible in compression bearing joints such as column splices and bearing stiffeners.
6. What is the definition of “backgouging”?

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## Answers

1. Metric section properties are available in Volume I of the *Metric Conversion of the LRFD Manual of Steel Construction*, 2<sup>nd</sup> edition.
2. False. Neither the AISC *LRFD Specification* nor the RCSC *Specification for Structural Joints Using ASTM A325 or A490 Bolts* contains such a requirement
3. Shear Lag.
4. ASTM A6/A6M specifies the cross-sectional and overall tolerances that are acceptable for rolled steel shapes.
5. True. The *LRFD Specification*, section M4.4, states that “Lack of contact bearing not exceeding a gap of 1/16”...is permitted.”
6. According to AWS D1.1.-2000, backgouging is “the removal of weld metal and base metal from the weld root side of a welded joint to facilitate complete fusion and complete joint penetration upon subsequent welding from that side.”
7. The latest edition of the AISC *Code of Standard Practice* and the 1997 *AISC Seismic Provisions* with supplements are available at [www.aisc.org](http://www.aisc.org).
8. The three stresses are: pure torsional shear stresses, shear stresses due to warping, and normal stresses due to warping.
9. A plug weld is “a weld made in a circular hole in one member of a joint fusing that member to another member. A fillet-welded hole is not to be construed as conforming to this definition.”
10. ASTM F1554 is available in grades 36, 55, and 105 ksi.