

Modern Steel Construction's monthly *Steel Quiz* allows you to test your knowledge of steel design and construction. All references to LRFD specifications pertain to the 1999 *LRFD Specification for Structural Steel Buildings*, available as a free download from AISC's web site:

www.aisc.org/lrfdspec

ASD references pertain to the 1989 *ASD Specification for Structural Steel Buildings*. Where appropriate, other industry standards are also referenced.

Anyone is welcome to submit questions for *Steel Quiz*—one question or 10! If you or your firm are interested in submitting a *Steel Quiz* question or column, contact ►

Steel
SolutionsCenter

One E. Wacker Dr., Suite 3100

Chicago, IL 60601

tel: 866.ASK.AISC

fax: 312.670.9032

solutions@aisc.org

This month's quiz was developed by Christopher M. Hewitt, Staff Engineer at AISC. Hewitt is a LEED™ Accredited Professional. Sharpen your pencils and put on your thinking cap!

1. What are the two manufacturing processes used in the United States for making steel?

2. Which process typically is used for making structural shapes, such as W-shapes?

3. What is the typical recycled content of steel produced in Electric Arc Furnaces?

4. What does LEED™ stand for?

5. How many LEED points are required to achieve LEED certification for a building?

6. **True or False.** Steel is the North America's most recycled product.

7. What by-product of welding can also be recycled?

8. What do you call a fee paid to a landfill to accept waste, which is typically offset when steel is deconstructed?

9. How many different LEED rating systems exist?

10. How many LEED credits are directly dependent upon the structural material selected?

Turn page for answers

Answers

1. Basic Oxygen Furnace (BOF) and Electric Arc Furnace (EAF).
2. All domestically produced W-shapes are produced in Electric Arc Furnaces.
3. Domestic EAF mills use at least 90% recycled content in their steel products.
4. Leadership in Energy and Environmental Design™, a green rating system created by the U.S. Green Building Council.
5. 26 (of 69 total possible points). A basic LEED™ certification is achieved by obtaining 26 LEED points. Higher certification levels are available, including Silver (33 points), Gold (39 points) and Platinum (52 points).
6. True. The North American steel industry annually recycles millions of tons of steel scrap from recycled cans, automobiles, appliances, construction materials and other steel products. This scrap is re-melted to produce new steel. For more information on the recycling of steel, visit the Steel Recycling Institute at www.recycle-steel.org.
7. Flux. Flux picks up very little moisture and can be recycled without alterations in particle size or composition.
8. Tipping fees. Demand is continually increasing for salvaged building materials. By recovering materials, as outlined in the article "Design for Deconstruction" in this issue (p. 33), salvaging and recycling construction waste and demolition materials can offset disposal costs, or even generate a profit on building projects.
9. Four. In addition to the U.S. Green Building Council's flagship program, LEED for New Construction, pilot programs exist for three new green rating systems: LEED for Existing Buildings, LEED for Commercial Interiors, and LEED for Core and Shell Buildings. The USGBC is also exploring a LEED program for homes.
10. None. Despite what some industry groups claim, the choice of structural material alone does not earn LEED™ points. Any structural material, if used appropriately, can contribute toward the same number of LEED points, but it is important to note that some materials can be used to achieve LEED credits more easily than others. For instance, LEED awards two points for the use of materials with recycled content. While any structural material can be applied towards these points (steel, glulam wood, or fly-ash concrete), the entire steel frame can be counted toward this credit—and at no cost above that of conventional construction. AISC believes that steel is a very effective contributor to LEED-rated buildings. For more information on how steel contributes to the design of a sustainable building, please visit www.aisc.org/sustainability.