

steel quiz

Looking for a challenge? *Modern Steel Construction's* monthly Steel Quiz tests your knowledge of steel design and construction. Most of the answers to this month's steel quiz can be found at www.aisc.org/sustainability, www.steelday.org and other sustainability-related websites.

- 1 For what does the acronym LCA stand?
- 2 In total, how many credits or points are available under the current version of the LEED rating system for new construction?
- 3 True/False: The sustainable buildings movement is fully mature.
- 4 What are the three "pillars" of sustainable construction?
- 5 Buildings are responsible for approximately what percentage of domestic energy use?
 - a) 10%
 - b) 25%
 - c) 40%
 - d) 65%
- 6 True/False: Structural steel products and components can only be recycled twice.
- 7 What process is used to produce all wide-flange structural steel produced in the U.S.?
 - a) Electric arc furnace (EAF)
 - b) Basic oxygen furnace (BOF)
- 8 On average, how many gallons of water are consumed to produce one ton of structural steel?
 - a) 50
 - b) 70
 - c) 100
 - d) 120
- 9 What is the largest contributor to the environmental impact of the EAF steelmaking process?
 - a) Water use
 - b) Diesel fuel use
 - c) Electricity use
 - d) Natural gas use
 - e) Nitrogen use
- 10 What is the radius (in miles) used in LEED credit MR 5, Materials and Resources?

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ANSWERS

- 1 Life cycle assessment or analysis.
- 2 100 (plus 10 more for the “extra” credits).
- 3 False. While the sustainable buildings movement is currently a much talked-about subject, it is by no means fully mature. One could argue that it is currently in its adolescence.
- 4 Environmental, economic and social—or as some put it, planet, profit and people.
- 5 (c) 40%
- 6 False. Steel products are recycled over and over with no practical limit on the number of times they can be re-melted and remanufactured.
- 7 (a) EAF. Electric arc furnaces use recovered steel scrap instead of virgin iron ore to produce new structural members. Domestic steel produced via this method contains, on average, 93% recycled content.
- 8 (b) It takes 70 gallons (net) of water to produce one ton of structural steel. Much more than that is used in the process, but the steam created is collected, condensed and reused in the process.
- 9 (c) Electricity use. However, the electrical grid is becoming greener, and EAF steel’s environmental footprint will continue to decrease.
- 10 500 miles.



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Anyone is welcome to submit questions and answers for Steel Quiz. If you are interested in submitting one question or an entire quiz, contact AISC’s Steel Solutions Center at 866.ASK.AISC or at solutions@aisc.org.