

SAFETY

Revised Labeling Requirements for Chemicals to take Effect June 1

June 1 marks a critical date for users of the 2012 *Hazard Communication Standard* (OSHA 1910.1200 and OSHA 1926.59). This is the deadline for requiring all alternative labeling for secondary chemical containers to be in place in fabrication and other manufacturing facilities, as well as on job sites. For example, if a chemical, such as paint or thinner, is transferred from a large container to a smaller container, the new labeling must communicate to employees the hazards of the chemical in the smaller container. In addition, each facility's hazard communication program must be revised to fully comply with the standard, including Globally Harmonized System (GHS) provisions, and all employees must be trained in the new hazard communication program. Lastly, signage in fabrication shops and on job sites must be en-

hanced with more descriptive warnings about the hazards present in order to be in compliance with the standard. This will include signage for items such as flammable liquids (1910.106, 1926.52), spray finishing using flammable and combustible materials (1910.107) and welding, cutting and brazing chemicals (1910.252). All of these items must be addressed by June 1.

For more information on the 2012 *Hazard Communication Standard*, see "Altering Alerts" in the February 2013 issue (available at www.modernsteel.com), the AISC safety webinar "Hazard Communication and the Globally Harmonized System (GHS) for Fabricators and Erectors" (www.aisc.org/ghs) and OSHA's "Hazard Communication" (www.osha.gov/dsg/hazcom/standards.html).

CERTIFICATION

Certification Standard Available for Public Review

The current draft of the 2017 AISC *Certification Standard for Steel Fabrication and Erection, and Manufacturing of Metal Components* (AISC 207-17) is now available for public review.

The standard, along with the review forms, is available for download at

www.aisc.org/publicreview. Copies are also available (for a \$35 nominal charge) by calling 312.670.5411. Please submit comments via the online forms to Max Puchtel (puchtel@aisc.org) by May 16 for consideration.

CERTIFICATION

AISC Issues Certification Bulletin for Erector Participants

To help keep participants informed about program updates and changes, AISC Certification has released Certification Bulletin 2016-1: *Current Participant Conversion to Standard Based Erector Certification Program*. The bulletin is available at www.aisc.org/certification.

This bulletin provides information required to convert certified erectors with certifications expiring in September 2016 or after to the new requirement-based AISC certification program, which is mandatory for all participants.

The new requirement-based AISC certification program supersedes the former erector checklist criteria and existing categories (Certified Steel Erector and Advanced Certified Steel Erector). The updated program is designed to ensure participants have quality procedures in place and demonstrate that they are following them, which serves as an effective way for participating companies to communicate their commitment and capability with respect to quality.

For questions or concerns regarding the bulletin, please contact erectorconversion@aisc.org.

People and Firms

- **Thornton Tomasetti** recently announced the opening of its first Canada office in Toronto. The move is the initial phase of the firm's strategic plan to strengthen and expand its Canadian presence, and it now has 38 offices around the globe. The new Toronto office is intended to allow Thornton Tomasetti to better support its long-standing clients and partners in Canada. The firm has been collaborating with Canadian architects, developers and consultants for more than 30 years on more than 50 projects involving nearly each of its 10 practices.

- **J. Brandon Davis** has joined **The Austin Company** as vice president and general manager of the company's Cleveland operations. In this role, Davis will have overall responsibility for Austin's largest operation, which includes consulting, design, engineering, planning, construction and design-build operations. Davis previously served as senior vice president of **AECOM's** industrial group.

- **ecoScorecard**, the environmental BIM rating system for **Revit** and **Sketchup**, has been 100% acquired by **VIMtrek, LLC**, as well as **SmartBIM**, the parametric smart object developer. While the two companies have been working together for two years to fully integrate the smart objects and the environmental rating system into the visualization platform the shareholders felt it strategically appropriate to acquire 100% of the shares.

IN MEMORIAM

Fernando Friás, IMCA President, Dies at 90

Fernando Friás, longtime president of the Mexican Institute of Steel Construction (IMCA), passed away in March at the age of 90.

“As the driving force behind IMCA, Friás was instrumental in establishing positive relationships between IMCA and AISC,” said Roger Ferch, AISC’s president. “In addition to his success as a steel fabricator, he helped grow and advance the fabricated structural steel industry in Mexico, including translating the AISC *Specification*, and he was a frequent participant at NASCC: The Steel Conference.”

Friás served as an advisory member on the AISC Specification Committee and in 1998, he initiated IMCA’s collaboration with AISC’s annual Steel Conference. In 2005 he received the AISC Honorary Member Award and

in 2010 was honored with the AISC Lifetime Achievement Award.

Friás received his bachelor’s degree in civil engineering from the University of New Mexico and his master’s degree from the National University Autónoma in Mexico. He began his career as the director of FESA, a steel fabrication shop he founded in 1958, and was also one of the founders of Sociedad de Fabricantes de Estructuras Metálicas A.C. (FEMAC), where he served as president from 1980 to 1984.

Friás was a founding father of IMCA, which formed in 1983. The following year he was elected president, and he served in that role for more than 30 years until his passing. During his tenure he promoted a wide variety of activities in education and standard practice for complex steel construction designs. He was also the primary advocate and

promoter of the IMCA *Steel Construction Manual* since its first publication in 1984, up until the most recent (5th) edition, which was published in 2014.



ENGINEERING JOURNAL

Second Quarter 2016 Engineering Journal Now Available

The second-quarter 2016 issue of AISC’s *Engineering Journal* is now available at www.aisc.org/ej, where you can view, download and print the current digital edition. Articles in this issue include:

► **Design of Horizontal Life Lines in Personal Fall Arrest Systems**

Thomas S. Dranger, S.E., Ph.D.

Personal fall arrest systems have become common in construction, maintenance, and many other activities including recreation. Many use a horizontal lifeline (HLL), often a steel cable. Their design is governed by Occupational Safety and Health Administration (OSHA) regulations that require “supervision by a qualified person” and a factor of safety of at least two. This paper gives a summary of regulations, a reiterative method of analysis, a discussion of the limit states, and some appropriate modifications in the case of unacceptable behavior. The effects of assumptions used in the analysis are discussed in the conclusion.

► **Tensile Strength of Embedded Anchor Groups: Tests and Strength Models**

David A. Grilli and Amit M. Kanvinde

Steel column bases in seismically braced frames and other similar structures must be designed for high uplift or tensile forces. A common detail for this connection involves anchors embedded in the footing with a plate at their lower end, also embedded in the footing. This paper presents tension tests on two full-scale specimens featuring this anchorage detail. The tests are evaluated against three strength models, including the ACI 318 Appendix D method, the ACI 318 punching shear equation and the concrete capacity design (CCD) method. The latter shows the most promise, even considering the limitations of the study.

► **Cross Section Strength of Circular Concrete-Filled Steel Tube Beam Columns**

Mark D. Denavit, Jerome F. Hajjar and Roberto T. Leon

Closed-form expressions for the cross-section strength of steel-concrete composite beam-columns according to the plastic stress distribution method are tabulated in the AISC *Seismic Design Manual* and the AISC *Design Examples*. Approximations have been used in the derivation of these formulas, most of which do not

significantly affect the accuracy of the results. However, an approximation in the equation for the axial strength of circular, concrete-filled steel tubes that are simultaneously subjected to flexure at one of the key points on the interaction curve (designated as Point E) leads to results that are unconservative. The derivation of the equation is reviewed and a more accurate expression is proposed.

► **Design for Deconstruction with Demountable Composite Beams and Floor Systems**

Judy Liu

Sustainable design, or building “green,” includes consideration of resources (e.g., energy, raw materials) but also construction and demolition waste. The statistics on waste are motivating shifts in structural design. Ongoing and recently completed research on deconstructable steel-concrete composite beams and floor systems for steel frame buildings is presented. This research includes demountable beam-slab connectors, deconstructable composite floor systems with precast concrete planks, and lightweight modular two-way steel flooring systems.

SAFETY

AISC Names 2015 Safety Award Winners

More than 70 structural steel facilities are being honored with an AISC Safety Award for their excellent records of safety performance in 2015. Awards are given in the categories of “Shop and Office” and “Field Erection” and include the Safety Award of Honor, AISC’s top safety award, presented for a perfect safety record of no disabling injuries, as well as the Safety Certificate of Merit and Safety Certificate of Commendation.

“AISC’s annual Safety Awards program recognizes excellent records of safety performance, and we commend these facilities for their effective accident prevention programs,” said Tom Schlafly, AISC’s director of safety. “Periodic recognition of safety in the workplace has been demonstrated to provide worker incentive and a reminder of the importance of safe practices.”

The AISC Safety Awards program is open to all AISC Member fabricators and erectors. For more information about the program as well as safety resources available for the fabricated and erected structural steel industry, please visit www.aisc.org/safety.

Here is the list of winners:

➤ **Shop and Office Category Honor Awards**

- 2-K Steel Products, Inc., Ashville, Ala.
- Anderson Steel Supply, Inc., Great Falls, Mont.
- B&B Welding Company, Inc., Fort Howard, Md.
- Bowen Engineering Corporation, Indianapolis, Ind.
- Cianbro Fabrication and Coating Corporation, Pittsfield, Maine
- Cold Steel, Inc., Farmington, N.M.
- Cooper Steel, Shelbyville, Tenn.
- CSE, Inc., Madison Heights, Va.
- Cubic Designs, Inc., New Berlin, Wis.
- Custom Metals, Little Rock, Ark.
- Douglas Steel Fabricating Corporation, Lansing, Mich.
- Eddy’s Welding, Inc., Ellicott City, Md.
- Gibson Industrial Inc., Richmond, Va.
- Grempp Steel Company, Posen, Ill.
- Grunau Metals, Oak Creek, Wis.
- GT Grandstands, Inc., Plant City, Fla.

- Hercules Steel Company, Inc., Fayetteville, N.C.
 - Highway Systems Incorporated, Sumterville, Fla.
 - Hillsdale Fabricators, J.S. Alberici Construction, St. Louis, Mo.
 - LeJeune Steel, Minneapolis, Minn.
 - LMC Industrial Contractors, Dansville, N.Y.
 - LPR Construction Company, Loveland, Colo.
 - Midland Steel Company, Wathena, Kan.
 - Miscellaneous Steel Industries, Inc., Kyle, Texas
 - National Steel City, LLC, Plymouth, Mich.
 - NOVA Group, Inc., Napa, Calif.
 - Padgett, Inc., New Albany, Ind.
 - Phoenix Fabrication & Supply, Inc., South Chicago, Ill.
 - Pikes Peak Steel LLC, Colorado Springs, Colo.
 - RAI Industrial Fabricators, LLC, Athens, Ga.
 - Scott Steel Services, Inc., Crown Point, Ind.
 - Simko Industrial Fabricators, Hammond, Ind.
 - Steelcon, LLC, New Waterford, Ohio
 - Stinger Bridge & Iron, Coolidge, Ariz.
 - Stud Welding, Inc., Centerville, Tenn.
 - The Arthur Louis Steel Company, Geneva, Ohio
 - The Haskell Company, Jacksonville, Fla.
 - Tyler Steel Company, Tyler, Texas
 - Unlimited Welding, Inc., Winter Spring, Fla.
 - V&M Erectors, Pembroke Pines, Fla.
 - XLE Metals, Inc., Prospect Park, Pa.
- **Field Erection Category Honor Awards**
- B&B Welding Company, Inc., Fort Howard, Md.
 - Cold Steel, Inc., Farmington, N.M.
 - Douglas Steel Fabricating Corporation, Lansing, Mich.
 - Eddy’s Welding, Inc., Ellicott City, Md.
 - Gibson Industrial, Inc., Richmond, Va.
 - JPW Structural Contracting, Inc., Syracuse, N.Y.
 - LMC Industrial Contractors, Dansville, N.Y.
 - National Steel City LLC, Plymouth, Mich.

- North Alabama Fabricating Company, Inc., Birmingham, Ala.
- Peterson Beckner Industries, Inc., Houston, Texas
- RAI Industrial Fabricators, LLC, Athens, Ga.
- Reliance Steel, Inc., Colchester, Vt.
- S.W. Funk Industrial Contractors, Inc., Chester, Va.
- Steelcon, LLC, New Waterford, Ohio
- Stinger Bridge & Iron, Coolidge, Ariz
- Unlimited Welding, Inc., Winter Spring, Fla.
- XLE Metals, Inc., Mendenhall, Pa.

➤ **Shop and Office Category Merit Awards**

- Goff Communications, Sarasota, Fla.
- W&W/AFCO Steel, Okalahoma City, Okla.

➤ **Field Category Merit Awards**

- CSE, Inc., Madison Heights, Va.

➤ **Shop and Office Category Commendation Awards**

- Dave Steel Company, Inc., Asheville, N.C.
- Ford Steel, LLC, Porter, Texas
- Kwan Wo Ironworks, Inc., Hayward, Calif.
- North Alabama Fabricating Company, Birmingham, Ala.
- Prospect Steel Company, Little Rock, Ark.
- Shickel Corporation, Bridgewater, Va.
- Steel Service Corporation, Jackson, Miss.
- Systems Fab & Machine, Inc., El Dorado, Ark.
- Vigor, Clackamas, Ore.

➤ **Field Category Commendation Awards**

- Cooper Steel, Shelbyville, Tenn.
- Grunau Metals, Oak Creek, Wis.
- LPR Construction Company, Loveland, Colo.

CORRECTION

In an unintentional April Fools joke, the lettered choices in April’s Steel Quiz were ordered incorrectly. An updated version of the quiz, with the choices in the correct order, is posted in the Archives section of www.modernsteel.com.