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TOP STORY

Goodbye 2016 and Hello 2017!

As 2016 ends, the staff at the Steel Framing Alliance (SFA) has been busy assessing the activities of the year and finalizing the business plan for 2017. More

COLD-FORMED STEEL ENGINEERS INSTITUTE – NEWS AND UPDATES

CFSEI to Host Webinar on Structural Versus Nonstructural Member Design on December 8, 2016

The Cold-Formed Steel Engineers Institute (CFSEI) will host a webinar on "Back to Basics: Structural vs. Nonstructural Member Design" on Thursday, December 8, 2016 at 3:00 p.m. EST. More

AISI an MBMA to Host Webinar on Significant Changes to AISI S100, Cold-Formed Steel Design Specification

The American Iron and Steel Institute (AISI) and the Metal Building Manufacturers Association (MBMA) are hosting a continuing education webinar on the latest technical changes and additions to AISI S100-16, North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition (also referred to as the North American Specification, or Specification). More

MARKETPLACE

US Construction Spending up 0.5 Percent in October

U.S. builders boosted spending on construction projects by a modest amount in October, helped by big gains in spending on home construction and the biggest increase in government projects in 10 months. More

AISI Publishes Supplement No. 1 to S400-15, North American Standard for Seismic Design of Cold-Formed Steel Structural Systems

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| Top Main | First Article |

HEADQUARTERS

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- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

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December 2016

New Edition of the North American Specification for the Design of Cold-Formed Steel Structural Members is Published

The American Iron and Steel Institute (AISI), in cooperation with CSA Group, today announced publication of the 2016 edition of the *North American Specification for the Design of Cold-Formed Steel Structural Members* (also referred to as the North American Specification, or Specification). More

AISI Updates Standard for the Design of Profiled Steel Diaphragm Panels

The American Iron and Steel Institute (AISI) has updated AISI S310, *North American Standard for the Design of Profiled Steel Diaphragm Panels*. More

New e-book Covered Cold-Formed Steel Standards

Cold-formed steel is strong and versatile with the potential to deliver numerous benefits to designers, allowing structures that are thinner with complex geometries. More

NEHRP and ATC Release New Seismic Design Technical Brief Based on AISI Standard

A new technical brief released by the National Earthquake Hazards Reduction Program (NEHRP) and the Applied Technology Council (ATC) provides a comprehensive overview of the seismic design of cold-formed steel (CFS) framed buildings. More

Reduced Fire Protection OK for Many Steel Floor Assemblies

Recent tests have resolved a longstanding debate among designers over the amount of fire protection appropriate for a steel floor assembly. More

Steel Shots: Hudson Yard's Tallest Tower is Rising

30 Hudson Yards — a 90-story, steel-framed skyscraper slated to be the anchor of the new Hudson Yards mixed-use development in New York — is on the rise. More

| Top Main | First Article |

HEADQUARTERS

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- Scorpius Trackers
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- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

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December 2016

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Goodbye 2016 and Hello 2017!

As 2016 ends, the staff at the Steel Framing Alliance (SFA) has been busy assessing the activities of the year and finalizing the business plan for 2017.

The SFA, along with its member companies, continued to deliver learning units and professional development hours to the construction marketplace. With more than 196 requests for some type of continuing education seminar, the SFA filled each one thanks to the generous volunteer efforts of many of our members. From coast to coast, north to south, our team of dedicated experts conveyed the best practices of the material of choice – cold-formed steel. The venues included regional building code conferences like EduCode and state Structural Engineers Associations in Texas, Missouri, and many architecture offices, to name a few.

While many of these requests are generated through press releases and articles, the majority result from calls to the hotline, 1-800-79-STEEL. SFA then matches the requests with our network of trained presenters to deliver quality educational sessions about cold-formed steel framing. Trending now are the subjects of acoustics, fire, seismic and the new American Iron and Steel Institute Standards. SFA maintains continuing education provider status with the American Institute of Architects and several state engineering boards. Our registered programs fulfill necessary continuing education requirements for design and construction professionals throughout the world.

In the past year, the SFA issued more than 9,200 professional development hours and learning units of continuing education to more than 2,340 construction professionals. Working with our partners, that number will continue to grow.

Along with our industry technical experts, we responded to more than 1,910 inquiries for assistance with everything from sourcing cold-formed steel material for projects to design assistance and questions about support and training. Special thanks to Roger LaBoube, Don Allen, Jeff Klaiman, Danny Feazell, Nader Elhajj, Mark Nowak, Steve Walker, Jay Larson, and George Frater, just to name a few, who assisted with many of the inquiries.

Anticipating the release of the 2016 edition of the *SFA Fire and Acoustic Guide for Walls, Floors and Roofs*, the AISI S100 and D110 webinar series, and continuing development of new standards in ASTM E60, 2017 is already shaping up to be a very busy year.

Continued next page … | Top Main | Top Article | Next Article |

HEADQUARTERS

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NEW MEMBERS

- RJC
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- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design
Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

And finally, as 2016 ends, the staff at the Steel Framing Alliance and Cold-Formed Steel Engineers Institute wishes to thank all who have made the work of our organizations possible through their generous contributions of time, energy and talent, as well as their financial contributions.

We wish you and yours wonderful things in 2017.

Editor, Framework Online

| Top Main | Top Article | Next Article |

HEADQUARTERS

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- RJC
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- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

CFSEI
COLD-FORMED STEEL ENGINEERS INSTITUTE

CFSEI to Host Webinar on Structural Versus Nonstructural Member Design on December 8, 2016

The Cold-Formed Steel Engineers Institute (CFSEI) will host a webinar on "Back to Basics: Structural vs. Nonstructural Member Design" on Thursday, December 8, 2016 at 3:00 p.m. EST. This is the eighth webinar in CFSEI's "Back to Basics" series and is designed for architects, engineers, building officials and contractors. Participants are eligible for 1.5 PDHs.

The webinar is based on AISI S220, *North American Standard for Cold-Formed Steel Framing-Nonstructural Members, 2015 Edition*, which was created to help delineate and eliminate the confusion between engineering principles and the requirements for cold-formed steel structural members and nonstructural members. AISI S220 has been adopted into the 2015 International Building Code (IBC) and is available for free download at www.aisistandards.org.

This webinar will address:

- The basic behavior of composite vs. non-composite wall assemblies, and
- The design requirements that differ between structural and nonstructural members.

Roger A. LaBoube, Ph.D., Curator's Teaching Professor Emeritus of Civil Engineering and Director of the Wei-Wen Yu Center for Cold-Formed Steel Structures at the Missouri University of Science and Technology, will conduct the webinar. Dr. LaBoube has an extensive background in the design and behavior of cold-formed steel structures including cold-formed steel beams, panels, trusses, headers and wall studs, as well as bolt, weld and screw connections. He is a member of the American Iron and Steel Institute's Committee on Specifications and the Committee on Framing Standards. He is a Registered Professional Engineer in Missouri.

More information on the webinar and registration details are available at www.cfsei.org.

Editor, Framework Online

| Top Main | Top Article | Next Article |

HEADQUARTERS

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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

CFSEI
COLD-FORMED STEEL ENGINEERS INSTITUTE

AISI and MBMA to Host Webinar on Significant Changes to AISI S100, Cold-Formed Steel Design Specification

The American Iron and Steel Institute (AISI) and the Metal Building Manufacturers Association (MBMA) are hosting a continuing education webinar on the latest technical changes and additions to AISI S100-16, North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition (also referred to as the North American Specification, or Specification). The webinar will be held on December 13, 2016 from 3:00 to 4:30 p.m. EST and will award 1.5 Continuing Education Credits/Learning Units.

The webinar will be conducted by Richard Haws, P.E., of Nucor Buildings Group and Vincent Sagan, P.E., of the Metal Building Manufacturers Association, both of whom serve on AISI's Committee on Specifications. It is designed for architects, engineers, building code officials, and others interested in learning more about the updated North American Specification, which will be referenced in the next editions of the International Building Code and the National Building Code of Canada. Registration and additional information is available at www.cfsei.org.

AISI S100-16 harmonizes cold-formed steel design technology across the United States, Canada and Mexico, allowing for faster introduction of new technologies as well as opening up the market for a variety of derivative products such as design aids and educational materials. For more information on the changes made to AISI S100-16, click here.

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| Top Main | Top Article | Next Article |

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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

US Construction Spending up 0.5 Percent in October

U.S. builders boosted spending on construction projects by a modest amount in October, helped by big gains in spending on home construction and the biggest increase in government projects in 10 months.

Construction spending rose 0.5 percent in October following no change in September, the Commerce Department reported Thursday.

Home construction increased 1.6 percent, helping offset a 2.1 percent drop in spending on nonresidential projects. Outlays for construction of offices, hotels and shopping centers all declined. Spending on government projects jumped 2.8 percent, the biggest increase since last December, as federal and state and local spending all rose.

Financial markets have rallied since the election of Donald Trump, reflecting in part enthusiasm over his vows to increase spending on projects to repair and replace the country's aging infrastructure.
Despite the advance in government projects, spending in the category is still down 0.6 percent from a year ago. Public projects have been squeezed for a number of years as governments at all levels have struggled to deal with falling revenues following the 2007-2009 recession, the worst downturn in seven decades.

Trump's plans for increased infrastructure are expected to be revealed when he sends his first budget to Congress early next year.

President Barack Obama sought for a number of years to get Congress to approve higher infrastructure spending, but he was blocked by opposition from Republicans who complained that the projects would increase budget deficits. Democrats in Congress have already expressed support for Trump's proposals to boost construction spending. His ideas, however, may still face opposition from Republicans worried about high deficits.

The October rise in spending pushed overall construction spending to a seasonally adjusted annual rate of $1.17 trillion, up 3.4 percent from a year ago.

Source: ABC News, December 1, 2016

| Top Main | Top Article | Next Article |

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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

AISI Publishes Supplement No. 1 to S400-15, North American Standard for Seismic Design of Cold-Formed Steel Structural Systems

The American Iron and Steel Institute (AISI) has published Supplement No. 1 to AISI S400-15, North American Standard for Seismic Design of Cold-Formed Steel Structural Systems, 2015 Edition. While the standard addresses the design and construction of cold-formed steel structural members and connections used in the seismic force-resisting systems in buildings and other structures, this particular supplement revises the expected strength factors for cold-formed steel light-frame shear walls sheathed with wood structural panels, steel sheet sheathing, gypsum board, and fiberboard panel sheathing.

The Supplement is available to download free of charge from www.aisistandards.org. It is available to download as: 1) a single document for users who are interested only in the specific changes, or as 2) part of the complete standard, designated as AISI S400-15 w/S1-16.

Source: American Iron And Steel Institute, November 17, 2016

| Top Main | Top Article | Next Article |

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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

New Edition of the North American Specification for the Design of Cold-Formed Steel Structural Members is Published

2016 Edition supersedes all previous issues of the "Harmonized North American Standard"

WASHINGTON, D.C., November 1, 2016 – The American Iron and Steel Institute (AISI), in cooperation with CSA Group, today announced publication of the 2016 edition of the *North American Specification for the Design of Cold-Formed Steel Structural Members* (also referred to as the North American Specification, or Specification). The latest edition provides updated information from recent advances in research on cold-formed steel design. It supersedes all previous editions.

The North American Specification harmonizes cold-formed steel design technology across the United States, Canada and Mexico, allowing for faster introduction of new technologies as well as opening up the market for a variety of derivative products such as design aids and educational materials. The 2016 edition of the Specification has been reorganized—it includes the Direct Strength Method in the main body of the document in parallel to the traditional Effective Width Method; has a similar format to the AISC 360 specification for structural steel buildings; and minimizes the differences in design provisions between the U.S., Canada and Mexico. The reorganized Specification contains a main document—Chapters A through M and Appendices 1 and 2—intended for use by all three countries. There are two country-specific appendices: Appendix A is for use in the United States and Mexico, and Appendix B is for use in Canada. The Specification also provides an integrated treatment of Allowable Strength Design (ASD), Load and Resistance Factor Design (LRFD), and Limit States Design (LSD).

Reflecting ongoing research to develop new and improved information on the structural behavior of cold-formed steel members, the new edition includes the following additions and revisions:

- Referenced standards—including those country-specific to the U.S. and Mexico, or Canada— are listed in the main body of the Specification.
- The previous country-specific design provisions for applications of other steels have been consolidated.
- The limitations for applying the Effective Width Method and the Direct Strength Method are streamlined.

Continued next page … | Top Main | Top Article | Next Article |

HEADQUARTERS

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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
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More

- The system stability analysis, including second-order analysis, has been revised to be consistent with the method in AISC 360.
- The Direct Strength Method design provisions are incorporated into compression member design (Chapter E), flexural member design (Chapter F) and shear design (Chapter G).
- The interaction check equations for ASD, LRFD and LSD methods are combined into one format.
- AISI S240, *North American Standard for Cold-Formed Steel Framing* and AISI S400, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems,* are referenced for cold-formed steel light-frame construction applications. AISI S310, *North American Standard for the Design of Profiled Steel Diaphragm Panels*, is referenced for diaphragm design applications.
- New provisions for power-actuated fastener embedment in concrete are added specifically for track connections in cold-formed steel framing applications.
- A total of 16 AISI test standards (AISI S900 series) are referenced.
- Statistical data for the determination of resistance factors are reorganized and greatly simplified in format.
- A new section, “Elastic Buckling Analysis of Members,” is introduced as Appendix 2.

The North American Specification is the result of a cooperative effort by AISI’s Committee on Specifications for the Design of Cold-Formed Steel Structural Members and the CSA Group Technical Committee on Cold Formed Steel Structural Members.

The new edition is designated as AISI S100-16 in the United States and is available online for free download at www.aisistandards.org. In Canada, this edition is designated as CSA S136-16 and is available online for free download on CSA Group’s online store at www.shop.csa.ca. The North American Specification has been approved in the U.S. by the American National Standards Institute (ANSI) as the American National Standard, approved in Canada by CSA Group, and endorsed in Mexico by Camara Nacional de la Industria del Hierro y del Acero (CANACERO).

Source: American Iron and Steel Institute, November 1, 2016

| Top Main | Top Article | Next Article |

HEADQUARTERS

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- Scorpius Trackers
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- Sociedad Synergy Ltda
- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders’ Show
Orlando, Florida
More

MARKETPLACE

AISI Updates Standard for the Design of Profiled Steel Diaphragm Panels

AISI S310-16 incorporates changes made in the updated North American Specification, AISI S100-16

WASHINGTON, D.C., November 2, 2016 – The American Iron and Steel Institute (AISI) has updated AISI S310, *North American Standard for the Design of Profiled Steel Diaphragm Panels*. This standard, first published in 2013, provides design provisions for diaphragms consisting of profiled steel decks or panels which include fluted profiles and cellular deck profiles. The diaphragm may be installed with or without insulation between the panels and supports, and may be supported by materials made of steel, wood or concrete.

This new edition, AISI S310-16, incorporates the changes made in the just-published 2016 edition of AISI S100, *North American Specification for the Design of Cold-Formed Steel Structural Members.* It also revises the safety and resistance factors in Table B1.1 so they are more consistent with the theory and calibration method presented in the standard. AISI S310-16 is intended for adoption and use in the United States, Canada and Mexico and is available to download free of charge at www.aisistandards.org.

The AISI S310 analytical method was based on the Steel Deck Institute's *Diaphragm Design Manual*, which is commonly used to determine the strength and stiffness of diaphragms. The standard determines the in-plane strength and stiffness of steel panels with or without concrete-fills, and the strength and stiffness of connections in a diaphragm. The standard was developed by AISI's Committee on Specifications, with participation by the Steel Deck Institute, Metal Building Manufacturers Association, and Metal Construction Association.

Source: American Iron and Steel Institute, November 2, 2016

| Top Main | Top Article | Next Article |

HEADQUARTERS

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- RJC
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- Sociedad Synergy Ltda
- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

New e-book Covered Cold-Formed Steel Standards

Cold-formed steel is strong and versatile with the potential to deliver numerous benefits to designers, allowing structures that are thinner with complex geometries. In the manufacturing process, a metallic-coated sheet steel is roll-formed into products such as studs, joists, track, headers, angles, truss members, and other components. By reducing the amount of steel needed to create a durable, resilient, and code-compliant building, the material contributes greatly to the steel industry's efforts to improve sustainability throughout a building's lifecycle and simplify natural resource management.

Cold-formed steel structures have the potential to deliver high-efficiency building designs by utilizing minimal material and advanced geometric shapes in structural members. Until recently, standards focused on design of the individual cold-formed steel structural members—making it difficult for designers and engineers to take full advantage of the capabilities and benefits of cold-formed steel members working together as a system.

Addressing this issue, the American Iron and Steel Institute (AISI) is improving on previous standards by introducing a more comprehensive and useful suite of standards for professionals. Find out more in Steel Framing—the newest free e-book in The Construction Specifier series. Download the resource here.

Source: The Construction Specifier, November 7, 2016

| Top Main | Top Article | Next Article |

HEADQUARTERS

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- Scorpius Trackers
- Sheffee Lulkin & Associates, Inc.
- Sociedad Synergy Ltda
- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

NEHRP and ATC Release New Seismic Design Technical Brief Based on AISI Standard

Document is co-authored by AISI standards committee members

WASHINGTON, D.C. – A new technical brief released by the National Earthquake Hazards Reduction Program (NEHRP) and the Applied Technology Council (ATC) provides a comprehensive overview of the seismic design of cold-formed steel (CFS) framed buildings. The document is based on topics covered in the recently released American Iron and Steel Institute (AISI) standard, AISI S400-15, *North American Standard for Seismic Design of Cold-Formed Steel Structural Systems, 2015 Edition*, which is available for free download at www.aisistandards.org.

NEHRP Seismic Design Technical Brief No. 12, "Seismic Design of Cold-Formed Steel Lateral Load-Resisting Systems: A Guide for Practicing Engineers" is available for free download at http://dx.doi.org/10.6028/NIST.GCR.16-917-38. The Applied Technology Council managed the development of the document and contracted with cold-formed steel experts in industry and academia to create and review the technical content. Two of the three authors—Robert L. Madsen of Devco Engineering, Inc. and Benjamin Schafer, Ph.D., of The Johns Hopkins University—are members of AISI's Committee on Specifications (COS) and Committee on Framing Standards (COFS). Madsen is also chair of the AISI COFS Lateral Design Subcommittee, which developed AISI S400-15.

NEHRP Technical Briefs are published by the National Institute of Standards and Technology (NIST) as aids in the efficient transfer of research into practice to reduce losses resulting from earthquakes. This particular document provides the following:

- An introduction to cold-formed steel systems and current seismic design philosophies for those systems.
- An overview of the codes and standards developed and used by the industry.
- A summary of cold-formed steel systems, including shear walls with wood structural panel sheathing or steel sheet sheathing attached to CFS framing, strap-braced walls, and special bolted moment frames using CFS sections.
- A discussion on typical floor and roof diaphragms used in buildings with CFS seismic force-resisting systems.
- An exploration of the newest AISI standards relating to cold-formed steel framing that will be referenced in upcoming building codes and standards.

Continued next page … | Top Main | Top Article | Next Article |

HEADQUARTERS

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- RJC
- Scorpius Trackers
- Sheffee Lulkin & Associates, Inc.
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UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

"NEHRP Seismic Design Technical Brief No. 12 is an important resource for practicing structural engineers because many of them do not receive instruction on the design of cold-formed steel framing systems during their formal education and professional practice," said Bonnie Manley, P.E., Regional Director – Construction Codes and Standards, AISI. "Many also assume that cold-formed steel framing is limited to nonstructural or gravity framing applications in commercial buildings. However, ongoing research has provided significant advancements in the understanding of the performance of CFS framing seismic force-resisting systems. As a result, cold-formed steel framing is increasingly being chosen for not only the gravity system, but also for the wind and seismic force-resisting systems in low-rise and mid-rise buildings. This technical brief covers both introductory and advanced topics that will be immensely helpful in increasing knowledge about CFS framing benefits and practices in the design community." Manley stated that the document would also be of interest to building officials, students and researchers.

The Applied Technology Council will develop and host webinars in 2017 that support the content provided in NEHRP Seismic Design Technical Brief No. 12. Professional development hours will be offered. For more information, visit https://www.atcouncil.org/.

AISI is an American National Standards developer recognized by the American National Standards Institute (ANSI). AISI develops standards related to steel structural members cold-formed to shape from carbon and low-alloy steels and is committed to fairness, transparency and performance in its efforts to ensure steel's competitiveness in the marketplace.

Source: American Iron and Steel Institute, November 9, 2016

… | Top Main | Top Article | Next Article ||

HEADQUARTERS

Steel Framing Alliance
25 Massachusetts Avenue, NW
Suite 800
Washington, DC 20001
Tel: 800-797-8335

NEW MEMBERS

- RJC
- Scorpius Trackers
- Sheffee Lulkin & Associates, Inc.
- Sociedad Synergy Ltda
- Stand Up Engineers

UPCOMING EVENTS

December 8, 2016
Back to Basics: Structural vs. Nonstructural Member Design Webinar
3:00 p.m. Eastern Time
More

December 13, 2016
Significant Changes to AISI S100, Cold-Formed Steel Design Specification Webinar
3:00 p.m. Eastern Time
More

January 9-10, 2017
NAHB International Builders' Show
Orlando, Florida
More

MARKETPLACE

Reduced Fire Protection OK for Many Steel Floor Assemblies

Recent tests have resolved a longstanding debate among designers over the amount of fire protection appropriate for a steel floor assembly.

Revisions to UL Design No. D982 in the Underwriter Laboratories Fire Resistance Directory, based on fire tests sponsored by the American Institute of Steel Construction and the American Iron and Steel Institute (AISI), mean steel assemblies qualify for half the customary fire-protection thickness, regardless of the design detail in the building, says Charles J. Carter, AISC's vice president and chief structural engineer. The appropriate thickness had long been argued, he adds.

AISC and AISI paid UL to do the first U.S. fire tests, using a 14-ft x 17-ft replica of a steel floor, built in an unrestrained condition. "Unrestrained" leaves a gap between the test specimen and the furnace walls; the gap allows the unrestrained beam to expand when heated. Previously, U.S. tests had been done only on restrained assemblies with no gap.

In the test, the specimen had the fire protection-thickness of only a restrained assembly—half the amount typically used for construction of unrestrained assemblies. The specimen performed acceptably, says Carter, who on Dec. 5 replaces the retiring Roger E. Ferch as AISC president. "Steel can be considered restrained and qualify for half the fire-protection thickness," Carter adds, which translates to half the material and labor costs.

The test results did not surprise Farid Alfawakhiri, AISI's senior engineer for construction codes and standards. During tests in other places around the world, steel-framed floors had demonstrated "good performance," he notes.

D982 now covers all common steel-framed floor configurations and provides two-hour assembly ratings for unprotected steel-deck and spray-applied fire-protection materials on steel beams with thicknesses sufficient to obtain a one-hour unrestrained-beam rating. D982 can be used in the U.S. and Canada with fire-protection materials bearing the UL Classification Mark and works with a range of steel-deck products.

Source: Engineering News-Record, November 22, 2016

| Top Main | Top Article | Next Article |

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MARKETPLACE

Steel Shots: Hudson Yard's Tallest Tower is Rising

30 Hudson Yards — a 90-story, steel-framed skyscraper slated to be the anchor of the new Hudson Yards mixed-use development in New York — is on the rise. At 1,296 ft, it will be completed in 2019 as the tallest tower in the development, the second-tallest office building in New York and home of the city's highest open-air observation deck, which cantilevers out from the building at 1,100 ft.

Thornton Tomasetti is providing the structural design services for the 2.6-million-sq.-ft tower with a 1.3-million-sq.-ft retail podium. According to Thornton Tomasetti, the tower's location presents a major challenge for this project. A significant portion of the building footprint is situated over a working rail yard, which limits the locations for building foundation and support columns because of track locations and clearances. The lower levels of the tower will contain multistory transfer trusses to distribute column loads to the nearest foundation locations. In many locations, these transfer systems will extend into the retail podium, requiring the two buildings to be constructed as one structure. W&W Steel (an AISC member and certified fabricator and erector) is erecting about 100,000 tons of structural steel for project.

30 Hudson Yards is one of several buildings planned for the 28-acre Hudson Yards site — the largest private real estate development in the history of the U.S. and the largest development in New York since Rockefeller Center. When completed in 2025, the site will include more than 17 million sq. ft of office, commercial and residential space. Built on top of an active rail yard, and located steps away from a recent subway extension, Hudson Yards will be thoroughly incorporated into the larger urban fabric. To learn more, visit www.hudsonyardsnewyork.com.

Source: Modern Steel Construction, November 11, 2016

| Top Main | Top Article |

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