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CCFSS News August 2002

Wei-Wen Yu Center for Cold-Formed Steel Structures

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CCFSS NEWS

Wei-Wen Yu Center for Cold-Formed Steel Structures at the University of Missouri-Rolla

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16th International Specialty Conference Scheduled for October 17-18 in Orlando, Florida

The 16th International Specialty Conference on Cold-Formed Steel Structures is scheduled to take place October 17-18, 2002 in Orlando, Florida. The Conference will be presented by the Department of Civil Engineering of the University of Missouri-Rolla and the Wei-Wen Yu Center for Cold-Formed Steel Structures. Other sponsors include American Iron and Steel Institute, Metal Building Manufacturers Association, Metal Construction Association, Rack Manufacturers Institute, Steel Deck Institute and Steel Stud Manufacturers Association. This event is designed to bring together leading scientists, researchers, educators, and engineers who have been engaged in the field of research and design of cold-formed steel structures for discussion of recent research findings and design considerations.

As in previous specialty conferences which have been held since 1971, this conference will include the presentation of technical papers and the publication of a volume of conference proceedings. A total of 56 papers are scheduled for presentation in several fields of interest including: Element Behavior, Flexural Members, Web Crippling of Beams, Compression Members, Rack Structures, Stainless Steel Structures, Wall Studs, Building Systems, Materials and Other Topics, and Connections. For a brief abstract of the papers see the August 2002 Edition of the CCFSS Technical Bulletin located on the "Newsletters and Technical Bulletins" page of the Center's website www.umr.edu/~ccfss.

The conference will be held at the Wyndham Orlando Resort, which is conveniently located on Orlando's International Drive only minutes away from the airport and such area attractions as Walt Disney World, Universal Studios, and Sea World. Advance registration is requested. For more information, including a conference registration form, program, and additional information on the Orlando area, visit the Center's website at www.umr.edu/~ccfss, or contact the Center by email at ccfss@umr.edu, or phone 573-341-4471.

AISI Committee on Specifications Meets

AISI's Committee on Specifications for the *Specification for the Design of Cold-Formed Steel Structural Members* and its subcommittees met for their semi-annual meeting on July 25 and 26 in Baltimore, MD. The busy two-day meeting consisted of updates on ongoing research as well as discussion on proposed changes to the Specification.

Research reports were presented on several AISI sponsored research projects. Dr. T.B. Pekoz updated the Committee on the progress of a study of cold-formed steel beam-columns. Test verification of webs with stress gradients is the focus of a study reported on by Dr. Ben Schafer. Dr. Schafer also updated the Committee on the status of his efforts to develop a specification on the Direct Strength Method (refer to www.ce.jhu.edu/bschafer). Drs. Tom Sputo and Perry Green reviewed the status of their study pertaining to lateral-torsional bracing requirements for C-sections subject to bending or axial load.

With the recent publication of the 2001 edition of the *North American Specification for the Design of Cold-Formed Steel Structural Members* the focus of these meetings was on future developments and enhancements to the next edition of the Specification. The 2001 edition of the Specification, the North American Specification, and future editions of the document will be applicable to cold-formed steel design in the United States, Canada, and Mexico.

Several enhancements and/or additions to the Specification were adopted at the July 25 and 26 meetings. These enhancements or additions pertained to the following: sheet-to-sheet spot weld connections, design for a strut purlin when attached to standing seam roof panels, factors of safety for diaphragm design, and anchorage requirements for standing seam.

For information pertaining to the purchase of the 2001 edition of the Specification contact AISI at 202-452-7100.

Continuing Education



Seminar on Practical Design of Cold-Formed Steel Structures

The Light Gauge Steel Engineers Association (LGSEA) presents a continuing education program specifically developed for engineers and architects who want to learn practical and efficient design of cold-formed steel structures. This seminar goes beyond theoretical concepts to show the actual application of techniques that every designer can use.

The day-long seminar will discuss the AISI Specification, New Design Standards, Design of Mid-Rise Load Bearing Structures, Software/Design Tools, Connection Design, and Applied Design. Handouts include LGSEA Technical Notes and Newsletters, seminar notes and design examples, and manufacturer literature. Participants will be awarded six Learning Units for attending this seminar.

In addition, a seminar on Design in Cold-Formed Steel Using the AISI Specification will be offered in conjunction with the Practical Design Seminar scheduled for Los Angeles, CA. Six Learning Units will be awarded for this seminar as well.

Seminars are scheduled for the following dates and locations:

Chicago, IL	Sept. 30, 2002
Atlanta, GA	Dec. 4, 2002
Charlotte, NC	Dec. 5, 2002
Orlando, FL	Dec. 6, 2002

For more information, or to obtain a registration form, visit the LGSEA website at www.lgsea.com, or email LGSEA at lgsea@aol.com.

Eurosteel 2002 Third European Conference on Steel Structures

Eurosteel 2002 - Third European Conference on Steel Structures, is scheduled for September 19-20, 2002 in Coimbra, Portugal.

The major themes of the conference will be: architecture and steel, cold-formed members and thin-walled sections, connections, composite structures, fire design, mixed building technology, plated structures seismic design, steel and composite bridges, steel members and systems, sustainable steel construction.

To learn more about the conference and registration visit the Eurosteel 2002 website at www.dec.uc.pt/eurosteel.

Sixteenth International Specialty Conference

The Wei-Wen Yu Center for Cold-Formed Steel Structures will present the Sixteenth International Specialty Conference on Cold-Formed Steel Structures on October 17 & 18, 2002. The conference is scheduled to be held at the Orlando Wyndham Resort in Orlando, FL.

For more information regarding the conference and accommodations, visit the Center's website at www.umn.edu/~ccfss. To be added to the mailing list for conference brochures, please email your name and mailing address to the Center at ccfss@umn.edu.

AISI Committee on Framing Standards: New Standards Launched

By Jay Larson, Bethlehem Steel

The ANSI-accredited American Iron and Steel Institute, through its Committee on Framing Standards, has begun the development of three new consensus standards that will provide state-of-the-art technical information and design specifications for cold-formed steel framing in residential and light commercial building constructions. The new Lateral Resistance Design standard will cover the wind and seismic design of shear walls and diaphragms. The new Wall Stud Design standard will address the design of wall stud assemblies that are braced by either sheathing or mechanical bracing. In addition, an Army Corps of Engineers Technical Instructions for the Design of Cold-Formed Load Bearing Steel Systems will be reviewed and guided through the consensus process and developed into a new AISI standard. For more information about the Committee on Framing Standards, please contact AISI at 202-452-7100, or check the AISI website at <http://www.steel.org/construction/framing/>.

University of Waterloo Recognizes Donor

The University of Waterloo recently recognized Mr. Glen White, President of Steelway Building Systems, for his outstanding contribution to the Department of Civil Engineering. Mr. White's generous donation of one of Canada's largest structural testing frames of its kind was gratefully acknowledged by both students and professors associated with the Department of Civil Engineering and the Canadian Cold-Formed Steel Research Group. This gift will significantly enhance the learning, research and teaching opportunities at the University and will ultimately benefit industry through its use.

The University of Waterloo is located in Waterloo, Ontario, Canada and is home to Canadian Cold-Formed Steel Research Group.

Thomas Murray Elected to National Academy of Engineering

Virginia Tech engineering professor Thomas M. Murray has been elected to the National Academy of Engineering (NAE), one of the highest honors that can be accorded an engineer. Academy membership recognizes those who have made important contributions to engineering theory and practice and have demonstrated unusual accomplishment in the pioneering of new and developing fields of technology.



Murray, the Montague-Betts Professor of Structural Steel Design in the Via Department of Civil and Environmental Engineering, was elected for his leadership in developing criteria for floor serviceability and his major contributions to structural steel design engineering.

Among Murray's numerous accomplishments is the development of techniques for building lightweight, affordable floor systems that reduce vibrations in large steel and concrete structures, such as airports and shopping malls. He is co-author of a design guide that is used extensively by structural engineers in the US and Canada, and he has made more than 100 presentations on floor serviceability to engineering groups worldwide.

In addition, Murray has worked for many years with the metal building industry to develop more economical roof systems and connections. Working in Virginia Tech's Structures and Materials Laboratory, which he founded, Murray and his graduate students have developed alternate methods for connecting beams and columns in buildings in areas that experience high levels of seismic activity. This work was conducted in response to structural problems that were brought to light by the 1994 Northridge, California earthquake.

"We are very proud of Tom and his selection to the National Academy," said CEE department head William Knocke. "This is a most worthy recognition of the numerous ways in which Tom has made important contributions to the fields of structural engineering and vibrations."

Murray came to Virginia Tech in 1987 after 17 years on the faculty of the University of Oklahoma, the last of which he spent as a distinguished visiting professor at the US Air Force Academy. He received his bachelors degree from Iowa State University, his masters from Lehigh University and doctorate from the University of Kansas.

Active in numerous professional organizations, he is a Fellow of the American Society of Civil Engineers. The American Institute of Steel Construction has honored Murray with a special citation for contributions to the art of steel construction and with the T.R. Higgins Lectureship Award. He also has received excellence in teaching awards from both Oklahoma and Virginia.

Murray was among 74 U.S. members and seven foreign associates elected from all engineering disciplines to NAE membership in 2002. The NAE, an independent, nonprofit institution, was established in 1964 under a congressional charter to provide national leadership and guidance on the application of engineering resources to vital issues. The academy has more than 2,000 members and foreign associates.

Roger Brockenbrough Named ASTM Committee A05 Service Award Winner

Roger Lewis Brockenbrough, President of R.L. Brockenbrough and Associates, Pittsburgh, Pa., is the first recipient of the ASTM Committee A05 Kenneth J. Boedecker, Jr., Distinguished Service Award. A resident of Pittsburgh, Brockenbrough has been a member of ASTM since 1979. He is a member of ASTM Committees A05 on Metallic-Coated Iron and Steel Products and B07 on Light Metals and Alloys. Committee A05, which consists of approximately 200 members, promotes the knowledge and the stimulation of research as well as the development of standards in the area of iron and steel products protected against corrosion by use of metallic coatings and non-metallic coatings.

President of his own company since 1991, Brockenbrough worked for more than 30 years for U.S. Steel prior to beginning R.L. Brockenbrough and Associates. In his career he has concentrated on structural behavior and design information for steel products.

Brockenbrough is a graduate of the Virginia Polytechnic Institute and State University in Blacksburg, Va., with a B.S. in civil engineering. He received his M.S. from the same school in structural engineering. He is a member of the American Society of Civil Engineers and the Transportation Research Board, and serves on specification committees of the American Iron and Steel Institute and the American Institute of Steel Construction. He is also a triathlete and has competed in 16 World Championships as a member of Team U.S.A., as well as two Ironman World Championships in Hawaii.

Committee A05 is one of 130 ASTM technical standards-writing committees. Established in 1898, ASTM International is one of the largest standards development and delivery systems in the world. ASTM standards are accepted and used in research and development, product testing, quality systems, and commercial transactions around the globe.

NAFTA Partners Announce Publication of First Tri-National Harmonized Construction Standard

AISI, CSA and CANACERO Collaborate in Joint Industry Event

The first structural standard in North America to be jointly developed for the North American Free Trade Agreement (NAFTA) partners has been published by the American Iron and Steel Institute.

The first edition of *The North American Specification for the Design of Cold-Formed Steel Structural Members and Commentary*, also known as the “harmonized” standard, is critical to growth in both the steel and construction industries because it will raise cold-formed steel design technology to the same level in all NAFTA countries. The harmonized standard will allow faster introduction of new technologies and will open up the marketplace for a wide variety of derivative products such as design aids and educational materials.

The North American Specification is an ANSI-approved American National Standard.

The North American Specification is the result of a cooperative effort by the AISI Committee on Specifications for the Design of Cold-Formed Steel Structural Members, the Canadian Standards Association (CSA) Technical Committee on Cold Formed Steel Structural Members (S136), and the Camara

Nacional de la Industria del Hierro y del Acero (CANACERO) in Mexico. Users will benefit in several ways from the publication of the new standard:

- Manufacturers of steel construction products should see increased productivity and will no longer have to re-engineer their products or systems to different standards.
- Standardization of engineering should allow faster introduction of new technologies.
- Designers who practice across borders will no longer need to learn multiple design standards.

The North American Specification has been adopted by the two Model Building Codes in the United States, the International Building Code (2003 edition) published by the International Code Council, and the National Fire Protection Association NFPA 5000 Building Code (2002 edition).

The Specification consists of a basic document, Chapters A through G, which is intended for use in all three countries. Three country-specific appendices, A through C, are included. The appendices include items of a broad nature, such as provisions for the

design method to be used and the reference source for loads and load combinations. The appendices also include country-specific technical provisions where full agreement between the three countries was not reached.

Efforts to minimize these differences will be made in future editions. The Specification provides an integrated treatment of Load and Resistance Factor Design (LRFD), Limit States Design (LSD), and Allowable Strength Design (ASD). This is accomplished by including the appropriate resistance factors for use with LRFD and LSD and the appropriate factors of safety for use with ASD. Equivalent LSD terminology is shown in brackets throughout the Specification.

Three systems of units are shown where the Specification provisions cannot be presented in dimensionless form: U.S. customary (pound, inch), SI (Newton, mm) and MKS (kg, cm), which is used in Mexico.

The Commentary on the Specification provides detailed technical background knowledge to the Specification.

The North American Specification for the Design of Cold-Formed Steel Structural Members and Commentary is available through the AISI website at www.steel.org.

MCA Announces 2002 Student Design Competition

The Metal Construction Association (MCA) has announced that it is accepting entries for the 2002 Student Design Competition “Using Metal in Construction.” The competition challenges upper level and graduate students in architecture to address architectural, structural, functional, and environmental issues in the design of an outdoor band/performance pavilion utilizing sheet metal components and metal structural members. This competition is an annual event to further MCA’s mission to promote awareness, within the architectural community, of the great variety of metal construction products.

Cash prizes totaling \$5,750 will be awarded to the top three winners, their faculty sponsors and schools. The deadline for entries is November 15, 2002. Interested students can obtain more information at www.metalconstruction.org, or by calling the Metal Construction Association at 847-375-4718.

AISI Releases New American National Standards for Steel Framing



The American Iron and Steel Institute (AISI) has released a new set of standards for steel framing, including an extensively revised version of the Standard for Cold-Formed Steel Framing—Prescriptive Method for One & Two Family Dwellings. These newly approved standards have received approval from the American National Standards Institute (ANSI). ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system.

The new AISI standards were developed through the AISI Committee on Framing Standards, an ANSI-approved, consensus standards body that develops, maintains, and improves AISI design and installation standards with the purpose of eliminating regulatory barriers and increasing the reliability and cost competitiveness of cold-formed steel framing.

Each of these standards has been adopted

for the International Residential Code (2003) and the new NFPA Building Code (2003). The new standards that were published include:

- ***Prescriptive Method Standard for Construction with Cold-Formed Steel Framing***,
- ***General Provisions for Construction with Cold-Formed Steel Framing***,
- ***Design Standard for Cold-Formed Steel Truss Construction***
- ***Header Design Standard for Construction with Cold-Formed Steel Framing***.

The General Provisions for Construction with Cold-Formed Steel Framing (\$30) contains standards for member identification and labeling through basic tolerances such as in-line framing. It is the base document from which all other documents are referenced.

The Prescriptive Method Standard for Construction with Cold-Formed Steel Framing (\$99) is an extensively updated version of previous CABO and IRC building code submittals. This new Prescriptive Method incorporates all of the latest cost-saving developments such as the L-Header, ASCE 7-98 load combinations, and an efficient design procedure for built-up headers.

The Design Standard for Cold-Formed Steel Truss Construction (\$45) provides technical information and specification on cold-formed steel truss construction and applies to the design, quality assurance, installation and testing of cold-formed steel trusses.

The Header Design Standard for Construction with Cold-Formed Steel Framing (\$37.50) is a two-part standard that gives design professionals the tools they need to design efficient built-up and L-shaped headers.

AISI's Codes and Standards work is conducted under the AISI Market Development Committee's Construction Market Program, which is supported through an investment by the following AISI member companies: Bethlehem Steel Corporation; Dofasco Inc.; IPSCO Inc.; Ispat Inland Inc.; National Steel Corporation; Nucor Corporation; Rouge Steel Company; United States Steel Corporation; USS-POSCO Industries; and Weirton Steel Corporation.

Kriner Named as MCA Technical Director

The Metal Construction Association has announced that Scott Kriner has been named to the newly-created position of Technical Director. Kriner brings an impressive array of credentials to the MCA Technical Director position. He has 21 years of solid experience, both domestic and international, in the coated steel sheet industry. He served in numerous positions of responsibility in the metals industry, including Chair of NCCA Prepainted Metal Roofing Task Force, member of the NCCA Board of Directors, Co-Chair of the MCA's Cool Roofing Task Force, Chair of the Cool Roof Rating Council's Test Farm Task Force, and Chairman of the Zinc and Aluminum Coaters Association. His most recent position, prior to joining MCA, was Development Engineer in the Commercial Department of Bethlehem Steel Corporation. Scott received his Bachelor of Science and Masters Degrees in Metallurgy and Materials Science Engineering from Lehigh University.

As Technical Director, Kriner will be the key person at the MCA to plan and direct technical support for the Residential Roofing Council, Commercial Roofing Council, and Wall Panel Council. This responsibility also includes monitoring and reporting on building code activity and environmental issues affecting metal in construction. In another major component of the job, Kriner will take a leading role in implementing a new technical and marketing plan of the Foam Panel Council.

Calendar

October 1-3, 2002
LGSEA Meetings
Chicago, IL
Contact: (202) 279-9251 or
lgsea@aol.com

October 17-18, 2002
16th International Specialty Conference
on Cold-Formed Steel Structures
Orlando, FL
Contact: ccfss@umr.edu

March 27-28, 2003
Meeting of the AISI Committee on
Framing Standards
New Orleans, LA
Contact: madeboyeku@steel.org

October 1-3, 2002
METALCON International
Chicago, IL
Contact: (800) 537-7765

December 9-11, 2002
3rd International Conference on
Advances in Steel Structures
ICASS 2002
Hong Kong, China
Contact: ceslchan@polyu.edu.hk

June 23-25, 2003
ASSCCA '03
Advances in Structures
Sydney, Australia
Contact: www.civil.usyd.edu.au/
asscca031

September 30-October 2, 2002
Meeting of the AISI Committee on
Framing Standards
Chicago, IL
Contact: madeboyeku@steel.org

February 3, 2003
Meeting of the AISI Committee on
Specifications
Location TBA
Contact: madeboyeku@steel.org

The *CCFSS News* and *CCFSS Technical Bulletin* are published bi-annually to the Center's website. Current and past volumes of each publication may be viewed in PDF format by directing your browser to <http://www.umd.edu/~ccfss/newsletters&bulletins.html>.

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