

PROGRAM – 18th International Specialty Conference on Cold-Formed Steel Structures

Wednesday, October 25, 2006

6-9 p.m. Registration: Rosen Centre Hotel

Thursday, October 26, 2006

7 a.m. – 4 p.m. Registration: Rosen Centre Hotel

8:00 a.m. Welcoming Remarks:
R.A. LaBoube, University of Missouri-Rolla

8:15 a.m. Remembering Don Wolford
W.W. Yu, University of Missouri-Rolla

8:30 a.m. Technical Session No. 1
Element and Cross Section Behavior

Chairpersons:

W.S. Easterling, Virginia Tech, Blacksburg, VA, USA
D.L. Johnson, Maus Engineering, Wolfeboro, NH, USA

“Elastic Post-Buckling Behavior of Uniformly Compressed Plates”
M.C.M. Bakker, M.Rosmanit, and H. Hofmeyer, Technische Universiteit Eindhoven, Eindhoven, The Netherlands

“Direct Strength Method for Lipped Channel Columns and Beams Affected by Local-Plate/Distortional Interaction”
N. Silvestre, P. Dinis, and D. Camotim, Technical University of Lisbon, Lisbon, Portugal

“Buckling Analysis of Cold-Formed Steel Members Using CUFSM: Conventional and Constrained Finite Strip Methods”
B.W. Schafer, Johns Hopkins University; Baltimore, MD, USA; and S. Adany, Budapest University of Technology and Economics, Budapest, Hungary

“A Detailed Examination of Interactive Buckling in Plain Channel Sections”
A. Aziz and J. Rhodes, University of Strathclyde, Glasgow, Scotland; M. Macdonald, Caledonian University, Glasgow, Scotland; and D. Nash, University of Strathclyde, Glasgow, Scotland

“Post-Buckling in the Distortional Mode and Buckling Mode Interaction of Cold-Formed Thin-Walled Sections with Edge Stiffeners”
D.C.Y. Yap and G.J. Hancock, University of Sydney, Sydney, Australia

9:45 a.m. Break

10:15 a.m. Technical Session No. 2
Flexural Members

Chairpersons:

D.S. Ellifritt, University of Florida, Gainesville, FL, USA
R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

“Finite Element Modeling of Cold-Formed Steel Beams: Validation and Application”
C. Yu, University of North Texas, Denton, TX, USA; and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Effective Width Method Based Design for Distortional Buckling of Cold-Formed Steel Beams”
C. Yu and T. Lokie, University of North Texas, Denton, TX, USA

“Increasing the Strength and Stiffness of Cold-Formed Hollow Flange Channel Sections for Web Crippling”

Wilkinson, P. Liu, J. Magpayo, and H. Nguyen, University of Sydney, Sydney, Australia

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“Distortional Buckling of Simple Lipped Channel in Bending - Results of the Experimental Analysis Versus Direct Strength Methods”

C.E. Javaroni, UNESP, SP, Brazil; and R.M. Goncalves, University of Sao Paulo, Sao Paulo, Brazil

“Lateral Distortional Buckling Behaviour of a New Cold-Formed Hollow Flange Channel Section”

D. Mahaarachchi and M. Mahendran, Queensland University of Technology, Brisbane, Queensland, Australia

“Section Moment Capacity of a New Cold-Formed Hollow Flange Channel Section”

M. Mahendran and D. Mahaarachchi, Queensland University of Technology, Brisbane, Queensland, Australia

“Finite Element Analysis of Web Crippling Behaviour of Cold-Formed Steel Flexural Members”

M. Macdonald and M.A. Heiyantuduwa, Glasgow Caledonian University, Glasgow, Scotland; and J. Rhodes, University of Strathclyde, Glasgow, Scotland

“Parameter Study for First-Generation Sheeting Failure using a Theoretical and FE Model”

H. Hofmeyer, M. Rosmanit, and M.C.M. Bakker, Technische Universiteit Eindhoven, Eindhoven, The Netherlands

12:15 p.m. Lunch

**1:30 p.m. Technical Session No. 3
Floor Joists and Floor Joist Assemblies**

Chairpersons:

T. Sputo, University of Florida, Gainesville, FL, USA
W.E. Schultz, NUCOR Research and Development, Norfolk, NE, USA

“The Strength of Stiffened CFS Floor Joist Assemblies with Offset Loading”

S.R. Fox, Canadian Sheet Steel Building Institute, Cambridge, Ontario, Canada

“iSPAN, A Light Steel Floor System”

D.M. Fox, iSPAN, Richmond Hill, Ontario, Canada; R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada; and M.R. Strickland, Richmond Hill, Ontario, Canada.

“The Strength of CFS Floor Assemblies with Clip Angle Bearing Stiffeners”

S.R. Fox, Canadian Sheet Steel Building Institute, Cambridge, Ontario, Canada

“Vibration Characteristics and Acceptability of Cold-Formed Steel Joists”

Y.F. Chen, Penn State Harrisburg, Middletown, PA

**2:30 p.m. Technical Session No. 4
Compression Members**

Chairpersons:

J. Rhodes, University of Strathclyde, Glasgow, Scotland
B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Impact of Holes on the Elastic Buckling of Cold-Formed Steel Columns with Application to the Direct Strength Method”

C. Moen and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Cold-Formed Steel Angles Under Axial Compression”

G.M.B. Chodraui, University of Sao Paulo, Sao Paulo, Brazil; Y. Shifferaw, Johns Hopkins University, Baltimore, MD, USA; M. Malite, University of Sao Paulo, Sao Paulo, Brazil; and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

3:00 p.m.

Break

3:30 p.m.

**Technical Session No. 5
Rack and Frame Structures**

Chairpersons:

J. Crews, Unarco Material Handling, Springfield, TN, USA

S.R. Fox, Canadian Sheet Steel Building Institute, Cambridge, Ontario, Canada

“Stability of Cold-Formed Steel Storage Racks under Variable Loading”

L. Xu, X.H. Wang, and H.L. Wang, University of Waterloo, Waterloo, Ontario, Canada

“Buckling Behavior of Cold-Formed Scaffolding Tubes”

A. Hubner and H. Saal, Universitat Karlsruhe, Karlsruhe, Germany

“GBT-Based Analysis of the Local and Global Buckling Behavior of Cold-Formed Steel Frames”

C. Basaglia, D. Camotim, and N. Silvestre, Technical University of Lisbon, Lisbon, Portugal

“Cold-Formed Steel Pitched-Roof Portal Frames of Back-to-Back Plain Channel Sections and Bolted Joints”

A. Stratan, Z. Nagy, and D. Dubina, Politehnica of Timisoara, Timisoara, Romania

“Development of a Portal Frame System on the Basis of Component Testing”

J. Rhodes, University of Strathclyde, Glasgow, Scotland; and R. Burns, Metsec PLC., Birmingham, UK

4:45 p.m.

Adjourn

5:30 – 6:30 p.m.

Reception: Sponsored by
American Iron and Steel Institute
Metal Building Manufacturers Association
Metal Construction Association
Rack Manufacturers Institutes
Steel Deck Institute
Steel Stud Manufacturers Association

Friday, October 27, 2006

7 a.m. – Noon

Registration: Rosen Centre Hotel

8:30 a.m.

**Technical Session No. 6
Design Standards and Guides Development**

Chairpersons:

R. L. Brockenbrough, R.L. Brockenbrough and Associates, Pittsburgh, PA, USA

W.W. Yu, University of Missouri-Rolla, Rolla, MO, USA

“A Design Guide for Bracing Cold-Formed Steel Structures”

T. Sputo, Sputo and Lammert Engineering, Gainesville, FL, USA; and J. Turner, Ground Floor Engineering, Ft. Lauderdale, FL, USA

“AISI Standards for Cold-Formed Steel Framing”

J.W. Larson, American Iron and Steel Institute, Washington, D.C., USA

“AISI Test Procedures for Cold-Formed Steel Structural Members and Connections”

H. Chen, American Iron and Steel Institute, Washington, D.C., USA; R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA; T.M. Murray, Virginia Tech, Blacksburg, VA, USA; and T. Sputo, University of Florida, Gainesville, FL, USA

“Organizations and the Move Toward Standardization in the North American Cold-Formed Steel Framing Industry”

D. Allen, Steel Framing Alliance, Steel Stud Manufacturers Association, Washington, D.C., USA

“The New SDI Diaphragm Design Manual”

D. Li, Canam Steel Corporation, Point of Rocks, MD, USA

“MBMA-Sponsored Cold-Formed Steel Research 50th Anniversary Retrospective”

W.L. Shoemaker, Metal Building Manufacturers Association, Cleveland, OH, USA

“Designing Cold-Formed Steel Using the Direct Strength Method”

B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

10:15 a.m. Break

**10:45 a.m. Technical Session No. 7
Building Roof Systems**

Chairpersons:

W.L. Shoemaker, Metal Building Manufacturers Association, Cleveland, OH, USA

R.B. Haws, NUCONSTEEL, Denton, TX, USA

“Component Stiffness Method to Predict Lateral Restraint Forces in End Restraint Single Span Z-Section Supported Roof Systems with One Flange Attached to Sheathing”

M.W. Seek and T.M. Murray, Virginia Tech, Blacksburg, VA, USA

“Influence of Non-Structural Components on Roof Diaphragm Stiffness of Single-Story Steel Buildings”

S. Mastrgiuseppe and C.A. Rogers, McGill University, Montreal, Canada; and R. Tremblay and C.D. Nedisan, Ecole Polytechnique, Montreal, Canada

“Analysis of Conventionally Framed Hip Roofs Using Cold-Formed Steel Members”

L. Waldo, KPFF Consulting Engineers, San Diego, CA, USA; S.F. Stephens, Kansas State University, Manhattan, KS, USA; and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

“Investigation of the Shear Stiffness of Profiled Steel Sheeting Diaphragms with Only Two Edges Fastened”

M. Duerr and H. Saal, Universitat Karlsruhe, Karlsruhe, Germany

11:45 a.m. Lunch

**1:00 p.m. Technical Session No. 8
Wall Studs and Wall Stud Assemblies**

Chairpersons:

D. Allen, Steel Stud Manufacturers Association, Washington, D.C., USA

J.W. Larson, American Iron and Steel Institute, Washington, D.C., USA

“Accumulation of Bracing Strength and Stiffness Demand in Cold-Formed Steel Stud Walls”

T. Sputo and K. Beery, University of Florida, Gainesville, FL, USA

“Local and Distortional Buckling of Cold-Formed Steel Studs Using Direct Strength”

J. Tovar, University of Texas, Austin, TX, USA; and T. Sputo, University of Florida, Gainesville, FL, USA

“Longwave Buckling of Cold-Formed Steel Studs Using Direct Strength”

T. Sputo, University of Florida, Gainesville, FL, USA; and J. Tovar, University of Texas, Austin, TX, USA

“Lateral Response of Sheathed Cold-Formed Shear Walls: An Analytical Approach”

L. Fiorino, G. Della Corte, and R. Landolfo, University of Naples “Federico II”, Naples, Italy

“A Simplified Method of Evaluating Lateral Strengths of Shear Wall Panels with Cold-Formed Steel Framing” L.

Xu and J. Martinez, University of Waterloo, Waterloo, Ontario, Canada

“Testing and Design of Light Gauge Steel Frame/9mm OSB Panel Shear Walls”

C. Blais and C.A. Rogers, McGill University, Montreal, Canada

“Web Crippling of Sigma-Shaped Metal Studs in a Wall Assembly”

M.S. Boylan and E.A. Sumner, North Carolina State University, Raleigh, NC, USA; and N.A. Rahman and E.R. diGirolamo, The Steel Network, Raleigh, NC, USA

2:45 p.m.

**Technical Session No. 9
Connections**

Chairpersons:

J. Mattingly, Nicholas J. Bouras, Inc., Summit, NJ, USA

H. Chen, American Iron and Steel Institute, Washington, D.C., USA

“Shear Lag Effect on Bolted L-Shaped Cold-Formed Steel Tension Members”

C.L. Pan, Chaoyang University of Technology, Taiwan, R.O.C.

“Bolted Tension Member Design - A New Approach”

D.M. Fox and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

“Influence of Insulation on the Shear Strength of Screw Connections”

A.R. Lease, Cives Steel Corp., Winchester, VA, USA; and W.S. Easterling, Virginia Tech, Blacksburg, VA, USA

3:30 p.m.

Closing Remarks:

R.A. LaBoube, University of Missouri-Rolla

3:45 p.m.

Adjournment