

PROGRAM

Wednesday, October 16, 2002

6-9 p.m. Registration: Wyndham Orlando Resort

Thursday, October 17, 2002

7 a.m. – 4 p.m. Registration: Wyndham Orlando Resort

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

8:15 a.m. Technical Session No. 1
Element Behavior

Chairpersons:

G.J. Hancock, University of Sydney, Sydney, Australia

D.L. Johnson, Consultant, Wolfeboro, NH, USA

“Effective Widths of Unstiffened Elements in Combined Compression and Bending”

M.R. Bambach and K.J.R. Rasmussen, University of Sydney, Sydney, Australia

“Design Provisions for Unstiffened Elements in Combined Compression and Bending”

M.R. Bambach and K.J.R. Rasmussen, University of Sydney, Sydney, Australia

“Stiffened Elements with Multiple Intermediate Stiffeners and Edge Stiffened Elements with Intermediate Stiffeners”

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

“Postbuckling Analysis of Light Gauge Members Using Finite Strips”

J. Rhodes, University of Strathclyde, Glasgow, Scotland, UK

“GBT-Based Distortional Buckling Formulae for Thin-Walled Channel Columns and Beams”

D. Camotim and N. Silvestre, University of Lisbon, Lisbon, Portugal

9:30 a.m. Break

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

Chairpersons:

H.H. Chen, American Iron and Steel Institute, Washington, DC, USA

D.S. Ellifritt, University of Florida, Gainesville, FL, USA

“Optimum Design of Cold-Formed Steel Z-Shaped Purlins Using a Genetic Algorithm”

W. Lu and P. Makelainen, Helsinki University of Technology, Espoo, Finland; and J. Kesti, Rautaruuki Oyj, Helsinki, Finland

“Adaptive Nonlinear Finite Element Analyses for High Strength Steel Cladding Systems”

M. Duan and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Ultimate Failure Behaviour of Second-Generation Sheeting Subjected to Combined Bending Moment and Concentrated Load”

H. Hofmeyer, Technische Universiteit Eindhoven, Emmen, The Netherlands; and M. Kaspers, IngenieursGroep, Emmen, The Netherlands; and H.H. Snijder and M.C.M Bakker, Universiteit Eindhoven, Emmen, The Netherlands

“Local Buckling Tests on Cold-Formed Steel Beams”

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

“Interim Design Rules for Flexure in Cold-Formed Steel Webs”

B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA; and T.W.J. Trestain, T.W.J. Trestain Structural Engineering, Toronto, Ontario, Canada

“Study of an Innovative Built-up Light Gauge Members”

G. Di Lorenzo and R. Landolfo, University of Chieti, Pescara, Italy

“Application of a Finite Element Model to a Cold-formed Steel C-Section with a Bearing Stiffener”

S.R. Fox, Canadian Sheet Steel Building Institute and University of Waterloo, Waterloo, Ontario, Canada; and G.W. Brodland, University of Waterloo, Waterloo, Ontario, Canada

11:45 p.m.

Lunch

1:00 p.m.

**Technical Session No. 3
Web Crippling of Beams**

Chairpersons:

W. Schultz, Nucor Research and Development, Norfolk, NE, USA

J. Fisher, Computerized Structural Design, Inc., Milwaukee, WI, USA

“Web Crippling Strength of Multi-Web Steel Deck Sections Under End One Flange Loading”

W.S. Easterling and Onur Avci, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA

“Design of Channels Subjected to Concentrated Bearing Loads”

B. Young, Hong Kong University of Science and Technology, Hong Kong; and G.J. Hancock, University of Sydney, Australia

“Web Crippling of Cold-Formed Steel Members”

B. Beshara, Dietrich Design Group, Hammond, IN, USA; and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

“Bending and Web Crippling of Cold-Formed Steel Members”

J.A. Wallace and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada; and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

“Web Crippling and Combined Bending and Web Crippling of Cold-Formed Steel Box-Beam Headers”

S.F. Stephens, Kansas State University, Manhattan, KS, USA; and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

2:15 p.m.

**Technical Session No. 4
Compression Members**

Chairpersons:

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

“Behaviour of Cold-Formed Thin-Walled Steel Short Columns with Service Holes at Elevated Temperatures”

M. Feng, Y.C. Wang and J.M. Davies, University of Manchester, Manchester, UK

“Compression Tests of Cold-Reduced High Strength Steel Long Columns”

D. Yang, G.J. Hancock and K.J.R. Rasmussen, University of Sydney, Sydney, Australia

“Compression Tests of Cold-Reduced High Strength Steel Stub Columns”

D. Yang, G.J. Hancock, University of Sydney, Sydney, Australia

“Plastic Strength of Thin-Walled Members”

D. Dubina, Polytechnica University of Timisoara, Timisoara, Romania; and V. Ungureanu, Romanian Academy of Sciences, Timisoara Branch, Timisoara, Romania

3:15 p.m.

Break

3:45 p.m.

**Technical Session No. 5
Rack Structures**

Chairpersons:

W.R. Midgley, Midgley, Clauer and Associates, Youngstown, OH, USA
S.R. Fox, Canadian Sheet Steel Building Institute, Cambridge Ontario, Canada

“The Behavior of Drive-In Storage Structures”

M.H.R. Godley, Oxford Brookes University, Oxford, UK

“The Design of the Pallet Program”

R.G. Beale and M.H.R. Godley, Oxford Brookes University, Oxford, UK

“Design of Industrial Storage Racks”

A.T. Sarawit and T. Pekoz, Cornell University, Ithaca, NY, USA

“Sway Stability Testing of High Rise Rack Sub-Assemblages”

E. Harris and G.J. Hancock, University of Sydney, Sydney, Australia

4:45 p.m.

**Technical Session No. 6
Stainless Steel Structures**

Chairpersons:

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

K.J.R. Rasmussen, University of Sydney, Sydney, Australia

“Experimental Investigations of Cold-Formed Stainless Steel RHS Columns”

B. Young, Hong Kong University of Science and Technology, Hong Kong; and Y. Liu, Nanyang Technological University, Singapore

“Finite Element Modelling of Stainless Steel Columns with Variation in Mechanical Properties”

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

5:15 p.m.

Adjourn

5:30 p.m. – 6:30 pm

Reception: Sponsored by

**American Iron and Steel Institute
Metal Building Manufacturers Association
Metal Construction Association
Rack Manufacturers Institute
Steel Deck Institute
Steel Stud Manufacturers Association**

Friday, October 18, 2002

7:00 a.m. – 12:00 Noon

Registration: Wyndham Orlando Resort

8:00 a.m.

**Technical Session No. 7
Wall Studs**

Chairpersons:

N. Peterson, DEVCO Engineering, Corvallis, OR, USA
J.W. Larson, Bethlehem Steel Corporation, Bethlehem, PA, USA

“An Experimental Study on the Load Carrying Capacity of Cold-Formed Steel Studs and Panels”

Y.S. Tian, J. Wang, T.J. Lu, C.Y. Barlow, University of Cambridge, Cambridge, UK; and
J. Evans, Banro Sections Ltd., West Midlands, UK

“Stress/Strain Distributions and Role of Sheathing in Partition Wall Panels Subjected to Compression”

Y.S. Tian, J. Wang, T.J. Lu, C.Y. Barlow, University of Cambridge, Cambridge, UK; and
J. Evans, Banro Sections Ltd., West Midlands, UK

“Preliminary *R*-Values for Seismic Design of Steel Stud Shear Walls”

Y. Zhao and C.A. Rogers, McGill University, Monreal, Quebec, Canada

“Seismic Performance of Wall-Stud Shear Walls”

D. Dubina and L.A. Fulop, University of Timisoara, Timisoara, Romania

“Analysis of Sheathed Cold-Formed Steel Wall Studs”

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

“A Study on the Flexural Strength Capacity of Wall Stud Assembly”

J.Y. Song and Y.B. Kwon, Yeungnam University, Gyongsan, Korea; and H.S. Chung and
G.D. Kim, Research Institute of Industrial Science and Technology, Hwasung, Korea

9:30 a.m.

Break

10:00 a.m.

**Technical Session No. 8
Building Systems**

Chairpersons:

W.L. Shoemaker, Metal Building Manufacturers Association, Cleveland, OH, USA
R.B. Haws, American Buildings Company, Atlanta, GA, USA

“Experimental Analysis of Cold-Formed Steel Channel and Lipped-Channel Profiles Connected to Roof Panel – R Factor Analysis”

C.E. Javaroni, R.M. Goncalves and M. Malite, University of Sao Paulo at Sao Carlos, Sao Carlos, Brazil

“Numerical and Experimental Studies of an Innovative Cold-Formed Steel Building”

G. Darcy and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Axial Strength of Purlins Attached to Standing Seam Roof Panels”

J.A. Stolarczyk and J.M. Fisher, Computerized Structural Design, Milwaukee, WI, USA;
and A. Ghorbanpoor, University of Wisconsin, Milwaukee, WI, USA

“Direct Strength Method for the Design of Purlins”

L. Quispe, Addicoat Hogarth Wilson, Chatswood, Australia; and G.J. Hancock,
University of Sydney, Sydney, Australia

11:00 a.m.

**Technical Session No. 9
Materials and Other Topics**

Chairpersons:

P.A. Seaburg, Southern Illinois University-Edwardsville, Edwardsville, IL, USA
T. Pekoz, Cornell University, Ithaca, NY, USA

“Vibration Characteristics of Lightweight Floors Using Cold-Formed Steel Joist”

F.M. Tangorra, L. Xu and W.C. Xie, University of Waterloo, Waterloo, Ontario, Canada

“Some Improvements to the Design of Sandwich Panels Subject to Local Buckling Effects”

N. Pokharel and M. Mahendran, Queensland University of Technology, Brisbane,
Australia

“On the Computation of the Cross-Section Properties of Arbitrary Thin-Walled Structures”

C. Xiang, A.C.J. Luo, and P. Seaburg, Southern Illinois University, Edwardsville, IL,
USA and; R. Crain, Cooper B-Line Inc., Highland, IL, USA

“A Study on the Factors that Influence the Acoustic Performance of a Steel Stud Wall Assembly”

H.S. Chung and G.D. Kim, Research Institute of Industrial Science and Technology,
South Korea; and K.S. Yang and K.W. Kim, Korea Institute of Construction Technology,
South Korea

12:00 p.m.

Lunch

1:00 p.m.

**Technical Session No. 9 (Continued)
Materials and Other Topics**

Chairpersons:

W.S. Easterling, Virginia Polytechnic Institute and State University, Blacksburg, VA,
USA
R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

“North American Specification for Design of Cold-Formed Steel”

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

H.H. Chen, American Iron and Steel Institute, Washington, DC, USA

“AISI Committee on Framing Standards – Enabling the Widespread and Economic Use of Steel Framing”

K. Bielat, American Iron and Steel Institute, Washington DC, USA; and J.W. Larson, Bethlehem Steel Corporation, Bethlehem, PA, USA

“Progress on the Direct Strength Method”

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

“Variables Affecting the Shear Bond Resistance of Composite Floor Deck Systems”

R. Tremblay, Ecole Polytechnique, Montreal, Quebec, Canada; and C.A. Rogers, McGill University, Montreal, Quebec, Canada; and P. Gignac, The Canam Manac Group, Boucherville, Quebec, Canada; and G. Degrange, Ecole Polytechnique, Montreal, Quebec, Canada

2:00 p.m.

**Technical Session No. 10
Connections**

Chairpersons:

R.L. Brockenbrough, R.L. Brockenbrough and Associates, Pittsburgh, PA, USA
J. Mattingly, Nicholas J. Bouras, Inc., Summit, NJ, USA

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

C.L. Pan and P.C. Chiang, Chaoyang University of Technology, Taichung County, Taiwan

“Structural Behavior of Bolted Connections in Cold-Formed Steel Members Emphasizing the Shear Lag Effect”

C.H. Maiola, M. Malite, R. Goncalves and J.M. Neto, University of Sao Paulo at Sao Carlos Campus, Sao Paulo, Brazil

“Evaluation of Bolt-Hole Elongation Stiffness for the Stiffness Prediction of Cold-Formed Steel Bolted Moment-Connections”

J.B.P. Lim, The Steel Construction Institute, UK; and D.A. Nethercot, I.C.S.T.M., UK

“Testing of Bolted Cold-Formed Steel Connections in Bearing (With and Without Washers)”

J.A. Wallace and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

“Structural Behaviour of Self-Piercing Riveted Connections in Steel Framed Housing”

S. Moss and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Inelastic Response of Arc-Spot Welded Deck-to-Frame Connections for Steel Roof Deck Diaphragms”

M. Peuler and C.A. Rogers, McGill University, Montreal, Quebec, Canada; and R. Tremblay, Ecole Polytechnique, Montreal, Quebec, Canada

“Strength of Flare-Bevel and Flare-Vee Welded Connections in G450 Sheet Steel”

L. Teh and G.J. Hancock, University of Sydney, Sydney, Australia

“Strength and Behavior of Fillet Welded Connections in G450 Sheet Steel”

L. Teh and G.J. Hancock, University of Sydney, Sydney, Australia

“Self-Drilling Screw Joints for Cold-Formed Channel Portal Frames”

J. Mills, University of South Australia, Adelaide, South Australia, Australia; and R.A. LaBoube, University of Missouri-Rolla, Rolla, Missouri, USA

***“Calibrations of Cold-Formed Steel Welded Connections”**

F.M. Tangorra and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada; and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

***“Calibrations of Bolted Cold-Formed Steel Connections in Bearing (With and Without Washers)”**

J.A. Wallace and R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada; and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

4:15 p.m.

Closing Remarks

R. A. LaBoube, University of Missouri-Rolla, Rolla, MO

4:25 p.m.

Adjourn

* Will not be presented, but will appear in proceedings.