

**17<sup>th</sup> International Specialty Conference on Cold-Formed Steel Structures**  
**November 4 – 5, 2004**  
**Orlando, FL**

**PROGRAM**

**Wednesday, November 3, 2004**

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

**Thursday, November 4, 2004**

**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:**

W.S. Easterling, Virginia Tech, Blacksburg, VA, USA

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

**“Local-Plate and Distortional Post-Buckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediate Stiffeners”**

N. Silvestre and D. Camotim, IST/ICIST, TU Lisbon, Lisbon, Portugal

**“Distortional Buckling Tests on Cold-Formed Steel Beams”**

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

**“Stress Gradient Effect on the Buckling of Thin Plates”**

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

**“Distortional Buckling of Cold-Formed Steel Members”**

G.M.B. Chodraui, M. Malite, R.M. Goncalves, and J.M. Neto, University of Sao Paulo, Sao Paulo, Brazil

**9:15 a.m.**

**Technical Session No. 2**  
**Flexural Members and Web Crippling of Beams**

**Chairpersons:**

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

M. Macdonald, Glasgow Caledonian University, Glasgow, UK

**“Ultimate Strength of a Continuous Decking of Cold-Drawn Low-Ductility High Strength Steel”**

A. M. Akhand and K.A. Sanjery, University of Tenaga Nasional, Malaysia; and W.H.W. Badaruzzaman, Universiti Kebangsaan Malaysia, Malaysia

**“Channel Section Beams Under Static and Impact Loading”**

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

**“Behavior of Complex Hat Shapes Used as Truss Chord Members”**

N. Nuttayasakul and W.S. Easterling, Virginia Tech, Blacksburg, VA, USA

**“Introduction to the Theory and Finite Element Implementation of (Steel) Plasticity”**

**“Cold-Formed Steel Examples to the Theory and Finite Element Implementation of Plasticity”**

H. Hofmeyer, Technische Universiteit Eindhoven, Eindhoven, The Netherlands

**“Web Crippling of Cold-Formed Steel Multi-Web Deck Sections Subjected to End One-Flange Loading”**

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

**10:30 a.m. Break**

**11:00 a.m. Technical Session No. 3  
Compression Members**

**Chairpersons:**

J. Rhodes, University of Strathclyde, Glasgow, UK

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

**“Design of Fixed-Ended Cold-Formed Steel Plain Angle Compression Members”**

B. Young, Hong Kong University of Science and Technology, Hong Kong

**“An Experimental Study of the Compressive Performance of Structural Panels with Cold-Formed Thin-Walled Perforated Steel Channels”**

B. Salhab and Y.C. Wang, UMIST & The University of Manchester, Manchester, UK

**“Design of Cold-Formed Steel Compression Members Subject to Distortional Buckling at Elevated Temperatures”**

T. Ranawaka and M. Mahendran, Queensland University of Technology, Brisbane, Australia

**“Numerical Simulations of High Strength Steel Box-Shaped Columns”**

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

**“Design of Cold-Formed Web Members with Non-Uniform Cross Sections”**

S. Parent, SMI Joist Iowa, Iowa Falls, IA, USA; and J.J. Pote, SMI Joist Arkansas, Hope, AR, USA; and K.W. Neale, Universite de Sherbrooke, Sherbrooke, Quebec, Canada

**12:15 p.m.**

**Lunch**

**1:30 p.m.**

**Technical Session No. 4  
Rack Structures**

**Chairpersons:**

W.R. Midgley, Midgley, Clauer and Associates, Youngstown, OH, USA

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

**“Tests of Storage Rack Channel Columns with Rear Flanges”**

N. Abdel-Rahman, The Steel Network, Raleigh, NC, USA; and A. Fadel and M. El-Sadaawy, Housing and Building Research Center, Giza, Egypt; and S. Mourad, Cairo University, Giza, Egypt

**“Shear Stiffness of Pallet Rack Upright Frames”**

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

**“Initial Geometrical Imperfections in Three-Storey Modular Steel Scaffolds”**

W.K. Yu, K.F. Chung, and S.L. Chan, The Hong Kong Polytechnic University, Hong Kong SAR, China

**2:15 p.m.**

**Technical Session No. 5  
Stainless Steel Structures**

**Chairpersons:**

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

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

**“Design of Cold-Formed Stainless Steel Sections with Single Web Subjected to Web Crippling”**

F. Zhou and B. Young, Hong Kong University of Science and Technology, Hong Kong

**“Stainless Steel Stub Columns Subject to Combined Bending and Axial Loading”**

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

**“Experimental Investigation of Distortional Buckling of Cold-Formed Stainless Steel Sections”**

M. Lecce and K. Rasmussen, University of Sydney, Sydney, Australia

**“Design of Stainless Steel Sections against Distortional Buckling”**

M. Lecce, K. Rasmussen, University of Sydney, Sydney, Australia

**“Material Properties of Cold-Formed High Strength Stainless Steel Tubular Sections”**

B. Young and W.M. Lui, Hong Kong University of Science and Technology, Hong Kong

**3:30 p.m.**

**Break**

**4:00 p.m.**

**Technical Session No. 6  
Materials and Other Topics**

**Chairpersons:**

T. Pekoz, Cornell University, Ithaca, NY, USA

B. Young, Hong Kong University of Science and Technology, Hong Kong, China

**“Software Development for Cold-Formed Steel Elements”**

F.J. Granados and W.G. Reyes, ACESCO, Bogota, Colombia

**“Mechanical Properties of Cold-Formed Steel at Elevated Temperatures”**

J. Chen and B. Young, Hong Kong University of Science and Technology, Hong Kong, China

**“Report on the Development of a Cold-Formed Steel Design Course at Kansas State University”**

V.J. Kircher, Page McNaghten Associates, Fairway, KS, USA; and S.F. Stephens, Kansas State University, Manhattan, KS, USA

**“An Update on Cold-Formed Steel Framing Standards in the United States”**

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

**“The 2002 AISI Cold-Formed Steel Design Manual”**

R.C. Kaehler, Computerized Structural Design, S.C., Milwaukee, WI, USA; and H.H. Chen, American Iron and Steel Institute, Washington, DC, USA

**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, November 5, 2004**

**7:00 a.m. – 12:00 Noon**

**Registration:** Wyndham Orlando Resort

**8:00 a.m.**

**Technical Session No. 7  
Wall Studs**

**Chairpersons:**

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

J.W. Larson, Bethlehem Steel Corporation, Bethlehem, PA, USA

**“Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs”**

P.S. Green, T. Sputo, and V. Urala, University of Florida, Gainesville, FL, USA

**“Bracing Strength and Stiffness Requirements for Axially Loaded Lipped Cee Studs”**

P.S. Green, T. Sputo, and V. Urala, University of Florida, Gainesville, FL, USA

**“Experimental Capacity Assessment of Cold-Formed Boxed Stud Wall Systems Used in Australian Residential Construction”**

M. Pham, J. Mills, and Y. Zhuge, University of South Australia, Mawson Lakes, South Australia, Australia

**“Design of Distance Profiles in Walls”**

N. Albrecht and H. Saal, Universitat Karlsruhe, Karlsruhe, Germany; and R. Podleschny, IFBS, Dusseldorf, Germany

**“Performance of Deep Leg L-Headers”**

R. Serrette and K. Chau, Santa Clara University, Santa Clara, CA, USA and; D. Peyton, Anderson-Peyton Structural Engineering Consultants, Federal Way, WA, USA and; B. Waters, Hunt Building Company Ltd., Pearl City, HI, USA

**“Cold-Formed Steel Slip-Track Connection”**

J.R. Gerloff, Computerized Structural Design, Milwaukee, WI, USA; and P. Huttlemailer, Milwaukee School of Engineering, Milwaukee, WI, USA; and P.W. Ford, Matsen Ford Design, Pewaukee, WI, USA

**“Shear Rigidity of Sheathed Walls with Pneumatically Driven Pin Connections”**

S.W. Baur, University of Missouri-Rolla, Rolla, MO, USA and; W. Suaris, University of Miami, Coral Gables, FL, USA

**9:45 a.m.**

**Break**

10:15 a.m.

**Technical Session No. 8  
Building Systems**

**Chairpersons:**

W.L. Shoemaker, Metal Building Manufacturers Association, Cleveland, OH, USA  
R.B. Haws, NUCONSTEEL, Denton, TX

**“A New Ultra Long-Spanning, Combined Steel Formwork and Reinforcement Hybrid Decking System Using Cold-Formed Components”**

M. Glaesle and M. Patrick, University of Western Sydney, Sydney, Australia; and R. Grey, OneSteel Reinforcing, Sydney, Australia

**“Influence of Profile Distortion on the Shear Flexibility of Profiled Steel Sheeting Diaphragms”**

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

**“Seismic Performance of Sheathed Cold-Formed Shear Walls”**

R. Landofo, L. Fiorino, and G. Della Corte, University of Naples, Naples, Italy

**“Cold-Formed Steel Frame Shear Wall Applications with Structural Adhesives”**

R. Serrette, I. Lam, H. Qi, and H. Hernandez, Santa Clara University, Santa Clara, CA, USA; and A. Toback, Henkel Loctite Corporation, Rocky Hill, CT

**“Effects of Hail Damage on the Carrying Capacity of Standing Seam Profiles”**

A. Heubner and H. Saal, University of Karlsruhe, Karlsruhe, Germany

11:30 am.

**Lunch**

12:45 p.m.

**Technical Session No. 8 (Continued)  
Building Systems**

**Chairpersons:**

W.E. Schultz, Nucor Research and Development, Norfolk, NE, USA  
R.M. Schuster, University of Waterloo, Waterloo, Ontario, Canada

**“Computer Modeling of Sloped Z-Purlin Supported Roof Systems to Predict Lateral Restraint Force Requirements”**

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

**“Roof Diaphragm Strength and Stiffness”**

O. Avci, Virginia Tech, Blacksburg, VA, USA; and J. Mattingly, Nicholas J. Bouras, Summit, NJ, USA, and L.D. Luttrell, West Virginia University, Morgantown, WV, USA, and W.S. Easterling, Virginia Tech, Blacksburg, VA, USA

**1:00 p.m.**

**Technical Session No. 9  
Connections**

**Chairpersons:**

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

**“Local Connection Failures in Composite Sandwich Panel Systems”**

A. Smith, B. Kershaw, M. Mahendran and Somadasa Wanniarachchi, Queensland University of Technology, Brisbane, Australia

**“Self-Drilling Knee-Joints for Cold-Formed Steel Portal Frames in Cyclonic Regions”**

J. Carr, A. Mansour, and J. Mills, University of South Australia, Adelaide, Australia

**“Performance of Ridge and Eaves Joints in Cold-Formed Steel Portal Frames”**

D. Dubina, A. Stratan, A. Cuitina, and L. Fulop, Politehnica University of Timisoara, Timisoara, Romania; and Zsolt Nagy, Lindab Ltd., Bucharest, Romania

**“Design Criteria for Seam and Sheeting-to-Framing Connections of Cold-Formed Steel Shear Panels”**

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

**“The Structural Behavior of Connections of Cold-Formed Steel Portal Frames”**

Y.B. Kwon, Yeungnam University, Gyongsan, Korea; and H.S. Chung, Yehwa Construction Co., Ltd., Seoul, Korea; G.D. Kim, Research Institute of Industrial Science and Technology, Hwasung, Korea

**“Structural Behaviour of High Strength Cold-Formed Steel Z Purlins with Overlaps”**

K.F. Chung and H.C. Ho, Hong Kong Polytechnic University, Hong Kong, China

**“Compression Behavior of Thin Gusset Plates”**

D.G. Lutz and R.A. LaBoube, University of Missouri-Rolla, Rolla, MO, USA

**3:00 p.m.**

**Closing Remarks**

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

**3:10 p.m.**

**Adjourn**