Tuesday, November 6, 2018

6:00 – 9:00 p.m. Registration

Wednesday, November 7, 2018

7:00 – 8:00 a.m. Registration

8:00 a.m. Opening Remarks

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

Chairpersons:
B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA
C.H. Pham, University of Sydney, Sydney, Australia

Using Generalized Beam Theory to Assess the Behavior of Curved Thin-Walled Members
N. Peres, R. Gonçalves, Universidade NOVA de Lisboa, Caparica, Portugal, and D. Camotim, Universidade de Lisboa, Lisbon, Portugal

Proposal to Improve the DSM Design of Cold-Formed Steel Angle Columns: Need, Background, Quality Assessment and Illustration
P.B. Dinis and D. Camotim, Universidade de Lisboa, Lisbon, Portugal

Distortional Buckling of Cold-Formed Steel Flanges under Stress Gradient
R.S. Glauz, RSB Software, Lee’s Summit, MO, USA

Comparison of Experimental and Numerical Results for Flexural Capacity of Light-Gage Steel Roof Deck
C.H. Raebel, Milwaukee School of Engineering, Milwaukee, WI, USA and D Gwozdz, CSD Structural Engineers, Milwaukee, WI, USA

9:15 a.m. Break

9:45 a.m. Technical Session No. 2 Flexural Members – Web Crippling and Shear

Chairpersons:
M.W. Seek, Old Dominion University, Norfolk, VA, USA
V.E. Sagan, Metal Building Manufacturers Association, Cleveland, OH, USA

Web Bearing Capacity of Cold-Formed Ferritic Stainless Steel Unlipped Channels with Web perforations Under the End-Two-Flange (ETF) Loading
A.M. Yousefi, J.B.P. Lim and G.C. Clifton, University of Auckland, Auckland, New Zealand
Web Crippling Behaviour of Cold-Formed Ferritic Stainless Steel Unlipped Channels under Interior-One-Flange and End-One-Flange Loadings
A.M. Yousefi, J.B.P. Lim and G.C. Clifton, University of Auckland, Auckland, New Zealand

New Web Crippling Design Rules for Cold-formed Steel Beams
L. Sundararajah, M. Mahendran and P. Keerthan, Queensland University of Technology, Brisbane, Australia

Design of Rivet Fastened Rectangular Hollow Flange Channel Beams Subject to Local Buckling
R. Siahaan, P. Keerthan and M. Mahendran, Queensland University of Technology, Brisbane, Australia

Web Crippling of Cold-Formed High Strength Steel Square and Rectangular Hollow Sections under Two-Flange Loading Conditions
H.T. Li and B. Young, University of Hong Kong, Hong Kong, China

Cold-Formed Ferritic Stainless Steel Tubular Sections under End-One-Flange Loading Condition
H.T. Li and B. Young, University of Hong Kong, Hong Kong, China

Experimental and Analytical Studies of Cold-Formed Steel Sections with Edge-Stiffened Circular Holes Subjected to Web Crippling
A. Uzzaman, University of Strathclyde, Glasgow, UK, J.B.P Lim, University of Auckland, Auckland, New Zealand, D. Nash, University of Strathclyde, Glasgow, UK, A.M. Yousefi, University of Auckland, Auckland, New Zealand and B. Young, University of China, Hong Kong, China

Parametric Studies and Design Recommendations of Cold-Formed Steel Sections with Edge-Stiffened Circular Holes Subjected to Web Crippling
A. Uzzaman, University of Strathclyde, Glasgow, UK, J.B.P Lim, University of Auckland, New Zealand, D. Nash, University of Strathclyde, Glasgow, UK, A.M. Yousefi, University of Auckland, Auckland, New Zealand and B. Young, University of China, Hong Kong, China

New Proposals for the Direct Strength Method of Design of Cold-formed Steel Beams with Holes in Shear
S.H. Pham, C.H. Pham, University of Sydney, Sydney, Australia, C.A. Rogers, McGill University, Montreal, Canada and G.J. Hancock, University of Sydney, Sydney, Australia

11:45 p.m. Lunch

12:30 p.m. Technical Session No. 3: Flexural Members

Chairpersons:
R.S. Glauz, RSG Software, Inc., Lee’s Summit, MO, USA
J.W. Larson, American Iron and Steel Institute, Washington, DC, USA
A Preliminary Study on Stainless Steel Hollow Flange Beams Featuring Lateral-Distortional Buckling
S. Niu, Harbin Institute of Technology, Harbin, PR China, Z. Zhang, Johns Hopkins University, Baltimore, MD, USA and F. Fan, Harbin University of Technology, Harbin, PR China

Study on Distortional Buckling of Cold-formed Stainless Steel Beams
S. Niu, Harbin Institute of Technology, Harbin, PR China, Z. Zhang, Johns Hopkins University, Baltimore, MD, USA and F. Fan, Harbin University of Technology, Harbin, PR China

Flexural Strength of Continuous-Span Z-Purlins with Paired Torsion Braces using the Direct Strength Method
M. Seek, Old Dominion University, Norfolk, VA, USA

1:15 p.m. Technical Session No. 4: Compression Members

Chairpersons:
H.B. Blum, University Wisconsin-Madison, Madison, WI, USA
C.A. Rogers, McGill University, Montreal, Canada

On the Effect of Web Stiffening of Cold-Formed Steel Thin-Walled Lipped Sigma Sections in Compression Members
R. Cheraghi, Khajeh Nasir Toosi University of Technology, Tehran Iran and H. Mohammadzadeh, Islamic Asad University-South Tehran Branch, Tehran, Iran

Bracing Design for Torsional Buckling of Cold-Formed Steel Wall Stud Columns
C.D. Moen, NBM Technologies, Blacksburg, VA, USA

Experimental Investigation into the Behaviour of Back-to-Back Gapped Built-up Cold-Formed Steel Channel Sections under Compression
K. Roy, University of Auckland, Auckland, New Zealand, T.C.H. Ting, H.H. Lau, Curtin University of Malaysia, Sarawak, Malaysia and J.B.P. Lim, University of Auckland, Auckland, New Zealand

2:00 p.m. Break

2:30 p.m. Technical Session No. 5: Connections

Chairpersons:
D. Camotim, Universidade de Lisboa, Lisbon, Portugal
M. Mahendran, Queensland University of Technology, Brisbane, Australia

Cyclic Performance and Behavior Characterization of Steel Deck Sidelap and Framing Connections
S. Torabian, D. Fratamico, K. Shannahan and B.W. Schafer, NBM Technologies, Inc., Blacksburg, VA, USA
Screw and Pin Fastener Tests for Cold-Formed Steel
B.S. Wilson, F.R. Rutz and J.R. Harris, J.R. Harris & Company, Denver, CO, USA

Optimum Slot Weld Width for Cold-Formed Steel
E.A. Martin, University of Colorado, Denver, CO, USA and F.R. Rutz, J.R. Harris & Company, Denver, CO, USA

Behavior of Beam to Column Cold Formed Section Connections Subjected to Bending Moments
M.T. Hanna, M.M. El-Saadawy, G.M. El-Mahdy and E.H.A H. Aly, Housing and Building National Research Center, Egypt

Investigation on Shear Capacity for Screw Connections of Cold-Formed Steel Framed Shear Walls with Steel Sheathing
R. Feng, Y. Ma and B. Zhu, Southeast University, Nanjing, China

Bearing Strength of Untightened Double-Shear Bolted Connections in Cold-Formed Steel Construction
R.A. Bhuiyan, L.H. Teh and A. Ahmed, University of Wollongong, Australia

Cold-Formed Steel Bolted Moment-Resisting Connections with Friction-Slip Mechanism for Seismic Areas
M. Shahini, A. Bagheri, P. Davidson and R. Mirghaderi, University of Aberdeen, Aberdeen, Scotland, UK

4:15 p.m. Technical Session No. 6: Technology Transfer

Chairpersons:
W.W. Yu, Missouri University of Science and Technology, Rolla, MO, USA
H. Chen, American Iron and Steel Institute, Washington, DC, USA

SDI Steel Deck on Cold-Formed Steel Framing Design Manual
T. Sputo, Steel Deck Institute, Gainesville, FL, USA

The 2017 AISI Cold-Formed Steel Design Manual
J. Buckholt, Computerized Structural Design, Milwaukee, WI, USA and H. Chen, American Iron and Steel Institute, Washington, DC, USA

Planning the Future of North American Cold-Formed Steel Design Standards
B. Schafer, Johns Hopkins University, Baltimore, MD, USA, J. Larson and H. Chen, American Iron and Steel Institute, Washington, DC, USA

5:00 p.m. Wei-Wen Yu Outstanding Student Paper and Student Scholar Awards

5:15 p.m. Adjourn
6:00 p.m. Reception

Thursday, November 8, 2018

8:00 a.m. Technical Session No. 7: Rack Structures

Chairpersons:
J. Crews, Unarco Material Handling, Springfield, TN, USA
C. Yu, University of North Texas, Denton, TX, USA

Transverse Shear Stiffness of Bolted Cold-Formed Steel Storage Rack Upright Frames with Channel Bracing Members
N. Talebian, B.P. Gilbert and H. Karampour, Griffith University, Gold Coast, Australia

Biaxial Bending of Cold-Formed Steel Storage Rack Uprights – Part I: Parametric Studies and Response
N. Talebian, B.P. Gilbert, Griffith University, Gold Coast, Australia, C.H. Pham, University of Sydney, Sydney, Australia and H. Karampour, Griffith University, Gold Coast, Australia

Biaxial Bending of Cold-Formed Steel Storage Rack Uprights - Part II: Design Methods
N. Talebian, B.P. Gilbert, Griffith University, Gold Coast, Australia, C.H. Pham, University of Sydney, Sydney, Australia and H. Karampour, Griffith University, Gold Coast, Australia

8:45 a.m. Technical Session No. 8: Behavior of Systems and Frames

Chairpersons:
W. L. Shoemaker, Metal Building Manufacturers Association, Cleveland, OH, USA
C.D. Moen, NBM Technologies, Blacksburg, VA, USA

Behavior of Cold-Formed Steel Metal Industrial Buildings
A.M. Early, University of Massachusetts Amherst, Amherst, MA, USA, M.E. Momhammadi, R.L. Wood, University of Nebraska-Lincoln, Lincoln, NE, USA and K.D. Peterman, University of Massachusetts Amherst, Amherst, MA, USA

Sustainability of Modular Lightweight Steel Building from Design to Deconstruction
O. Iuorio, University of Leeds, Leeds, UK, L. Napolano, L. Fiorino and R. Landolfo, University of Naples “Federico II,” Naples, Italy

Finite-Element Analysis of The Eaves Joint of Cold-Formed Steel Portal Frames having Single Channel-Sections
P. Pouladi, University of Auckland, Auckland, New Zealand, J. Ronaldson, SteelX, Queensland, Australia, G.C. Clifton, J.M. Ingham, University of Auckland, Auckland, New Zealand, A.M. Wrzesien, University of the West of Scotland, Scotland, UK, P. Milewski, Extramile, Hastings, New Zealand and J.B.P Lim, University of Auckland, Auckland, New Zealand
Experimental Study of Apex Connection Stiffness and Strength of Cold-Formed Steel Double Channel Portal Frames
J. Peng, J. Bendit and H.B. Blum, University of Sydney, Sydney, Australia

9:45 a.m. Break

10:15 a.m. Technical Session No. 9: Shear Walls

Chairpersons:
D. Allen, Super Stud Building Products, Edison, NJ, USA
P. Dalia, 5400 Engineering, Clermont, FL, USA

Shear Resistance Mechanisms on Steel Sheet Shear Walls with Burring Holes and Cross-Rails
Y. Kawai, Nippon Steel & Sumitomo Metal Company, Japan, K. Fujihashi, NS Hi-Parts Corp., Japan, S. Tohnai, Nippon Steel & Sumitomo Metal Company, Japan, A. Sato and T. Ono, Nagoya Institute of Technology, Japan

Influence of Fire on the Shear Capacity of Cold-Formed Steel Framed Shear Walls
M. S. Hoehler, National Institute of Standards and Technology, Gaithersburg, MD, USA and B. Andres, Danish Institute of Fire and Security Technology, Denmark

Cold-Formed Steel Framed Shear Wall Database
D. Ayhan, S. Baer, Z. Zhang, Johns Hopkins University, Baltimore, MD, USA, C.A. Rogers, McGill University, Montreal, Canada and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

Seismic Behavior of Cold-Formed Steel Shear Walls during Full-Scale Building Shake Table Tests
X. Wang, T.C. Hutchinson, and G. Hegemier, University of California, La Jolla, CA, USA

Finite Element Modeling and Validation of Steel Sheathed Cold-formed Steel Framed Shear Walls
A. Singh and T.C. Hutchinson, University of California, La Jolla, CA, USA

Performance of Cold-Formed Steel Shear Walls with Frame Blocking and Double-Sheathing
R. Rizk, V. Briere, V. Santos and C.A. Rogers, McGill University, Montreal, Canada

11:45 a.m. Lunch

12:30 p.m. Technical Session No. 10: Roof and Wall Systems

Chairpersons:
C.H. Raebel, Milwaukee School of Engineering, Milwaukee, WI, USA
K.D. Peterman, University of Massachusetts Amherst, Amherst, MA, USA

The Design and Development of Lightweight Composite Panels for Rigid Wall Structures
J.J. Artman and C. Yu, University of North Texas, Denton, TX, USA

Experimental Study on Uplift Capacity of Purlins Considering Restraints from Standing Seam Roof Systems
W. Luan and Y. Li, Tongji University, Shanghai, China

Localised Screw Connection Failures in Cold-formed Steel Roofing Systems
M. Sivapathasundaram and M. Mahendran, Queensland University of Technology, Brisbane, Australia

Low Fatigue Response of Crest-Fixed Cold-Formed Steel Drape Curved Roof Claddings
K. Roy, J.B.P. Lim, A.M. Yousefi, G.C. Clifton, University of Auckland, Auckland, New Zealand and M. Mahendran, Queensland University of Technology, Brisbane, Australia

A Finite Element Study of Corrugated Steel Deck Subjected to Concentrated Loads
V.V. Degtyarev, New Millennium Building Systems, LLC, Columbia, SC, USA

1:45 p.m. Technical Session No. 11: Diaphragm Behavior

Chairpersons:
T. Sputo, Sputo and Lammert Engineering, Gainesville, FL, USA
R.B. Haws, Nucor, Denton, TX, USA

Stressed Skin Design of Steel Sheeting Panels – Part 1: Shear Resistance and Flexibility of Screw Lapped Joints
A.M. Wrzesien, University of West Scotland, Paisley, UK, J.B.P. Lim, University of Auckland, Auckland, NZ, I.A. MacLeod, University of Strathclyde, Glasgow, UK and R.M. Lawson, University of Surrey, Guildford, UK

Stressed Skin Design of Steel Sheeting Panels – Part 2: Shear Panels with Sheeting Fixed on All 4 Sides
A.M. Wrzesien, University of West Scotland, Paisley, UK, J.B.P. Lim, University of Auckland, Auckland, NZ, I.A. MacLeod, University of Strathclyde, Glasgow, UK and R.M. Lawson, University of Surrey, Guildford, UK

Computational Modeling of Joist-to-Ledger Connections in Cold-Formed Steel Diaphragms
H. Castaneda and K.D. Peterman, University of Massachusetts Amherst, Amherst, MA, USA

Effect of Connection Details on the Cyclic Behavior of Nestable Screw Sidelaps
S. Torabian, H. Folk, and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA
Sidelap and Structural Fastener Tests for Steel Deck Diaphragms
Y. Shi, Virginia Tech, Blacksburg, VA, USA, S. Torabian, B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA, W.S. Easterling, Virginia Tech, Blacksburg, VA, USA and M.R. Eatherton, Johns Hopkins University, Baltimore, MD, USA

2:45 p.m. Break

3:00 p.m. Technical Session No. 12: Light-Steel Framing

Chairpersons:
W.L. Babich, Alpine TrusSteel, Orlando, FL, USA
P. Ford, Matsen Ford Design Associate, Inc, Waukesha, WI, USA

Tensile Strength and Serviceability of Cold-Formed Steel Clip Angles
W. Zhang, Tongji University, Shanghai, China, Z. Yan, University of North Texas, Denton, TX, USA, M. Mahdavian, Verco Decking, Sunnyvale, CA, USA, M. Yousof, Future Pipe Industries, Houston, TX, USA and C. Yu, University of North Texas, Denton, TX, USA

Strength of Cold-Formed Steel Clip Angle in Combined Bending and Shear Loading
C. Yu, Z. Yan, University of North Texas, Denton, TX, USA and W. Zhang, Tongji University, Shanghai, China

Critical Design Criteria for Standard, Truncated, and Parallel Chords Cold-Formed Steel Trusses
M. van Thienen, J. Dimyadi, J.B. P. Lim and G.C. Clifton, University of Auckland, Auckland, New Zealand

Fire Resistance of Cavity Insulated Light Gauge Steel Framed Walls
A. D. Ariyanayagam and M. Mahendran, Queensland University of Technology, Brisbane, Australia

Shake Table Testing for Seismic Response Evaluation of Cold-Formed Steel-Framed Nonstructural Architectural Components

Numerical Simulation of the Thermal and Mechanical Behavior of Cold-Formed Steel Composite Floor under Fire Conditions
J. Peng, W. Chen, J. Ye, China University of Mining and Technology, Xuzhou, China and Z. Wang, Southeast University, Nanjing, China

Influence of Gypsum Panels on the Response of Cold-Formed Steel Framed Strap-Braced Walls
S. Lu and C.A. Rogers, McGill University, Montreal, Canada
Human-Structure Interaction in Cold-Formed Steel Floor Systems: An Analytical Perspective
S. Zhang and L. Xu, University of Waterloo, Waterloo, Canada

5:00 p.m. Closing Remarks and Adjournment