

Nordic Steel

Construction Conference

September 2-4, 2009
Malmö, Sweden

Programme



Nordic Steel Construction Conference

Conference Schedule:

Wednesday September 2 - Carolinahallen

| | |
|-------------|-------------------------------------------------|
| 09:00–10:30 | Registration |
| 10:30–10:40 | Welcome and opening |
| 10:40–12:00 | Key Note Speakers |
| 12:00–13:15 | Lunch |
| 13:15–18:15 | Session 1: Bridges |
| 13:15–14:45 | Session 1a: Bridges |
| 14:45–15:15 | Coffee |
| 15:15–16:30 | Session 1b: Bridges |
| 16:30–16:45 | Coffee |
| 16:45–18:15 | Session 1c: Bridges |
| 19:30 | Welcome Reception (Malmö City Hall, Stortorget) |

Thursday September 3 - Carolinahallen

| | |
|-------------|---------------------------------------------------------------|
| 09:00–12:15 | Session 2: Fire Engineering |
| 09:00–10:30 | Session 2a: Fire |
| 10:30–11:00 | Coffee |
| 11:00–12:15 | Session 2b: Fire |
| 12:15–13:30 | Lunch |
| 13:30–17:15 | Session 5: Connections |
| 13:30–15:00 | Session 5a: Connections |
| 15:00–15:30 | Coffee |
| 15:30–17:15 | Session 5b: Connections |
| 18:30 | Transportation to Lund by bus (departure outside S:t Gertrud) |
| 19:00 | Conference Dinner at AF Borgen, Lund |

Thursday September 3 - Salmson

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|---------------------------------------|
| Session 3: Composite Structures |
| Coffee |
| Session 4: Stainless Steel Structures |
| Lunch |
| Session 6: Building Structures |
| Session 6a: Building Structures |
| Coffee |
| Session 6b: Building Structures |

Friday September 4 - Carolinahallen

| | |
|-------------|------------------------------------------------------------|
| 09:00–12:10 | Session 7: High Strength Steel and Cold Formed Structures |
| 09:00–10:15 | Session 7a: High Strength Steel and Cold Formed Structures |
| 10:15–10:45 | Coffee |
| 10:45–11:45 | Session 7b: High Strength Steel and Cold Formed Structures |
| 11:45–12:00 | Closing session |
| 12:00–13:30 | Lunch |
| 14:00–16:00 | Technical Tour |



September 2-4, 2009 - Malmö, Sweden

Programme - Wednesday September 2

09:00 – 10:30

Registration

Venue: Carolinahallen

Welcome and opening

Professor Ove Lagerqvist, LTU & Mr Björn Uppfeldt, SBI

10:30 – 10:40

10:40 – 12:00

Key Note Speakers

Chairman: *Prof Bernt Johansson*

Analysis-based design provisions for steel storage racks

Prof Kim Rasmussen, University of Sydney

Stainless Steel – A Sustainable Solution

Mr Anders Finnäs, Outokumpu

11:00 – 11:20

11:20 – 11:40

High Strength Steel – opportunities and challenges

Dr. Eva Pétursson, SSAB Tunnlåt

11:40 – 12:00

Environmental opportunities in Steel Construction

Mr Johan Löw, Ruukki Construction

12:00 – 13:15

Lunch

13:15 – 18:15

Session 1: Bridges

13:15 – 14:45

Session 1a: Bridges - Chairman: *Prof Niels J Gimsing*

13:15 – 13:30

Buckling tests on plastic models in verifying the effectiveness of non-continuous stiffening of steel panels

De Pauw, Bart, Ghent University

13:30 – 13:45

Innovative rules in Eurocode 3, Part 1-10 for the choice of material toughness

Kuhn, Bertram, Verheyen Ingenieure GmbH & Co. KG

13:45 – 14:00

Ultimate capacity of eccentrically patch loaded steel I-girders

Scepanovic, Biljana, University of Montenegro

14:00 – 14:15

Modelling stiffener distortion in orthotropic bridge decks with FEM using superelements

Delesie, Corneel, Ghent University

14:15 – 14:30

Numerical investigation on moment-shear interaction of longitudinally stiffened girders

Sinur, Franc, Faculty of Civil and Geodetic Engineering, University of Slovenia

14:30 – 14:45

The effect of using beam buckling curves on the stability of steel arch bridges

De Backer, Hans, Outtier, Amelie, Ghent University

14:45 – 15:15

Coffee

15:15 – 16:30

Session 1b: Bridges - Chairman: *Prof Ulrike Kuhlmann*

15:15 – 15:30

Numerical and experimental assessment of thermal stresses in steel box girders

De Backer, Hans, Outtier, Amelie., Ghent University

15:30 – 15:45

Liquid -V- Dampers

Kuss, Stefan, Stahlbau Haslinger GesmbH

15:45 – 16:00

Influence of ballast superstructure on the dynamics of slender steel railway bridges

Mähr, Tobias, Waagner-Biro AG

16:00 – 16:15

Halfdan Bridge

Riis Petersen Christian, Thomsen Anders, ISC Consulting Engineers A/S

16:15 – 16:30

Resistance of hybrid steel plate girders subjected to patch loading

Chacon, Rolando, Technical University of Catalonia

16:30 - 16:45

Breake

16:45 – 18:15

Session 1c: Bridges - Chairman: *Prof Pentti Mäkeläinen*

16:45 – 17:00

Orthotropic deck renovation of the movable bridge Scharsterrijn

Teixeira de Freitas, Sofia, Delft University of Technology

17:00 – 17:15

Fatigue prone details in steel bridges

Kliger, Robert, Al-Emrani, Mohammad, Chalmers University of Technology

17:15 – 17:30

Material properties of old steel bridges

Larsson, Tobias, Lagerqvist, Ove, Vectura AB & Luleå University of Technology

17:30 – 17:45

Design, fabrication and construction of railway bridge over Södertälje canal

Thulstrup, B Michael, MT Hojgaard A/S

17:45 – 18:00

A new challenge for strait crossings: The immersed inverted cable supported bridge

Faggiano, Beatrice, University of Naples "Frederico II"

18:00 – 18:15

Sustainable bridge constructions, elegant arches–filigree structures–cost effective design - *Remde, Christian., V&M Deutschland GmbH*

19:30

Welcome Reception at Malmö City Hall (Malmö City Hall, Stortorget)

Nordic Steel Construction Conference

Programme - Thursday September 3

Venue: Carolinahallen

09:00 – 12:15 **Session 2: Fire Engineering**

09:00 – 10:30

09:00 – 09:15

Session 2a: Fire - Chairman: *Mr Jyri Outinen*

Performance based design for the fire situation, theory and practice

Schleich, Jean-Baptiste, E.A.S.E

09:15 – 09:30

Fire design of composite columns in bending and compression

Wagenknecht, Gerd, Fachhochschule Giessen-Friedberg

09:30 – 09:45

Fire resistance of a cold formed steel roof beam

Laim, Luis, FCTUC

09:45 – 10:00

Section factor and steel columns embedded in walls

Laim, Luis, FCTUC

10:00 – 10:15

Numerical simulation of steel and composite steel and concrete columns in fire

Laim, Luis, FCTUC

10:15 - 10:30

Development of a light-weight composite lattice joist for fire resistance

Burgess Ian, University of Sheffield

10:30 – 11:00

Coffee

11:00 – 12:15

11:00 – 11:15

Session 2b: Fire - Chairman: *Prof J-B Schleich*

Behaviour of single-shear screw connections in steel sheeting in fire

Outinen, Jyri, Lu, Wei, Rautaruukki Corporation & Helsinki University of Technology

11:15 – 11:30

Constitutive equations of structural steel S460 at high temperatures

Schneider, Regine, Technische Universität Darmstadt

11:30 – 11:45

Fire protection of steel structures using sprinkler systems

Outinen, Jyri, Rautaruukki Corporation

11:45 – 12:00

Combining structural design and fire simulation of steel structures with product

modelling - *Outinen, Jyri, Rautaruukki Corporation*

12:15 – 13:30

Lunch

13:30 – 17:15 **Session 5: Connections**

13:30 – 15:00

13:30 – 13:45

Session 5a: Connections - Chairman: *Prof Robert Kliger*

Partial-strength and highly ductile steel and composite joints as robustness measure

Kuhlmann, Ulrike, University of Stuttgart

13:45 – 14:00

Experimental behaviour of I-beam – SHS column steel joints with Hollo-bolts

Mesquita, B Afonso, University of Coimbra

14:00 – 14:15

Bearing strength of stainless steel bolted plates in tension

Kiyamaz, Guven, Istanbul Kultur University

14:15 – 14:30

Cone-shaped socket connections for cylindrical members

Kuwamura, Hitoshi, The University of Tokyo

14:30 – 14:45

Stress concentration factors for the fatigue design of tubular flange connections

Couchaux, Maël, CTICM

15:00 – 15:30

Coffee

15:30 – 17:15

15:30 – 15:45

Session 5b: Connections - Chairman: *Prof Torsten Höglund*

Fixings of sandwich panels in building applications

Misiek, Thomas, University of Karlsruhe

15:45 – 16:00

Self loosening of prestressed bolts

Friede, Roland, Technische Universität Darmstadt

16:00 – 16:15

Strain distribution in adhesive joints consist tapered laminates-experimental investi

gation - *Haghani, Reza, Chalmers University of Technology*

16:15 – 16:30

Effect of contact on the elastic behaviour of bolted connections

Couchaux, Maël, CTICM

16:30 - 16:45

Flange connection vs. friction connection in towers for wind turbines

Heistermann, Christine, Luleå University of Technology

September 2-4, 2009 - Malmö, Sweden

Programme - Thursday September 3

Venue: Salmson

09:00 – 10:30

09:00 – 09:15

Session 3: Composite Structures - Chairman: *Mr Paavo Hassinen*
The behaviour of steel-concrete composite beams under repeated loading

Ustundag, Cenk, Istanbul Technical University

09:15 – 09:30

Experimental study of ultra shallow floor beams with perforated steel sections

Tsavaraidis, Konstantinos-Daniel, City University London

09:30 – 09:45

Design concept for high strength composite members subjected to exceptional loads

Gündel, Max, RWTH Aachen University

09:45 - 10:00

Damage modelling of adhesive joint in composite reinforced metallic beams

Haghani, Reza, Chalmers University of Technology

10:00 - 10:15

Finite element modelling of semi-rigid composite joint in a slim floor frame

Zeng J., Mäkeläinen P., Helsinki University of Technology

10:30 – 11:00

Coffee

11:00 – 12:15

11:00 – 11:15

Session 4: Stainless Steel Structures - Chairman: *Prof Kim Rasmussen*
Design, construction and installation of the dimoun arm structures for the ALICE detector - *Perini, Diego*, CERN

11:15 – 11:30

Stonecutters bridge, Hong Kong: Design and construction of the composite upper tower in stainless steel - *Vejrur, Tina*, COWI A/S

11:30 – 11:45

Behaviour of slender square concrete-filled stainless steel columns subjected to axial load - *Tao, Zhong*, University of Western Sydney

12:15 – 13:30

Lunch

13:30 – 17:00

Session 6: Building Structures

13:30 – 15:00

13:30 – 13:45

Session 6a: Building Structures - Chairman: *Mr Kjetil Myhre*
Seismic design as basis for resistance to other exceptional loads

Hoffmeister, Benno, RWTH Aachen University

13:45 – 14:00

On the response of steel lattice telecommunication masts under environmental actions and seismic loading - *Efthymiou, Evangelos*, Institute of Metal Structures, Department Civil

14:00 – 14:15

Stability of I-shaped members with haunches under bending - Design aids for the equivalent column method - *Strohmann, Isabel*, Technische Universität Dortmund

14:15 – 14:30

Stresses of bracings due to lateral torsional buckling of beams

Kindmann, Rolf, Vette, Jan, Institute for Steel and Composite Structures

14:30 – 14:45

Design and construction of steel diagrid structures

Moon, Kyong Sun, Yale University

14:45 – 15:00

Construction of a seven bay steel building with hollow cross-section lattice girders

Kindmann, Rolf, Kraus, Matthias, Institute for Steel and Composite Structures

15:00 – 15:30

Coffee

15:30 – 17:00

15:30 – 15:45

Session 6b: Building Structures - Chairman: *Dr Benno Hoffmeister*

Residual stresses in cold bent HE 100A steel arches

Spoorenberg, Roel, Eindhoven University of Technology

15:45 – 16:00

Restraint of purlins for various roof systems

Vraný, Tomas, CTU in Prague

16:00 – 16:15

Enlargement of the component method into 3D

Heinisuo, Markku, Tampere University of Technology

16:15 – 16:30

Effect of post yielding stiffness of braces on soft story mechanism for two story braced frames with restraint braces - *Kimura, Yoshihiro*, Nagasaki University

16:30 – 16:45

Reliability of steel flexural members according to EC in serviceability limit state

Honfi, Daniel, Mårtensson, Annika, Lund University

16:45 – 17:00

St. Venants torsion constant of hot rolled steel profiles and position of the shear center - *Kraus, Matthias, Kindmann, Rolf*, Institute for Steel and Composite Structures

18:30

Transportation to Lund by bus (departure outside S:t Gertrud)

19:00

Conference Dinner at AF Borgen, Lund

Nordic Steel Construction Conference

Programme - Friday September 4

Venue: Carolinahallen

09:00 – 12:10 **Session 7: High Strength Steel and Cold Formed Structures**

09:00 – 10:15 **Session 7a: High Strength and Cold Formed Structures**

Chairman: *Dr Eva Petursson*

09:00 – 09:15 **Investigations on longitudinal fillet welded lap joints of HSS**

Rasche, Christina, University of Stuttgart

09:15 – 09:30 **Influence of high strength steel on behaviour of steel concrete composite girder models**

Melhem, Abdul Q, Univeristy of Aleppo

09:30 – 09:45 **Fatigue strength of hybrid VHSS-cast steel welded plates**

Pijpers, Richard, Delft University of Technology

09:45 – 10:00 **Load-carrying behaviour of connectors under shear, tension and compression in ultra high performance concrete** - *Gallwoszus, Joerg*, Univeristy of Aachen

10:15 – 10:45

Coffee

10:45 – 11:45 **Session 7b: High Strength Steel and Cold Formed Structures**

Chairman: *Prof em Bernt Johansson*

10:45 – 11:00 **High strength steels in construction: Application and processing**

Willms, Ronny, AG der Dillinger Hüttenwerke

11:00 – 11:15 **Application of high strength steel in super long span modern suspension bridge design**

Jensen, Lars, COWI A/S

11:15 – 11:30 **Human induced vibrations of lightweight steel floor systems**

Rack, Werner, Technische Universität Darmstadt

11:30 – 11:45 **Ultimate and serviceability limit state optimization of cold-formed steel hat-shaped beams** - *Honfi, Daniel*, Lund University

11:45 – 12:00 **Closing session**

12:00 – 13:30

Lunch

14:00 – 16:00 **Technical Tour**

Poster Session - Venue: Carolinahallen

Conceptual design of branching nodes of bridges with central arches

De Pauw, Bart, Ghent University

Optimising plate girder design

Abspoel, Roland, Delft University of Technology

Advanced seismic design of a steel fitness centre including a dissipative bracing system

Sorace, Stefano, University of Udine

Reliability analysis of steel structures with imperfections

Omishore, Abayomi, Brno University of Technology

Experimental verification of actual behaviour of header plate connections

Pilgr, Milan, Brno University of Technology

Imperfections in steel plated structures – should we straighten their plate elements?

Omishore, Abayomi, Brno University of Technology

Intelligent design of industrial steel buildings - a BIM approach

van der Weide, Jules, Scia Group NV

Comparison of steel bridge coatings

Harju, Tomi, Rautaruukki Oyj

Temperature distribution of intumescent coated steel at elevated temperature

Krishnamoorthy, Renga, The University of Manchester

Ship loader, Mongstad

Riis Petersen, Christian, ISC Consulting Engineers A/S

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