

Program

Advanced Materials for Construction of Bridges, Buildings and Other Structures-IV

August 14-19, 2005

Maui, Hawaii

Conference Chair

Vasant Mistry

Federal Highway Administration, USA

Conference Co-Chairs

Ian Friedland

Federal Highway Administration, USA

Atorod Azizinamini

University of Nebraska-Lincoln, USA

Edward Wasserman

Tennessee Department of Transportation, USA

Fumio Watanabe

Kyoto University, Japan

Holger Svensson

Leonardt, Andrae, and Partner GmbH, Germany

ECI

Engineering Conferences International

Six MetroTech Center

Brooklyn, NY 11201

T: 1-718-260-3743 - F: 1-718-260-3754

E: info@eci.poly.edu - www.engconfintl.org

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+1 718 260 3754
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Sunday, August 14, 2005

17:00 – 18:30 Conference Registration

18:30 – 20:00 Dinner

20:00 – Reception

Important Notes

- Please observe “No Smoking” at ECI technical sessions, meals and social hours.
- Speakers should allow time at the end of their presentation for questions and discussion.
- During technical sessions please keep cell phones on vibrate or shut off. Take any telephone conversations out of the session room.

Monday, August 15, 2005

- 07:00 – 08:00 Breakfast
Late Registration
- Session Chairs: *Atorod Azizinamini*, University of Nebraska, USA
Shri Bhide, Portland Cement Association, USA
- 08:00 – 08:20 *Vasant Mistry*, Conference Chair, U.S. Federal Highway Administration
Conference Welcome, Introductions, and Conference Overview
- Dick Fein*, Engineering Conferences International Technical Liaison
- 08:20 – 09:00 *Raymond McCabe*, HNTB Corporation
Keynote Speech, HIGH PERFORMANCE MATERIALS
- 09:00 – 09:30 *Vasant Mistry*, Federal Highway Administration, USA
HIGH PERFORMANCE STEEL FOR HIGHWAY BRIDGES
- 09:30 – 10:00 Coffee/Tea Break
- 10:00 – 10:30 *Wade S. Bonzon*, P.E., Figg Bridge Inspection, Inc. USA
CONSTRUCTION OF THE MAUMEE RIVER BRIDGE MAIN PYLON USING
10,000 PSI MASS CONCRETE
- 10:30 – 11:00 *Z. John Ma*, University of Alaska Fairbanks, USA
TEST OF FRP DECK PANELS AT VERY LOW TEMPERATURES
- 10:00 – 11:25 *Richard J. Baker*, Pavetech International, USA
SMALL MOVMENT BRIDGE EXPANSION JOINT SYSTEM
- 11:25 – 11:50 *Rossi Pierre*, Laboratoire Central des Ponts et Chaussées, France
A NEW ULTRA-HIGH PERFORMANCE CEMENT COMPOSITE FOR
CONSTRUCTION
- 11:50 – 12:00 Discussion
- 12:00 – 13:00 Lunch
- 13:00 – 13:30 *Radim Cajka*, Faculty of Civil Engineering TU Ostrava, Czech Republic
ADVANCED BITUMINOUS MATERIALS AS SLIDE JOINTS IN SUBSOIL OF
STRUCTURES
- 13:30 – 14:00 *Bill Halsband*, Mammoet USA
COMPLETE BRIDGE SPAN INSTALLATIONS
- 14:00 – 14:30 Distribution of papers for review
- 14:30 – 15:00 Discussion
- 15:00 – 19:00 *Ad hoc sessions*, Networking, Free Time
- 19:00 – 20:30 Dinner
- 20:30 – 21:30 Social Hour

Tuesday, August 16, 2005

- 07:00 – 08:00 Breakfast
- Session Chair: *Mary Lou Ralls*, PE, Ralls Newman, LLC, USA
- 08:00 – 08:30 *Hyeong-Yeol Kim*, Korea Institute of Construction Technology, Korea
FRP INTERNAL REINFORCEMENT FOR CONCRETE STRUCTURES
- 08:30 – 09:00 *Young-Jun You*, Korea Institute of Construction Technology, Korea
MECHANICAL PROPERTIES OF HYBRID FRP RODS WITH VARIOUS
MATERIAL COMPOSITIONS
- 09:00 – 09:30 *Héctor R. Laureano*, P.E., PR Highway and Transportation Authority,
Engineering Services Area, USA
CASE STUDY: USE OF FRP TECHNOLOGY BY THE PRDOT TO
STRENGTHEN BRIDGES 2028/2029 AT PR-52, A MAJOR ACCESS TO THE
SAN JUAN METROPOLITAN AREA
- 09:30 – 10:00 Coffee/Tea Break
- 10:00 – 10:25 *Kenneth S. Harmon*, P.E., Carolina Stalite Company, USA
HIGH PERFORMANCE LIGHTWEIGHT CONCRETE FOR BRIDGE DECKS -
AN ADVANCED MATERIAL
- 10:25 – 10:50 *Hiroyuki Suzuki*, Meisei University, Japan
FIRST APPLICATION OF CARBON FIBER REINFORCED POLYMER STRIPS
TO AN EXISTING STEEL BRIDGE IN JAPAN
- 10:50 – 11:15 *Taro Tonegawa*, Civil Engineering Division, Sumitomo Metal Industries,
Japan
DESIGN OF HYBRID HPS BOX GIRDER WITH CONCRETE SLAB
- 11:15 – 11:40 *Karl E. Barth*, West Virginia University, USA
ULTIMATE STRENGTH AND DUCTILITY OF COMPACT COMPOSITE I-
GIRDERS IN POSITIVE BENDING PERFORMANCE FIELD-TESTING A
MISSOURI TWO-SPAN HPS BRIDGE
- 11:40 – 12:00 Discussion
- 12:00 – 13:00 Lunch
- 13:00 – 13:25 *Khaled M. Mahmoud*, Hardesty & Hanover, USA
HYDROGEN-INDUCED DEGRADATION OF HIGH STRENGTH STEEL
CABLE WIRE
- 13:25 – 13:50 *Mary Lou Ralls*, PE, Ralls Newman, LLC, USA
HIGH PERFORMANCE CONCRETE IN TEXAS BRIDGES
- 13:50 – 14:15 *Walid S. Najjar*, PhD, PE, Chas. H. Sells, Inc., USA
DESIGN OF I-87NB HIGH PERFORMANCE STEEL GIRDER BRIDGE OVER
I-287EB

Tuesday, August 16, 2005 (continued)

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| 14:15 – 14:40 | <i>Leif G. Wathne, FHWA/SaLUT, USA</i>
ADVANCED CONCRETE REQUIRES ADVANCED TESTING DETERMINING
IN-SITU CONCRETE STRENGTH: REDISCOVERING TEMPERATURE-
MATCHED CURING |
| 14:40 – 15:00 | Discussion |
| 15:00 – 19:00 | <i>Ad hoc sessions, Networking, Free Time</i> |
| 19:00 – 20:30 | Dinner |
| 20:30 – 21:30 | Social Hour |

Wednesday, August 17, 2005

- 07:00 – 08:00 Breakfast
- Session Chair: *Raymond McCabe*, HNTB Corporation, USA
- 08:00 – 08:30 *Louis R. B. Tang*, Queensland University of Technology, Australia
A RESIDUAL STRESS MODEL FOR HIGH STRENGTH STEEL GIRDERS
- 08:30 – 09:00 *Abdeljelil Belarbi*, University of Missouri-Rolla, USA
FRP/FRC HYBRID REINFORCEMENT SYSTEM FOR CONCRETE BRIDGE DECKS
- 09:00 – 09:30 *Halil Sezen*, The Ohio State University, USA
CONSTRUCTION OF STRUCTURAL MEMBERS USING INNOVATIVE PREFABRICATED STEEL REINFORCEMENT AND HIGH STRENGTH CONCRETE
- 09:30 – 10:00 Coffee/Tea Break
- 10:00 – 10:30 *Fumio Watanabe*, Department of Architecture and Architectural Engineering, Kyoto University, Japan
SEISMIC STRENGTHENING BY EXTERNAL CABLE-STAYED SYSTEM
- 10:30 – 11:00 *X. Sharon Huo*, Tennessee Technological University, USA
CASE STUDY OF A TENNESSEE HIGH PERFORMANCE CONCRETE BRIDGE
- 11:00 – 11:25 *Susumu Kono*, Kyoto University, Japan
SEISMIC RETROFIT USING PRECAST PRESTRESSED CONCRETE BRACES
- 11:25 – 11:45 *Mamdouh El-Badry*, University of Calgary, Canada
AN INNOVATIVE CORROSION-FREE SYSTEM FOR SHORT- AND MEDIUM-SPAN BRIDGES
- 11:45 – 12:00 Discussion
- 12:00 – 13:00 Lunch
- 13:00 – 13:25 *Mamdouh El-Badry*, The University of Calgary, Canada
EFFECTS OF TEMPERATURE ON THE BEHAVIOR OF BRIDGE DECK SLABS REINFORCED WITH FIBER REINFORCED POLYMERS
- 13:25 – 13:50 *P.B.R. Dissanayake*, University of Peradeniya, Sri Lanka
MANUFACTURED SAND ALTERNATIVE TO TRADITIONAL FINE AGGREGATE
- 13:50 – 14:15 *Camille A. Issa*, Ph.D., P.E., F.ASCE, Lebanese American University, USA
AN EXPERIMENTAL OVERVIEW OF CFRP STRENGTHENING TECHNIQUES
- 14:15 – 14:40 *Hyung-Keun Ryu*, Department of Civil Engineering, Seoul National University, Korea (presented by *P.G. Lee*)
BENDING CAPACITY OF CONTINUOUS COMPOSITE HYBRID BEAMS

Wednesday, August 17, 2005 (continued)

14:40 – 15:00	Discussion
15:00 – 19:00	<i>Ad hoc sessions</i> , Networking, Free Time
19:00 – 20:30	Dinner
20:30 – 21:30	Social Hour

Thursday, August 18, 2005

- 07:00 – 08:00 Breakfast
- Session Chair: *Fumio Watanabe*, Kyoto University, Japan
- 08:00 – 08:30 *Ji Sun Park*, Korea Institute of Construction Technology, Korea
EFFECTS OF RIB GEOMETRY ON THE BOND OF FIBER REINFORCED POLYMER REBAR
- 08:30 – 09:00 *Gintaris Kaklauskas*, Vilnius Gediminas Technical University, Lithuania
LOAD-DEFORMATION BEHAVIOUR OF HIGH STRENGTH CONCRETE BEAMS
- 09:00 – 09:30 *Peter Dusicka*, Portland State University, USA
EVALUATION AND FIELD APPLICATION OF FRP DECK PANELS FOR DRAWBRIDGE DECK REPLACEMENT
- 09:30 – 10:00 Coffee/Tea Break
- 10:00 – 10:30 *Pieter Samyn*, Ghent University - Laboratory Soete, Belgium
INCORPORATION OF CARBON FIBRE REINFORCED UHMWPE AS BEARING MATERIAL IN THE MAESLANT STORM SURGE BARRIER
- 10:30 – 11:00 *Oguzhan Bayrak*, The University of Texas at Austin, USA
PUNCHING SHEAR STRENGTHENING OF DEFICIENT SLAB-COLUMN CONNECTIONS WITH CFRP
- 11:00 – 11:25 *Benjamin A. Graybeal*, PSI, Inc., USA
STRUCTURAL BEHAVIOR OF OPTIMIZED UHPC BRIDGE GIRDERS
- 11:25 – 11:50 *Robert Fish*, PE, SE, HDR Engineering, USA
LAKE NATOMA CROSSING - CASE STUDY OF LIGHTWEIGHT CONCRETE SHORTENING FOR LONG SPAN BOX GIRDER BRIDGES
- 11:50 – 12:00 Discussion
- 12:00 – 13:00 Lunch
- 13:00 – 13:30 *Eric Matsumoto*, California State University, Sacramento, USA
DESIGN OF ADHESIVE ANCHORS FOR SEISMIC REGIONS USING HIGH PERFORMANCE BONDING AGENT
- 13:30 – 14:00 *Michael Chusid*, Chusid Associates, consultant to Davis Colors, USA
COLORED CONCRETE BRIDGES: CONSTRUCTION AND LIFE-CYCLE COST COMPARISON OF INTEGRAL COLORS AND SURFACE-APPLIED COATINGS
- 14:00 – 14:30 *Louis R. B. Tang*, Queensland University of Technology, Australia
INTERACTION EFFECTS ON LOCAL STABILITY OF HIGH STRENGTH STEEL COLUMNS
- 14:30 – 15:00 Discussion

Thursday, August 18, 2005 (continued)

15:00 – 19:00 *Ad hoc sessions*, Networking, Free Time

19:30 – 21:00 Conference Banquet

21:00 – 22:00 Social Hour

Abstracts

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STEEL COLUMNS

Friday, August 19, 2005

Luigi Di Sarno,

University of Naples, Federico II, Department of Structural Analysis and Design, Italy
SEISMIC DESIGN AND RESPONSE OF STAINLESS STEEL FRAMES

Tarif M. Jaber,

ilica Fume Associations, USA
STRUCTURES REPAIR USING HIGH PERFORMANCE CONCRETE