# TABLE OF CONTENTS

## VOLUME 1

### BRIDGES AND TRANSPORTATION

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLEXURAL STRENGTH OF PRESTRESSED REINFORCED CONCRETE PILES USING HIGH-STRENGTH MATERIAL</td>
<td>1</td>
</tr>
<tr>
<td>M. Akiyama, M. Suzuki, R. Abe</td>
<td></td>
</tr>
<tr>
<td>DESIGN &amp; BUILD FOR PALM JUMEIRAH MONORAIL INFRASTRUCTURES IN DUBAI, U.A.E.</td>
<td>15</td>
</tr>
<tr>
<td>H. Omi, S. Ohno, N. Horikoshi</td>
<td></td>
</tr>
<tr>
<td>RECENT CHANGES THAT HAVE IMPROVED THE QUALITY OF POSTTENSIONING IN BRIDGE CONSTRUCTION</td>
<td>25</td>
</tr>
<tr>
<td>Z. Xie</td>
<td></td>
</tr>
<tr>
<td>DOUBLING THE WIDTH OF THE PLATFORM OF THE SAN PEDRO BRIDGE (SPAIN)</td>
<td>34</td>
</tr>
<tr>
<td>J. Torroja, J. Simon-Talero, A. Hernandez</td>
<td></td>
</tr>
<tr>
<td>CRUSELL BRIDGE, CABLE-STAYED IN THE WEST HARBOR OF HELSINKI (FINLAND), STAY SYSTEM ELABORATION IN TERMS OF DESIGN, EXECUTION AND DYNAMIC BEHAVIOR</td>
<td>54</td>
</tr>
<tr>
<td>R. Rucabado, A. Semir, J. Torvinen</td>
<td></td>
</tr>
<tr>
<td>PREDICTION OF SHEAR CARRYING CAPACITY OF SEGMENTAL CONCRETE BEAMS WITH EXTERNAL TENDONS</td>
<td>65</td>
</tr>
<tr>
<td>D. Nguyen, K. Watanabe, J. Niwa</td>
<td></td>
</tr>
<tr>
<td>DEVELOPMENT OF EMBODDABLE MULTIPROBE SENSORS FOR CORROSION MONITORING AND SERVICE LIFE PREDICTION OF REINFORCED CONCRETE STRUCTURES</td>
<td>77</td>
</tr>
<tr>
<td>A. Holst, H. Bude-dermann</td>
<td></td>
</tr>
<tr>
<td>NEW RIVER SUIR BRIDGE, CABLE-STAYED LANDMARK ALONG N25 WATERFORD BYASS (IRELAND), STAY SYSTEM ELABORATION IN TERMS OF DESIGN, EXECUTION AND DYNAMIC BEHAVIOR</td>
<td>88</td>
</tr>
<tr>
<td>J. Richart, A. Ludyaz, R. Rucabado</td>
<td></td>
</tr>
<tr>
<td>DESCENDING MANOEUVRE ON CONCRETE SEMI ARCHES, DEZA HIGH SPEED VIADUCT, AVE GALICIA. SEGMENT: LALÍN (ANZO) – SILLEDA (CARBOEIRO), SPAIN</td>
<td>100</td>
</tr>
<tr>
<td>R. Rucabado, A. Moreno, M. Calvo, P. Taboas</td>
<td></td>
</tr>
<tr>
<td>PRESTRESSING APPLICATIONS ON SITRA BRIDGES, KINGDOM OF BAHRAIN</td>
<td>113</td>
</tr>
<tr>
<td>M. Baur, A. Fauche</td>
<td></td>
</tr>
<tr>
<td>BALANCED LIFT METHOD FOR LIFT BRIDGES</td>
<td>134</td>
</tr>
<tr>
<td>S. Blail, D. Wimmer, J. Kollegger</td>
<td></td>
</tr>
<tr>
<td>DESIGN, FABRICATION, AND TESTING OF A 2ND GENERATION ULTRA-HIGH PERFORMANCE CONCRETE PI-GIRDER</td>
<td>141</td>
</tr>
<tr>
<td>B. Graybeal</td>
<td></td>
</tr>
<tr>
<td>CONSTRUCTION OF THE HOOVER DAM BYPASS ARCH BRIDGE</td>
<td>155</td>
</tr>
<tr>
<td>Y. Takatoku</td>
<td></td>
</tr>
<tr>
<td>EXPERIMENTAL STUDY ON SHEAR TRANSFER CAPACITY OF PERFOBOND STRIP</td>
<td>168</td>
</tr>
<tr>
<td>R. Yamaguchi, R. Shionaga</td>
<td></td>
</tr>
<tr>
<td>DESIGN AND CONSTRUCTION OF THE SAGI-MAI BRIDGE</td>
<td>177</td>
</tr>
<tr>
<td>K. Oue, H. Imai, H. Oshiba, H. Noguchi, Y. Ito</td>
<td></td>
</tr>
<tr>
<td>RESEARCH ON SOLUTIONS TO CONSTRAIN LONGITUDINAL CRACKS ON THE BOTTOM OF PRESTRESSED CONCRETE BRIDGES</td>
<td>184</td>
</tr>
<tr>
<td>X. Wu, Y. Wang</td>
<td></td>
</tr>
<tr>
<td>COMPUTERIZED CONCEPTION AND OPTIMIZATION OF POST-TENSIONING IN CONCRETE BRIDGE ENGINEERING</td>
<td>198</td>
</tr>
<tr>
<td>H. Bulicek, S. Seipelt</td>
<td></td>
</tr>
<tr>
<td>HIGH FREQUENCY FATIGUE TESTING OF STAY CABLES</td>
<td>210</td>
</tr>
<tr>
<td>W. Traeger, J. Kollegger</td>
<td></td>
</tr>
<tr>
<td>FATIGUE TESTING WITH TRANSVERSE DISPLACEMENTS IN STAY CABLE SYSTEMS</td>
<td>221</td>
</tr>
<tr>
<td>G. Rodriguez, C. Olabarrieta</td>
<td></td>
</tr>
<tr>
<td>STUDY OF A BRIDGE WITH A NEW SRTUCTURAL SYSTEM USING ULTRA HIGH STRENGTH FIBER REINFORCED CONCRETE</td>
<td>235</td>
</tr>
<tr>
<td>A. Kasuga, H. Nagamoto, K. Kata, H. Asai</td>
<td></td>
</tr>
<tr>
<td>INDIRECTLY SUPPORTED BRIDGES – RISK OF BRITTLE FAILURE?</td>
<td>246</td>
</tr>
<tr>
<td>K. Thoma, C. Bueseler</td>
<td></td>
</tr>
<tr>
<td>TEXTILE REINFORCED CONCRETE FOR LIGHTWEIGHT SEGMENTED BRIDGES WITH POST-TENSIONING</td>
<td>256</td>
</tr>
<tr>
<td>D. Jesse, F. Jesse</td>
<td></td>
</tr>
<tr>
<td>PARAMETRIC STUDY OF LONG-SPAN PRE-CAMBERED BRIDGE GIRDERS</td>
<td>270</td>
</tr>
<tr>
<td>G. Portela-Gauthier, U. Barajas-Valdes, W. Varela-Ortiz</td>
<td></td>
</tr>
</tbody>
</table>
T. Richli, J. Sinva, C. Chang

D. Bierwagen, B. Moore, B. Keierleber, S. Sritharan, T. Wipf, A. Abu-Hawash

G. Greene Jr., B. Graybeal

S. Perez-Fadon, C. Bajo

S. Bansal, S. Rustagi, J. Kuriak

J. Kucharik

T. Yamaguchi, H. Onishi, H. Sekiguchi, T. Iwaki, Y. Otsuka, Y. Sakakibara

Y. Wu, H. Ganz, M. Buchler

J. Hamasoka, S. Nojima, T. Kamamoto, O. Tachihiha

M. Moravcik, P. Bujnakova

H. Gatto, J. Ivo, T. Kanamoto

M. Poser

N. Velling, R. Lindberg, J. Rantaala

S. Joglekar, D. Kanhere, A. Ralkar

S. Joglekar, D. Kanhere, A. Ralkar

C. Alimchandani, D. Kanhere, S. Sambhus

A. Samuel, S. Joglekar

P. Papanikolas, A. Stathopoulos-Vlamis

P. Papanikolas, A. Stathopoulos-Vlamis, A. Panagis, A. Pecker, S. Infanti

J. Pablo, G. Miguel, H. Pereda, J. Aparicio

P. Papanikolas, A. Stathopoulos-Vlamis

M. Reichel, B. Freytag, L. Sparowitz

V. Morisseau, B. Kroely
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>USING GPR: STUDY OF SPALLING OF PARTIAL-DEPTH PRECAST-PRESTRESSED</td>
<td>1009</td>
</tr>
<tr>
<td>BRIDGE DECK PANEL - INVESTIGATION</td>
<td></td>
</tr>
<tr>
<td>DESIGN OF THE INDIAN RIVER INLET BRIDGE</td>
<td>1326</td>
</tr>
<tr>
<td>RATIONAL SHEAR ANALYSIS FOR MULTI-CELLULAR CONCRETE BOX SECTIONS</td>
<td></td>
</tr>
<tr>
<td>METHOD</td>
<td></td>
</tr>
<tr>
<td>UPGRADE OF GENEVA AIRPORT RUNWAY – « THE TUNNEL DE FERNEY »</td>
<td></td>
</tr>
<tr>
<td>PERFORMANCE BASED INSTRUMENTATION AND MONITORING OF I35W ST.</td>
<td></td>
</tr>
<tr>
<td>ANTHONY FALLS BRIDGE</td>
<td></td>
</tr>
<tr>
<td>RECOMMENDATIONS</td>
<td></td>
</tr>
<tr>
<td>PRECAST COMPOSITE SLAB SPAN SYSTEM (PCSSS): FIELD INVESTIGATION</td>
<td>1255</td>
</tr>
<tr>
<td>USE OF STEEL DIAPHRAGMS IN PRESTRESSED CONCRETE BRIDGES</td>
<td>1266</td>
</tr>
<tr>
<td>EXTRA-DOSSING GIRDER BRIDGES IN INDIAN SUB CONTINENT</td>
<td>1129</td>
</tr>
<tr>
<td>CALIFORNIA PRECAST BRIDGE DESIGN AND CONSTRUCTION IN PAST TEN YEARS</td>
<td>1146</td>
</tr>
<tr>
<td>CONCRETE FILLED STEEL TUBES FOR ANCHORING BARS AND STRANDS – CONCEPT</td>
<td>1188</td>
</tr>
<tr>
<td>AND PROTOPE TESTING</td>
<td></td>
</tr>
<tr>
<td>FATIGUE AND TENSILE TESTS OF A 55 STRANDS SADDLE SYSTEM</td>
<td>1195</td>
</tr>
<tr>
<td>A REVOLUTIONARY DESIGN CONCEPT FOR POST-TENSIONED I-TYPE BRIDGE</td>
<td>1208</td>
</tr>
<tr>
<td>GIRDERERS</td>
<td></td>
</tr>
<tr>
<td>CREEP EFFECTS AND STRESS ADJUSTMENTS IN CABLE-STAYED BRIDGES WITH</td>
<td>1217</td>
</tr>
<tr>
<td>CONCRETE DECK</td>
<td></td>
</tr>
<tr>
<td>EUGENE FREYSSINET – HIS INCREDIBLE JOURNEY TO INVENT AND REVOLUTION</td>
<td>1227</td>
</tr>
<tr>
<td>IZE CONCRETE DECK CONSTRUCTION</td>
<td></td>
</tr>
<tr>
<td>ENGINEERING THE CONSTRUCTION OF THE STONECUTTERS BRIDGE CONCRETE</td>
<td>1255</td>
</tr>
<tr>
<td>BACKSPANS</td>
<td></td>
</tr>
<tr>
<td>USE OF STEEL DIAPHRAGMS IN PRESTRESSED CONCRETE BRIDGES</td>
<td>1266</td>
</tr>
<tr>
<td>PRECAST COMPOSITE SLAB SPAN SYSTEM (PCSSS): FIELD INVESTIGATION</td>
<td>1291</td>
</tr>
<tr>
<td>INSTRUMENTATION AND MONITORING OF I35W ST. ANTHONY FALLS BRIDGE</td>
<td>1304</td>
</tr>
<tr>
<td>UPGRADE OF GENEVA AIRPORT RUNWAY – « THE TUNNEL DE FERNEY »</td>
<td></td>
</tr>
<tr>
<td>PERFORMANCE BASED CONCRETE STRUCTURES COMBINED WITH AN ORIGINAL AND</td>
<td></td>
</tr>
<tr>
<td>OPTIMIZED CONSTRUCTION METHOD</td>
<td>1315</td>
</tr>
<tr>
<td>RATIONAL SHEAR ANALYSIS FOR MULTI-CELLULAR CONCRETE BOX SECTIONS</td>
<td>1326</td>
</tr>
<tr>
<td>DESIGN OF THE INDIAN RIVER INLET BRIDGE</td>
<td>1339</td>
</tr>
<tr>
<td>SPALLING OF PARTIAL-DEPTH PRECAST-PRESTRESSED BRIDGE DECK PANEL</td>
<td>1351</td>
</tr>
<tr>
<td>INVESTIGATION USING GPR</td>
<td></td>
</tr>
</tbody>
</table>
LIFTING AND REHABILITATION OF A 40-YEAR OLD MULTISpan POSTTENSIONED CONCRETE BRIDGE .......................................................................................................................... 1368

THE EFFECT OF CONTROLLED PERMEABILITY FORMWORK ON CARBONATION-INDUCED CORROSION ............................ 1375

Tamas Kovacs

A COMPARATIVE STUDY BETWEEN THE USE OF HIGH-STRENGTH CONCRETE (HSC) AND HIGH-STRENGTH SELF CONSOLIDATING CONCRETE (HS-SCC) FOR ACCELERATED CONSTRUCTION OF PEDESTRIAN BRIDGES ............................................................................. 1383

Kurt E. Bloch, Wei Zheng, John J. Moors

A PRECAST BRIDGE BENT SYSTEM FOR SEISMIC REGIONS .................................................................................................. 1402

Olaifar S. Haraldsson, Jason B. K. Pang, John F. Stanton, Marc O. Eberhard

“LA VICARIA” ARCH ................................................................................................................................. 1415

Santiago Pérez-Fadón, Jose Emilio Herrera, Luis Martín-Teresa, Marcos Sánchez

INFLUENCE OF STRENGTHENING OF BRIDGE PIERs ON SEISMIC BEHAVIOR OF FOUNDATION .......................... 1429

Rachid Annan, Mathieu Guille, Byul Shim, Sang-Sup Ahn, Jong-Ho Yang

FRICtion DAMPERS ON INCHIEON BRIDGE, PERFORMANCE PREdICTION AND IN SITU TEST .............................. 1438

FRICtion DAMPERS ON INCHIEON BRIDGE, PERFORMANCE PREdICTION AND IN SITU TEST .............................. 1438

Rachid Annan, Mathieu Guille, Byul Shim, Sang-Sup Ahn, Jong-Ho Yang

DOWNFALL OF A ROAD BRIDGE DURING REPAIR .............................................................................................. 1452

Milan Holický, Jana Marková, Miroslav Šikora

INCORONATA VIADUCT: SALERNO – REGGIO CALABRIA HIGHWAY – LANE NORTH” STRENGTHENING OF EXISTING STRUCTURES WITH EXTERNAL POST-TENSIONING................................. 1460

Marcos J. Pantaleón, Roberto Revilla, Patricia Olazábal

THE CHHANI SUSPENSION BRIDGE COMPLETE OVERHAUL ......................................................................................... 1468

CESare Prevedini, Tommaso Ciccone, Fabrizio Averardi Ripari, Marcello Petrangeli, Marco Petrangh

SENSOR BASED ASSESSMENT OF SOIL-STRUCTURE-INTERACTION .......................................................... 1478

Roman Wendtner, Alfred Strauss, Konrad Bergmeister, Michael Reiterer

DESIGN OF CAST-IN-PLACE BALANCED CANTILEVER BRIDGES IN TURKEY ...................................................... 1487

INAUGURATA VIADUCT, CANTABRIA (SPAIN) ........................................................................................................ 1508

Marcos J. Pantaleón, Roberto Revilla, Patricia Olazábal

INNOVATIONS IN CANTILEVER FORMING TRAVELERS FOR BRIDGE CONSTRUCTION ................................................... 1520

Michael Broichgans, Alfred Preuer

NEW BRIDGE OVER LLobregat RIVER, CATALUÑA (SPAIN) ..................................................................................... 1532

Marcos J. Pantaleón, Roberto Revilla, Patricia Olazábal

NEW BRIDGE OVER LLOBREGAT RIVER, CATALUÑA (SPAIN) ..................................................................................... 1532

Marcos J. Pantaleón, Roberto Revilla, Patricia Olazábal

FOOTBRIDGE RONDA BAHIa, CANTABRIA (SPAIN) ............................................................................................... 1549

Marcos J. Pantaleón, Roberto Revilla, Patricia Olazábal

NU PRECAST-PRESTRESSED CONCRETE PILE SPICING ......................................................................................... 1563

Quinton Patzlaff, Rokiem Hanna, Maher K. Tadros

CONTINUED APPLICATION OF PRECAST PRESTRESSED CONCRETE FOR RAPID PAVEMENT RECONSTRUCTION ........................................................................................................ 1576

David K. Merritt, Samuel S. Tyson

DEVELOPMENT OF A DESIGN METHOD FOR REINFORCEMENT-FREE DECKS USING A MODIFIED STRUT-AND-TIE MODEL AND A CONSTRUCTION CASE STUDY .................................................. 1590

Michael G. Oliva, Lawrence C. Bank, Han Ug Bae

ELEVATED LIGHT RAIL DESIGN IN HIGH SEISMIC AND ENVIRONMENTALLY SENSITIVE AND/OR CONGESTED URBAN AREAS .................................................................................. 1601

Daniel Tasto, Christopher Hall, Patrick Malone

TESTING OF SELF-CONSOLIDATING CONCRETE FOR DRILLED SHAFTS IN A RURAL BRIDGE REPLACEMENT IN WEST VIRGINIA ..................................................................................... 1619

Roger H. L. Chen, Joseph G. Sweet, Kyle B. Baranowski

BURSTING AND SPALLING IN PRETENSIONED CONCRETE BEAMS ........................................................................ 1633

David A Dunkman, Catherine G Howell, Andrew M Moore, Alejandro Avendaño, Oguzhan Bayrak, James O Jirsa

EARLY-AGE PERFORMANCE OF CONTINUOUSLY REINFORCED CONCRETE PAVEMENTS USING STEEL AND GFRP REINFORCEMENT ...................................................................................... 1645

Jeong-Hoon Chai, Roger H. L. Chen

REPLACEMENT OF THE DOYLE DRIVE THE SOUTH ACCESS TO THE GOLDEN GATE BRIDGE .......................................................................................... 1659

Ahmed M. M. Ibrahim, Majid Madani, Ofelia P. Alcantara

SEISMIC DESIGN OF BRIDGES CROSSING FAULT RUPTURE ZONES ........................................................................ 1674

Foued Zayati

THE NEW I-35W BRIDGE – A MODERN CONCRETE BRIDGE FOR THE FUTURE ................................................................. 1687

Kevin Western, Alan R. Philips

EFFECT OF DETERIORATION-INDUCED CRACKS ON THE MODAL PROPERTIES OF CONCRETE BEAMS ................................................................................................................................. 1696

Tamas Kovacs
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMINING THE EFFECT OF DECK PLACEMENT TIME ON THE BEHAVIOR OF COMPOSITE PRETENSIONED CONCRETE BRIDGE GIRDER</td>
<td>1705</td>
</tr>
<tr>
<td>DESIGN OF LONG LIFE CONCRETE STRUCTURES USING HIGH PERFORMANCE REINFORCING STEELS</td>
<td>1717</td>
</tr>
<tr>
<td>INNOVATIVE APPLICATIONS OF PRECAST CONCRETE ON COMPLEX BRIDGE PROJECTS IN COLORADO</td>
<td>1727</td>
</tr>
<tr>
<td>EXPERIENCE IN THE LONG-TERM MONITORING OF BRIDGES</td>
<td>1741</td>
</tr>
<tr>
<td>DESIGN AND CONSTRUCTION OF PRECAST PRESTRESSED CONCRETE PAVEMENT IN INDONESIA</td>
<td>1751</td>
</tr>
<tr>
<td>DESIGN AND EXECUTIVE CONTROL OF THREE CURVED BOX GIRDER BRIDGES IN S.PAULO</td>
<td>1774</td>
</tr>
<tr>
<td>LOWERING MANOEUVRE ON CONCRETE SEMI ARCHES FOR THE DEZA VIADUCT IN SPAIN</td>
<td>1789</td>
</tr>
<tr>
<td>DISTRIBUTION OF LIVE LOAD REACTION AT PIERS OF SKEWED CONTINUOUS PRESTRESSED CONCRETE BRIDGES</td>
<td>1806</td>
</tr>
<tr>
<td>MONITORING BASED ANALYSIS OF A CONCRETE FRAME BRIDGE “MARKTWASSER BRIDGE”</td>
<td>1817</td>
</tr>
<tr>
<td>BUILDING SYSTEMS</td>
<td></td>
</tr>
<tr>
<td>SHEAR RESISTANCE OF PRE-TENSIONED HOLLOW CORE SLABS – TEST RESULTS VS. STANDARDS</td>
<td>1839</td>
</tr>
<tr>
<td>LARGE PROJECTS AND INNOVATIVE STRUCTURES: INNOVATIVE APPLICATION OF LARGE-SPAN ROOF ELEMENT AT BENGALURU INTERNATIONAL AIRPORT, INDIA</td>
<td>1852</td>
</tr>
<tr>
<td>ACCEPTANCE CRITERIA FOR CONCRETE AND MASONRY STRENGTHENING USING EXTERNALLY BONDED FIBER-REINFORCED POLYMER COMPOSITE SYSTEMS TO SHOW COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE</td>
<td>1864</td>
</tr>
<tr>
<td>NEW PRECAST LIGHT FLOORING SYSTEM</td>
<td>1873</td>
</tr>
<tr>
<td>MODERN HYBRID STRUCTURES MADE OF UHPC AND HIGH STRENGTH STEEL</td>
<td>1884</td>
</tr>
<tr>
<td>VOLUME 3</td>
<td></td>
</tr>
<tr>
<td>WEDGE ANCHORAGE FOR NEAR SURFACE MOUNTED APPLICATIONS - STRENGTHENING OF STRUCTURES BY USING PRETRESSED CARBON FIBRE REINFORCED STRIPS</td>
<td>1896</td>
</tr>
<tr>
<td>INNOVATIVE DAMPING SYSTEM FOR STRUCTURES</td>
<td>1912</td>
</tr>
<tr>
<td>THEORETICAL AND EXPERIMENTAL ANALYSIS OF COMPOSITE STEEL - REINFORCED CONCRETE (SRC) COLUMNS</td>
<td>1920</td>
</tr>
<tr>
<td>STUDY ON DAMAGE CONTROLLED PRECAST-PRESTRESSED CONCRETE STRUCTURE WITH PC MILD-PRESS-JOINT PART 4: EXPERIMENTAL STUDY ON MECHANICAL BEHAVIOR OF CRUCIFORM FRAME WITH FLOOR SLAB CONSTRUCTED USING PC-MILD-PRESS JOINT METHOD</td>
<td>1932</td>
</tr>
<tr>
<td>PERFORMANCE-BASED RETROFIT OF ATHENS NATIONAL GALLERY</td>
<td>1943</td>
</tr>
<tr>
<td>POST-TENSIONING TECHNOLOGY IN SPORTS ARENAS</td>
<td>1955</td>
</tr>
<tr>
<td>INNOVATING DEVICE FOR PRESTRESSING CFRP LAMINATES</td>
<td>1967</td>
</tr>
<tr>
<td>CONSTRUCTION TECHNIQUES OF THE WORLD’S LARGEST CABLE AND ROD IN VANKE CENTER CABLE TRANSFER STRUCTURE</td>
<td>1978</td>
</tr>
<tr>
<td>BOND CAPACITY OF CFRP-PLATES EXTERNALLY BONDED TO RC STRUCTURES UNDER FATIGUE LOAD</td>
<td>1989</td>
</tr>
<tr>
<td>STRUCTURAL PRECAST CONCRETE IN MELBOURNE, AUSTRALIA</td>
<td>1997</td>
</tr>
</tbody>
</table>
INNOVATIVE WALL CONSTRUCTION MADE OF FOAM SCC AND TEXTILE REINFORCED CONCRETE ............................................. 2013
Rebecca Mott, Julia Szendrő, Wolfgang Brameshuber

EXPERIMENTAL STUDY ON CATENARY ACTION OF RC BEAM-COLUMN SUBASSEMBLIES ............................................. 2020
Jun Yu, Kang Hai Tan

MACROMODEL-BASED SIMULATION OF CATENARY ACTION OF RC BEAM-COLUMN SUB-ASSEMBLIES ......................... 2034
Jun Yu, Kang Hai Tan

CE MARKED POST-TENSIONING KITS AN INTERNATIONAL PASSPORT FOR STATE-OF-THE-ART POST-TENSIONING ......................................................... 2046
Marc Piser, Markus Traute, Erik Mellier, Hans Rudolf Gans

ELECTRO-CHEMICAL TREATMENTS FOR CORRODED PIERS IN MONTE CARLO ............................................. 2053
Nazha Berramdane, Erik Mellier, Christian Tourneur

ANALYSIS AND DESIGN OF HOLLOW CORE SLABS ................................................................. 2063
Carlos M. Araujo, Daniel D. Loriggio, Jose Camara

VIRTUES OF SUSTAINABLE CONCRETE CONSTRUCTION PRACTICES ................................................................. 2074

SUPPORTING THE CODES: EXPERIMENTAL RESULTS CONFIRM THEORETICAL APPROACHES, SHOWN BY EXAMPLE OF A NEW GENERATION OF ANCHOR CHANNELS ......................................................... 2094
Matthias Roik

PUNCHING SHEAR STRENGTH OF HIGH PERFORMANCE FIBER REINFORCED CONCRETE SLABS ..................................... 2103
René Sater, Lionel Moreillon

PRECAST CONCRETE LIFE-CYCLE ASSESSMENT—CRADLE TO OCCUPANCY ................................................................. 2114
Emily Loresz

AN EXPERIMENTAL STUDY ON PRESTRESSED COMPOSITE BEAMS WITH CORRUGATED WEB ...................................... 2120
Kang-Su Kim, Deuck-Hang Lee, Yong-Sik Bang, Kyounghwan Kuli, Jin-Hoe Ihwang, Hyun-Jin Ju

STRUCTURAL BEHAVIOR OF HOLLOW CORE FLOORS WITH OPENINGS: A PARAMETRIC NUMERICAL STUDY ............... 2132
Patrizia Bernardi, Roberto Cerioni, Ivo Iori, Elena Michelini

A THERMALLY EFFICIENT, FULLY COMPOSITE PRECAST/PRESTRESSED CONCRETE MASS WALL: THE DESIGN, IMPLEMENTATION AND THERMAL IMAGING RESULTS AFTER OCCUPANCY ............................................. 2145
Harry Gleich, Joy Cariveau

SHALLOW FLAT SOFFIT PRECAST CONCRETE FLOOR SYSTEM ..................................................................................... 2151
George Morcos, Maher K. Tadros

PRESTRESSED CONCRETE GIRDER - INNOVATIVE DEVELOPMENTS ............................................................................. 2165
M. Empelmann, Ch. Sender

FULL-FIELD LATERAL RESPONSE INVESTIGATION OF HYBRID PRECAST CONCRETE SHEAR WALLS ............................................. 2175
Harry J. Smith, Michael J. McGinnis, Yahiya C. Kourama

PERFORMANCE AND DESIGN OF PUNCHING SHEAR REINFORCING SYSTEMS ............................................................. 2187
Miguel Fernandez Ruiz, Aurelio Mutoni

THERMALLY EFFICIENT PRECAST CONCRETE SANDWICH LOAD BEARING WALL PANELS REINFORCED WITH CFRP .......................... 2202
Gregory Lucier, Sani Rizkalla, Tarek Hassan

SHEAR STRENGTH OF MULTI TEE RIBBED SLABS WITH WELDED WIRE FABRIC AS SHEAR REINFORCEMENT ..................... 2220
Sung-Gul Hong, Min-Ki Kim, Eun-Sang Kim, Namhee Kim Hong

CABLE BRACING SYSTEM TO RESIST WIND FORCES ON A TALL BUILDING IN MIAMI ............................................. 2230
Muhammad Azhar Saleem, Muhammad Mazhar Saleem

SLABS ON GROUND - CRACKFREE DUE TO AIR SUPPORTED SLIDE BEARING ................................................................. 2238
Anton Schweighofer, Johann Kollegger

STEEL FIBRE REINFORCED CONCRETE SLABS – INNOVATIVE AND FAST CONSTRUCTION METHODS ............................................. 2249
Michael E. Dixon, Degan G. Hambacher, Tom G. Gabbert

BEHAVIOR AND DESIGN OF FULL-SCALE PRECAST DOUBLE-TEES REINFORCED WITH CFRP .......................... 2259
Gregory Lucier, Sani Rizkalla, Larbi Sennour, Harry Gleich

THE PRELIMINARY DESIGN OF THE GERARD L. CAFESJIAN CENTER FOR THE ARTS IN YEREVAN, ARMENIA ............................................. 2275
Anton M. Nelson

NEW ANCHORING METHOD FOR Prestressed FRP REINFORCEMENT ............................................................................. 2290
Pet Stupajnek, David Horak, David Durech

CYCLIC TEST TO FAILURE OF PRE-DAMAGED RETROFITTED RC BUILDING ................................................................. 2302
Statthi N. Bousias, Michael N. Fardis, Ilias Streptielas, Xenofon Palios

CONNECTION STUDY OF BLAST DESIGN FOR PRECAST COMPONENTS ................................................................. 2312
Charles J. Oswald, David C. Morgan

STAY-IN-PLACE GFRP FORMWORK ..................................................................................................................... 2326
Peter Kozak, Josef Vican

MAXIMIZING THE BENEFIT OF PRECAST/PRESTRESSED COMPONENTS IN BLAST RESISTANT STRUCTURES ................................................................. 2337
Michael E. Dixon, Degan G. Hambacher, Tom G. Gabbert
**PRESTRESSED HOLLOW CORE SLABS** ................................................................. 2352
Bruna Cintra, Marcelo A. Ferreira, Roberto C. Carvalho, Libanio M. Pinheiro

**LATERAL LOAD RESISTANCE OF L-SHAPED CORE-WALLS FOR TALL BUILDINGS** ................................................................. 2363
Susumu Kono, Kazuma Inada, Masanobu Sakashita, Hisatuka Sato

**OPTIMIZED NU SANDWICH PANEL SYSTEM FOR ENERGY, COMPOSITE ACTION AND PRODUCTION EFFICIENCY** ................................................................. 2373
George Morcos, Maher K. Tadros, Mark Lafferty, Doug Gremel

**FLEXURAL BEHAVIOUR OF RC T-BEAMS STRENGTHENED WITH DIFFERENT FRP MATERIALS** ................................................................. 2386
Tiago Carvalho, Carlos Castro, Hugo Bicalho, Raquel Paula

**RESEARCH ON LARGE BAY RESIDENTIAL SYSTEM WITH PRESTRESSED CONCRETE SLAB** ................................................................. 2398
Jianlin Pan, Dabin Feng

**CENTRE FOR RESEARCH-BASED INNOVATION – AN EFFECTIVE TOOL TO CREATE MORE ATTRACTIVE CONCRETE STRUCTURES** ................................................................. 2405
Tor Arne Hammer, Einar Aassved Hansen

**SIMULATED AND TESTED SEISMIC RESPONSE OF POST-INSTALLED METAL ANCHORS IN CONCRETE** ................................................................. 2415
Thomas J. D’Arcy

**U. S. PHILOSOPHY FOR PRECAST CONNECTIONS** ................................................................. 2424

**DESIGN OF ENERGY EFFICIENT PARTIALLY-COMPOSITE SANDWICH WALL PANELS USING FIBER COMPOSITE POLYMER (FRP) WYTHE CONNECTORS** ................................................................. 2443
Venkatesh Seshappa, Kim E. Seeber

**EAD**

**ANALITICAL SOLUTIONS FOR THE PROBLEM OF CABLE BENDING** ................................................................. 2460
Antonio Caballero, Marcel Poser

**WORKABILITY OF A FRICTIONAL DAMPER IN A SHALLOW CABLE: ANALYTICAL AND EXPERIMENTAL WORK** ................................................................. 2472
Antonio Caballero, Marcel Poser

**EMPIRICAL METHOD TO ESTIMATE LONG-TERM DEFLECTIONS OF REINFORCED CONCRETE MEMBERS** ................................................................. 2482
Franz A. Zahn, Jose J. Restrepo

**ALTERNATIVE DETAIL OF THE CONNECTION REINFORCEMENT FOR COLUMNS AND WALLS FIXED AT THE FOOTING** ................................................................. 2495
Franz A. Zahn

**FIB MODEL CODE 2010-CHAPTER 9: CONSERVATION OF CONCRETE STRUCTURES** ................................................................. 2508
Stuart L. Matthews, Tunmin Ueda, Agnieszka J. Bigaj-Van Vliet

**SEISMIC BEHAVIORS AND DUCTILITY OF REINFORCED CONCRETE COLUMNS WRAPPED WITH CFRP SHEETS** ................................................................. 2521
Liu Hang, Li Chenguang, Yang Xuezhong

**SHEAR STRENGTH OF CYLINDRICAL CONCRETE COLUMNS: PROPOSAL FOR STANDARDS** ................................................................. 2532
Jose Turmo, Gonzalo Ramos, Angel C. Aparicio

**FIRE RESISTANCE OF METAL ANCHORS FOR THE USE IN CONCRETE** ................................................................. 2541
Gerhart Lange

**STRUCTURAL DESIGN AND CONSTRUCTION OF PRESTRESSED CONCRETE TANKS IN A LARGE EFFLUENT TREATING PROJECT** ................................................................. 2551
Liu Hang, Li Chenguang, Wu Wenji, Yang Xuezhong

**BOND TESTS AND ON-SITE STRUCTURAL CONCRETE QUALITY CONTROL** ................................................................. 2563
Michel Lorrain, Monica Pinto Barbosa, Maurice Arnaud

**NUCLEAR REACTOR CONTAINMENTS – EVALUATION OF PRESTRESS LOSSES AND PREDICTION MODELS** ................................................................. 2573
Peter L. M. Lundqvist

**VALIDATION OF A THERMO-MECHANICAL MODEL FOR RC SLABS DURING FIRE** ................................................................. 2593
Emmanuel Amman, Luc Taerwe

**SIA 269/2 - A NEW SWISS CODE FOR THE CONSERVATION OF CONCRETE STRUCTURES** ................................................................. 2603
Daia Zwicky

**NUMERICAL AND EXPERIMENTAL STUDY OF A WAFFLE SLAB IN A REDUCED MODEL SUBMITTED TO LINEAR LOADING** ................................................................. 2616
Pauline F. Schuetz, Frasico P. S. L. Gassu, Luiz Carlos P. Silva

**CRACK RISK MINIMIZATION IN CONCRETE STRUCTURES UNDERGOING HYGROTHERMAL PHENOMENA** ................................................................. 2632
Cristina Zamott, Alberto Meda, Gianfranco Pizzardi, Stefano Cangiano

**HIGH STRENGTH FULL-SCALE BEAMS UNDER FLEXURE AND SHEAR: AN EXPERIMENTAL STUDY** ................................................................. 2644
Fausto Minelli, Giovanni A. Pizzardi

**PRECAST CONCRETE STRUCTURES ASSESSMENT WITH THE DIRECT DISPLACEMENT BASED DESIGN** ................................................................. 2654
Andrea Belleri, Paolo Riva
EFFECT OF AXIAL LOAD ON THE SHEAR-TRANSFER MECHANISM DURING SHEAR DAMAGE
PROGRESS IN R/C COLUMNS..........................................................................................................................2666
Yasugi Shimohara
IMPLEMENTATION OF A BIM 3D MODELING TOOL IN A HISTORIC 2D ENVIRONMENT ..................................................2682
Beth A. Mitchell
SEISMIC PERFORMANCE OF HALF-PREFABRICATED PRESTRESSED REINFORCED CONCRETE
COLUMNS.........................................................................................................................................................2692
Susumu Inoue, Nobuhiko Minamino
CRACKING OF PRE-TENSIONED STRUCTURES ..................................................................................................2704
Pier Giorgio Debernardi, Maurizio Taliano
COMPARISON BETWEEN REFINED AND SIMPLIFIED MODELS ABOUT THE MEAN CURVATURE OF
R.C. BEAMS IN SERVICE CONDITIONS ........................................................................................................2715
Pier Giorgio Debernardi, Matteo Guiglia, Maurizio Taliano
SHEAR STRENGTH OF BEAM-COLUMN JOINTS UNDER SEISMIC LOADING – FIBER EFFECTIVENESS ..........2726
Giuliana Somma
EVALUATION OF THE DIAGONAL COMPRESSION CAPACITY OF REINFORCED HIGH STRENGTH
CONCRETE BEAMS ........................................................................................................................................2736
Ken Watanabe, Chikaharu Kobayashi, Junichiro Niwa
APPLICATION OF 150 MPA ULTRA-HIGH-STRENGTH CONCRETE FOR A 59-STORY RC BUILDING IN
A SEISMIC REGION ..........................................................................................................................................2746
Hideki Kimura, Tadao Ueda, Kenro Mitsu
REINFORCING DIKES WITH SHEET PILES MADE OF HIGH PERFORMANCE CONCRETE ........................................2761
Concles Van Der Veen, C. Rene Braam, Math Phuis
MEASUREMENT UNCERTAINTY AND POD AND ITS INFLUENCE REMAINING SERVICE LIFE
EVALUATION .....................................................................................................................................................2774
Sylvia Kestler, Christoph Gehlen
FIBER REINFORCED CONCRETE IN THE NEW FIB MODEL CODE ........................................................................2787
Marco Di Prisco, Giovanni Plizzari, Lucie Vandewalle
ASSESSMENT OF THE CHARACTERISTIC STRENGTH OF CONCRETE FROM SMALL SAMPLES
BASED ON BAYESIAN UPDATING WITH PRIOR INFORMATION ...........................................................................2799
Robby Caspeele, Luc Taerwe
BAYESIAN UPDATING OF THE SAFETY LEVEL OF CONCRETE ELEMENTS USING INFORMATION
FROM TEST RESULTS AND CONFORMITY ASSESSMENT .................................................................................2810
Robby Caspeele, Luc Taerwe
CONCRETE HINGES – HISTORICAL DEVELOPMENT AND CONTEMPORARY USE ......................................................2822
Steffen Marx, Gregor Schacht
SHEARWALL IN AN OFFICE BUILDING .............................................................................................................2844
Ludovit Pollo, Vladimir Benko, Jaroslav Halvnik

VOLUME 4

BOND BEHAVIOUR OF PRESTRESS STEEL STRANDS BONDED WITH AN POXY ADHESIVE AND A
CEMENT GROUT FOR FLAT SLAB STRENGTHENING PURPOSES – EXPERIMENTAL STUDY ........................................2856
Duarte V. Faria, Valter G. Lucio, Antonio P. Ramos
BUILDING DOUBLE CURVED SHELLS FORM PLANE PLATES ...................................................................................2866
Sonja Dallinger, Johann Kollegger
SIMPLIFIED METHOD FOR THE EVALUATION OF THE ULTIMATE LOAD OF HIGH PERFORMANCE
CONCRETE COLUMNS........................................................................................................................................2875
Jonathan Harfi, Lawrence Kahn
STEEL HOLLOW COLUMNS FILLED WITH SELF-COMPACTING CONCRETE UNDER FIRE
CONDITIONS ......................................................................................................................................................2889
Jean Claude Dotrepe, Thi Binh Chu, Jean Marc Franssen
INFLUENCE OF BAR CONTINUITY ON BEHAVIOUR OF LAPPED SPLICES...............................................................2904
Giovanni Metelli, John Cairns, Giovanni Plizzari
LATERAL-TORSIONAL BUCKLING EXPERIMENTS ON RECTANGULAR PRESTRESSED CONCRETE
BEAMS ...............................................................................................................................................................2916
Carlo Galati, Lawrence Kahn
TENSION STIFFENING OF TENSION MEMBERS UNDER HIGHLY REPEATED LOADS .....................................................2927
Carlos Zanuy, Luis Alhajar, Pablo De La Fuente
APPLICATION OF ACTIVE SPACE PROPPING SYSTEM IN STRUCTURAL RETROFIT ....................................................2937
Chunkai He, Ni Wang
KHALSA HERITAGE COMPLEX, PUNJAB, INDIA: CONVERTING ARCHITECTURAL FANTASY TO
REALITY IN STRUCTURAL CONCRETE ..............................................................................................................2945
Mahesh Tandon, Vinay Gupta
FINITE ELEMENT MODELING OF BEAMS UNDER PREVALENT SHEAR ACTIONS .........................................................2953
Gabriele Bertagnoli, Giuseppe Mancini, Antonino Recupero, Nino Spinella
COMPARISON BETWEEN NUMERICAL AND EXPERIMENTAL CYCLIC RESPONSE OF ALTERNATIVE
COLUMN TO FOUNDATION CONNECTIONS OF REINFORCED CONCRETE PRECAST STRUCTURES ..........................2965
Etore Faga, Lorenzo Bianco, Davide Bolognini, Roberto Nascimbene
STRUT-AND-TIE MODELS TO DESIGN BRIDGE SUBJECTED TO HORIZONTAL ACTIONS .......................................................... 2976
Maurizio Messina, Fabrizio Palmitesta, Domenico Raffaeli

ESTIMATING EXTREME THERMAL ACTIONS IN CONCRETE STRUCTURES ........................................................................ 2990
Oskar Larsson

DURABILITY CLASS OF CONCRETE ........................................................................................................................................... 3006
Dan Paul P. Georgescu, Adelina-Carmen I. Apostu, Radu Gh. Pascu

INFLUENCE OF TEXTILE REINFORCEMENT ON THE PRINCIPLE STRESS CONDITION OF STRENGTHENED RC BEAM ........................................................................................................................................................................... 3016
Anamita Orteig, Anette Bruckner, Manfred Curbach

DESIGNING FOR BLAST LOADING: ROBUSTNESS IN THE FACE OF COLUMN COLLAPSE IN RC STRUCTURES .............................................................................................................................................................................. 3026
Alejandro Perez Caldentey, Andrea Facchin, Francesco Manna, Francesco Delpont

FULL-FIELD DISPLACEMENTS OF CFRP TO CONCRETE PULL-OFF BOND TESTS ........................................................................ 3035
Christoph Czaderski, Masoud Motavalli

DESIGN AND CONSTRUCTION OF TWO 173 M TALL NATURAL DRAUGHT COOLING TOWERS AT HISSAR IN INDIA ........................................................................................................................................................................................................ 3043

WIND EFFECTS ON LARGE DIAMETER TALL RC CHIMNEYS – COMPARISON OF INDIAN CODE, ACI CODE, CIDN CODE AND WIND TUNNEL TESTS .................................................................................................................................................................................................................. 3052
Subhashchandra G. Joglekar, Shiriram N. Patwardhan

DESIGN OF LARGE DIAMETER 275 M TALL REINFORCED CONCRETE CHIMNEY WITH TRIPLE STEEL FLUES AT SASAN, INDIA ........................................................................................................................................................................................................ 3063
Subhashchandra G. Joglekar, Normalhandraypanabhat, Shiriram N. Patwardhan

DURABILITY OF ADHESIVELY BOND-COMPOSITE REINFORCEMENTS FOR CONCRETE STRUCTURES .................................................................................................................................................................................................................. 3074
Sylvain Chauaigner, Marjorie Rabasse, Marc Quiertant, Karim Benzerri, Christophe Aubagnac

STRUT-AND-TIE MODELS UTILIZING CONCRETE TENSION FIELDS ........................................................................................... 3086
Karl-Heinz Reineck

EXPERIMENTAL AND ANALYTICAL BEHAVIOUR OF LIGHTWEIGHT CONCRETE BEAMS REINFORCED WITH GLASS-FIBER RODS ........................................................................................................................................................................................................ 3098
Mohamed El Zareef, Mike Schlaich

BEHAVIOUR OF THE JOINTS BETWEEN LIGHTWEIGHT CONCRETE BEAMS AND NORMAL CONCRETE COLUMNS IN SEISMIC REGIONS ........................................................................................................................................................................................................ 3110
Mohamed El Zareef, Mike Schlaich

BEHAVIOR OF ANCHORS IN HIGH PERFORMANCE CONCRETES ........................................................................................................... 3122
Norbert Randl, Oliver Gasella

EXISTING CONCRETE SILOS – LESSONS FROM INSPECTION, DIAGNOSIS, REHABILITATION AND STRENGTHENING ........................................................................................................................................................................................................ 3134
Augustin Popaescu, Ovidiu Beleanu

DBBD OF PRECAST Prestressed ROCKING WALLS WITH MILD STEEL DISSIPATORS: NON-DIMENSIONAL PARAMETRIC APPROACH ................................................................................................................................................................................. 3145
Vassilis Mpampatsikos, Davide Bolognini

REPAIR OF FIRE DAMAGED LOAD-BEARING CONCRETE COLUMNS ................................................................................................. 3158
Hanna Ahio, Tamo Inis, Jastj Matula, Matsu Pentti

TENSION STIFFENING RELATIONSHIPS BASED ON DESIGN CODE PROVISIONS ................................................................................... 3169
Gintaras Kaklauskas, Viktor Gribniak, Rokas Girdzias, Pavilas Vainiuinas, Darius Bacinskas

SHORT-TERM DEFLECTIONS OF RC MEMBERS: CODES VERSUS FE MODELING ........................................................................... 3177
Viktor Gribniak, Cervenka Vladimir, Gintaras Kaklauskas, Darius Bacinskas

NEW RESEARCH RESULTS ON CONCRETE AESTHETICS AND PRACTICAL EXPERIENCE IN GERMANY ........................................................................................................................................................................................................ 3190
Ludger Lothaus

MULTI-PARAMETRIC NLP OPTIMIZATION OF SINGLELY REINFORCED CONCRETE RECTANGULAR BEAMS ........................................................................................................................................................................................................ 3198
Ilidiko Merta, Stojan Kravanja

SLENDERNESS INFLUENCE ON THE BEHAVIOR OF CIRCULAR CONCRETE-FILLED STEEL TUBULAR COLUMNS UNDER AXIAL LOADS ........................................................................................................................................................................................................ 3208
Walter Luiz A. De Oliveira, Ana Lucia H. C. El Debs, Silvana De Nardim, Mounir Khalil El Debs

HIGH PERFORMANCE CONCRETE CORBELS CAST IN DIFFERENT STAGES OF THE COLUMN FOR PRECAST CONCRETE CONNECTIONS ........................................................................................................................................................................................................ 3218
Mounir K. El Debs, Jonatas B. A. Costa, Ana Lucia El Debs

MULTIPLY CONNECTED REINFORCED CONCRETE STRUCTURES WITH REASONABLE PARAMETERS ........................................................................................................................................................................................................ 3228
V. S. Shmakler, G. A. Molodchenko

ADAPTIVE STRESS FIELD MODELS FOR STRUCTURAL CONCRETE ........................................................................................................ 3238
Miguel Lourenco, João Almeida

RIÓ DE ANTIRION BRIDGE PROJECT – CONCRETE DURABILITY TOWARDS CORROSION RISK ........................................................................ 3257
Francois Cuvagh, Christophe Carde, Panayiotis Papanikolas, Arti Sathopoulou

ABUTMENT SHEAR WALL OF VIADUCT 1 ON ALGARVE HIGHWAY ......................................................................................................... 3274
João Almeida, Miguel Lourenco
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROXIMATE ASSESSMENT OF SEISMIC RESISTANCE AND SAFETY OF EXISTING...</td>
<td>3290</td>
</tr>
<tr>
<td>RESIDENTIAL BUILDINGS</td>
<td></td>
</tr>
<tr>
<td>DESIGN OF T-JOINTS IN AN OFFSHORE CONCRETE TERMINAL</td>
<td>3307</td>
</tr>
<tr>
<td>MOdELLING THE AGEING OF CONCRETE UNDER NUCLEAR WASTE DISPOSAL CONDITIONS</td>
<td>3322</td>
</tr>
<tr>
<td>Modeling shear capacity of beams longitudinally and transversey reinforced with ASTM A1035 steel</td>
<td>3332</td>
</tr>
<tr>
<td>INFLUENCE OF UNCERTAIN VERTICAL LOADS AND ACCELERATIONS ON THE SEISMIC</td>
<td>3348</td>
</tr>
<tr>
<td>PERFORMANCE OF AN RC BUILDING</td>
<td></td>
</tr>
<tr>
<td>REAL STRAIN EVOLUTION IN CONCRETE COLUMNS, MONITORING RESULTS AND CEB-FIP MODEL CODE 1990</td>
<td>3361</td>
</tr>
<tr>
<td>PERFORMANCE-BASED PLASTIC DESIGN (PBPD) OF RC SPECIAL MOMENT FRAME STRUCTURES</td>
<td>3371</td>
</tr>
<tr>
<td>CONCRETE-TO-CONCRETE BONDS - POTENTIALS FOR NEW STRUCTURES AND REHABILITATION</td>
<td>3382</td>
</tr>
<tr>
<td>PERFORMANCE LIMITS FOR REINFORCED CONCRETE COLUMNS UNDER SEVERE DISPLACEMENT CYCLES</td>
<td>3393</td>
</tr>
<tr>
<td>EFFORTS REDISTRIBUTION IN THE &quot;BASE–FOUNDATION–BUILDING&quot; SYSTEM WITH PLASTO-ELASTIC SOIL BASE DEFORMATION</td>
<td>3405</td>
</tr>
<tr>
<td>NUMERICAL METHOD OF BOUNDARY ELEMENTS IN APPLIED RESEARCHES OF PLATE-PILE FOUNDATION BEHAVIOR OF HIGH-RISE BUILDINGS</td>
<td>3413</td>
</tr>
<tr>
<td>TESTING OF LARGE CONCRETE CYLINDERS CONFINED WITH FRP</td>
<td>3419</td>
</tr>
<tr>
<td>PROGRESSIVE FAILURE OF BALCONIES OF A RESIDENTIAL BUILDING IN MARINGÁ (BRAZIL)</td>
<td>3439</td>
</tr>
<tr>
<td>CO2 EMISSION FROM PRECAST CONCRETE SYSTEM WITH MICROPILE</td>
<td>3450</td>
</tr>
<tr>
<td>CONCRETE TANK WALL RESTRAINED AT FOUNDATION SLAB</td>
<td>3459</td>
</tr>
<tr>
<td>DIRECT SEISMIC DESIGN FOR ASSIGNED PERFORMANCE PROBABILITIES</td>
<td>3475</td>
</tr>
<tr>
<td>TOWARDS EFFICIENT SHEAR REINFORCEMENT DESIGN LIMITS IN PRESTRESSED CONCRETE BEAMS</td>
<td>3485</td>
</tr>
<tr>
<td>LIMITS TO PLASTIC ANALYSIS DESIGN DUE TO SIZE-SCALE EFFECTS ON THE ROTATIONAL CAPACITY OF PLASTIC HINGES</td>
<td>3498</td>
</tr>
<tr>
<td>STRESS FIELD ANALYSIS OF STRUCTURAL CONCRETE BEAMS</td>
<td>3510</td>
</tr>
<tr>
<td>TIME-DEPENDENT EFFECTS ON THE COMPRESSIVE STRESS-STRAIN BEHAVIOR OF CONCRETE UNDER ELEVATED TEMPERATURES</td>
<td>3520</td>
</tr>
<tr>
<td>CRACKING AND SHRINKAGE IN SPECIAL WORKS A REVIEW OF DIFFERENT CALCULATION METHODS</td>
<td>3531</td>
</tr>
<tr>
<td>EXPERIMENTAL TESTS ON PRECAST TUNNEL SEGMENTS IN FIBER REINFORCED CONCRETE</td>
<td>3541</td>
</tr>
<tr>
<td>STRUCTURAL ANALYSIS OF TALL BUILDINGS SUBJECTED TO LATERAL LOADS: EFFECTS OF BRACINGS OF DIFFERENT HEIGHT</td>
<td>3551</td>
</tr>
<tr>
<td>REDUCING THE DISCREPANCY IN CALCULATED SHEAR CAPACITY AT THE TRANSITION FROM A DEEP TO SLENDER BEAM</td>
<td>3563</td>
</tr>
<tr>
<td>SEMISPACE FEM ELEMENT AND SOIL – STRUCTURE INTERACTION</td>
<td>3574</td>
</tr>
<tr>
<td>STRUCTURE FIRE RESISTANCE: A JOINT APPROACH BETWEEN MODELLING AND FULL SCALE TESTING (SUBSTRUCTURING SYSTEM)</td>
<td>3588</td>
</tr>
<tr>
<td>TRAIN TERMINAL FORUM BUENAVIDA</td>
<td>3601</td>
</tr>
</tbody>
</table>

Authors:
- Mario Onate, Francisco Ambia, Eduardo Zamora
LONG-TERM BEHAVIOR OF COMPOSITE CONCRETE GIRDER MADE CONTINUOUS ................................................................. 3629
Snezana B. Marović, Sasa B. Stojic

EXPERIMENTAL INVESTIGATION OF PRECAST CONCRETE RIBBED WALL WATER TANKS
PRESTRESSED WITH EXTERNAL UNBONDED TENDONS ........................................................................................................ 3640
Andrzej S. Seruga, Dariusz H. Faustmann

EVALUATION OF SUSTAINABLE STRUCTURAL PROPERTIES OF CONSTRUCTION MATERIALS AND LIFE-CYCLE ANALYSIS PROGRAMS .......................................................................................... 3655
Joseph M. Danatzko, Halil Sezen

THEORETICAL MODELING OF PRESTRESSED CONCRETE MEMBERS SUBJECTED TO SHEAR CONSIDERING BOND STRENGTH OF PT TENDONS ................................................................................. 3668
Masanori Tani, Minehiro Nishiyama

PUSHOVER ANALYSES OF PRECAST STRUCTURAL WALL BUILDINGS ....................................................................................... 3682
Beatrice Belletti, Antonello Gasperi, Ivo Iori, Paolo Riva

EVALUATION OF SHEAR DESIGN PROCEDURES FOR PRESTRESSED CONCRETE MEMBERS ................................................................................................................................. 3697
Jaeman Lee, Minehiro Nishiyama, Masanori Tani

INSTABILITY PROBLEMS – INVESTIGATION OF PCRITICAL JOINT UNDER MOMENT LOADS .................................................. 3712
Velvet Karatzas, Elisabeth Karatzas

UNIQUE CONCRETE STRUCTURES TAILOR-MADE WITH THE USE OF SCC, ROBOTS AND DIGITAL ARCHITECTURE ........................................................................................................................................... 3729
Mette Glavind, Thomas Juul Andersen, Lars Thrane

CONVERSION OF LARGE CAST-IN-PLACE SHEAR WALL STRUCTURES TO PRECAST ........................................................................... 3739
Chad A. Van Kampen, Alex Mihaylov

INFLUENCE OF THE RANDOMNESS OF THE MECHANICAL PARAMETERS ON THE SEISMIC DAMAGE ASSESSMENT OF RC FRAMES .......................................................................................... 3753
Fahrizzi Comodini, Marco Mezzi

CHALLENGES IN THE CREEP BUCKLING ANALYSIS OF THIN-WALLED CONCRETE SHELLS .................................................. 3763
Ehab Hamed, Mark A. Bradford

SHEAR FAILURE OF LARGE CONCRETE BEAMS: PART I – MATERIAL PARAMETERS IDENTIFICATION .................................................. 3774
David Lebky, Dražomir Novak, Vladimir Cervenka

SHEAR FAILURE OF LARGE LIGHTLY REINFORCED CONCRETE BEAMS: PART II – ASSESSMENT OF GLOBAL SAFETY OF RESISTANCE .......................................................................................................................... 3784
Vladimir Cervenka, Jiri Dolezel, Dražomir Novak

Rute Viegas, Antonio Flor, Gisela Frías

VOLUME 5

CONSTRUCTION AND EXPLOITATION OF SEISMIC REINFORCEMENT METHOD FOR REINFORCED CONCRETEiwUPUS USING MULTILAYER THIN STEEL SHEETS ..................................................................................................................... 3810
Kazuo Seki, Tadayoshi Ishibashi, Datikace Tsukishima, Kengo Shinoda, Marek Kurochka

FLEXURAL PERFORMANCE OF CONCRETE BEAMS REINFORCED WITH BASALT FRP BARS .................................................................................................................................................. 3821
Anil Patnaik, Sudeep Adhikar, Pouya Bani Bayat, Paul Robinson

PERFORMANCE OF FRP CONFINEMENT ON NON CIRCULAR MEMBERS .................................................................................. 3834
Gian Piero Lignola, Andrea Protia, Gaetano Manfredi, Edoardo Cosenza

LONGITUDINAL SHEAR BEHAVIOR AND ANALYSIS OF CAST-IN-PLACE CONCRETE TOPPINGS REINFORCED WITH CARBON FIBER GRIDS .......................................................................................................................... 3844

NONLINEAR ANALYSIS OF POST-TENSIONED CONCRETE WALLS THAT MINIMIZE RESIDUAL DRIFTS UNDER SEISMIC LOADING .......................................................................................................................... 3856
Tetsuya Ohnuma, Gregory G. Dieierlein

COMPOSITE INSULATED PRECAST WALL PANELS WITH SHEAR TRANSFER PROVIDED BY CARBON FIBER GRID .................................................................................................................................................. 3868
Yoo Jee Kim, Harold Messenger, Tom Harmon

RESPONSE OF ISOLATED REINFORCED CONCRETE MEMBERS RETROFITTED WITH NSM CFRP STRIPS IN AXIAL TENSION .................................................................................................................................................. 3877
Arifur Rahman, Yail J. Kim

RECOMMENDED IMPROVEMENTS TO CURRENT SHEAR-FRICTION PROVISIONS OF MODEL CODE .................................................................................................................................................. 3886
Pedro M. D. Santos, Eduardo N. B. S. Julio

RETROFITTING OF AN EXISTING RC STRUCTURE USING EC8 - PART 3 .................................................................................. 3907
Christos Z. Chrysostomou, Nicholas Kyrakiades, Michael Pittas

PRECAST CONCRETE COLUMN CONNECTIONS FOR EARTHQUAKE RESISTANCE. EXPERIMENTAL RESEARCH .................................................................................................................................................. 3920
Papă Viorel, Radu Păscu, Dragoș Cotoșăuș

STUDY OF PERVIOUS CEMENT CONCRETE MADE OF AGGREGATES RECYCLED FROM DEMOLISHED CONCRETE WASTES .......................................................................................................................... 3931
Prakash Parasivamurthi, A. V. Prumod, Veena Jawali, B. V. Kiran Kumar
NOVEL DESIGN APPROACHES FOR SHEAR LOADED FASTENINGS IN CONCRETE
Panaagiotis Spiridis, Andreas Unterweger, Konrad Bergmeister

3941

DESIGN AND CONSTRUCTION OF HIGH STRESSED CONCRETE STRUCTURES AS PROTECTION

WORKS FOR TORRENT CONTROL IN THE AUSTRIAN ALPS
Jurgen Suda, Johannes Hubl, Konrad Bergmeister

3956

SAFETY ASPECTS REEXAMINATION OF EXISTING REINFORCED CONCRETE BRIDGE STRUCTURES
Ane De Boer, Cornelis Van Der Veer

3968

VULNERABILITY OF RC BUILDINGS AND RISK ASSESSMENT FOR CYPRUS
A. Murat Turk, Mustafa Comert, Cumhur Cosgun, M. Gokhan Kesti

3980

TESTING AND MECHANISTIC ANALYSIS OF ANCHORAGES IN CONCRETE CLOSE TO THE EDGE
Ronald Mihala, Anton Rieder, Raimund Hilber, Konrad Bergmeister

3993

SHEAR CAPACITY OF STEEL FIBER REINFORCED CONCRETE BEAMS WITH STIRRUPS
Jan Lingemann, Julia Sauer, Konrad Zilch

4002

SHEAR CAPACITY OF STEEL FIBER REINFORCED CONCRETE BEAMS WITHOUT STIRRUPS
Julia Sauer, Jan Lingemann, Oliver Fischer, Konrad Zilch

4011

APPLICATIONS OF STRESS FIELDS TO ASSESS THE BEHAVIOR AND STRENGTH OF COUPLING BEAMS Subjected TO SEISMIC ACTIONS
Sergio F. Brena, Miguel Fernandez Ruiz, Aurelion Mutoni

4020

STATE OF THE ART POST-TENSIONING FOR NUCLEAR CONTAINMENTS
Jean-Baptiste Donnange, Sebastien Elias, Jean-Marie Laurens

4030

PROBABILISTIC OPTIMIZATION OF DESIGN FOR CRACKING
Milan Holicky

4042

INTEGRATIVE DESIGN AND ASSESSMENT OF CONCRETE STRUCTURES BASED ON INSPECTION- AND MONITORING INFORMATION
Alfred Strauss, Konrad Bergmeister

4052

GROUPS OF ANCHORAGES CLOSE TO THE EDGE UNDER OBLIQUE LOADING
Stefan Lachinger, Panaagiotis Spiridis, Andreas Unterweger, Konrad Bergmeister

4064

DEVELOPMENT OF DESIGN METHOD FOR CONCRETE FILLED STEEL BOX (CFSB) FOOTING
Muhammad Ann Bashir, Tamon Ueda, Hitoshi Furuchi

4078

COMPARISON OF CFRP STRENGTHENING EFFICIENCY OF BENT RC ELEMENTS USING STIFF AND FLEXIBLE ADHESIVES
Wit Derkowski, Arkadiusz Kwiecien, Boguslaw Zajac

4090

TENSILE CAPACITY OF HEADED STUDS AS A FUNCTION OF CONCRETE TENSILE STRENGTH
Marcus L. Knight

4102

DEVELOPING STANDARDIZED GUIDELINES FOR SAFETY ASSESSMENT OF SHEAR-CRITICAL RC BEAMS BASED ON NONLINEAR FINITE ELEMENT MODELING
Beatrice Belletti, Max A. N. Hendriks, Joop A. Don Uijl, Cecilia Damoni

4118

FAILURE MODE OF FATIGUE BREAK BY DETECTION OF MICRO CRACKS
Andreas Unterweger, Ronald Mihala, Panaagiotis Spiridis, Konrad Bergmeister

4132

EFFECTIVENESS OF CONFINEMENT FOR STRESS LOCALIZATION AT FREE EDGES OF FRP WRAPS
Alberto Zinno, Gian Piero Lignola, Andrea Prota, Gaetano Manfredi, Edoardo Cosenza

4139

SHEAR CAPACITY OF 50 YEARS OLD REINFORCED CONCRETE BRIDGE DECK WITHOUT SHEAR REINFORCEMENT
Yuguang Yang, Joop A. Don Uijl, Gerrie Dieteren, Ane De Boer

4149

POST-TENSIONED CONCRETE FLAT SLABS WITH SHEAR REINFORCEMENT IN PUNCHING SHEAR
Alexandra L. Carvalho, Guilherme S. Melo, Ronaldo B. Gomes

4161

EXPERIMENTAL ANALYSIS OF REINFORCED CONCRETE PRESHAPED BEAMS UNDER FLEXURE
Denio Ramam Carcalho De Oliveira, Jose Guiherme Silva Melo

4169

SEISMIC PERFORMANCE OF PRECAST RC WALL PANELS WITH CUT-OUT OPENINGS RETROFITTED BY EXTERNALLY BONDED CFRP COMPOSITES
Issvan Demeter, Tamaz Nagy-Gyorgy, Valeriu Stoian, Cosmin A. Daescu, Daniel Dan

4175

INCREASING SEISMIC CAPACITY OF EXISTING REINFORCED CONCRETE BUILDINGS BY THE USE OF FRP AND STEEL FUSE ELEMENTS
A. Murat Turk, Mustafa Comert, Cumhur Cosgun, M. Gokhan Kesti

4183

SIMPLIFIED ASSESSMENT OF BENDING MOMENT CAPACITY FOR RC MEMBERS WITH CIRCULAR CROSS-SECTION
Edoardo Cosenza, Carmine Galasso, Giuseppe Maddaloni

4195

STATISTICAL ANALYSIS OF CLIMATIC TEMPERATURE VARIATIONS IN A RC BUILDING SLAB
Eduardo Cosenza, Carmine Galasso, Giuseppe Maddaloni

4206

DESIGN CONCEPT FOR BUTT-JOINTED IN-SITU CONCRETE COLUMNS ACCORDING TO EUROCODE 2
Jens Münther, Markus Blatt

4215

THE COMPREHENSIVE CRACK-RESISTING METHOD FOR SUPER-LONG PRESTRESSED CONCRETE STRUCTURES
Dabin Feng, Jianlin Nan

4227

PRECAST ULTRA HIGH PERFORMANCE FIBRE REINFORCED CONCRETE REPLACES STONE AND GRANITE ON BUILDING FAÇADE
Gamal Ghoneim, Raafat El-Hacha, Gerald Carson, Don Zabariasen

4237

EXPERIENCES FROM L’AQUILA 2009 EARTHQUAKE
Marco Menegotto

4252
CONCRETE STRUCTURES OF THE "OLYMPIYSKIY" NATIONAL SPORTS COMPLEX IN KIEV ..................................................4261
Yuriy Slyusarenko, Petro Kryvsheyes, Yuriy Serjojin, Igor Kazynkin
THE EVALUATION OF BRIDGES RESPONSE UNDER A SPATIALLY VARYING GROUND MOTION .................................................4270
Alessio Lupoi
COMPLEX INVESTIGATIONS OF HIGH-STRENGTH CONCRETES FOR CAST-IN-SITU CONSTRUCTION OF MASSIVE STRUCTURES, ROADWAY AND AIRFIELD COVERINGS ........................................4286
Iuri I. Nemichavrov, Grzegorz G. Girshtein
DEBONDING ON CONCRETE MEMBERS OF LAMINATES AND NSM FRP SYSTEMS ..........................................................4292
Antonio Biliauro, Francesco Aceroni, Marco Di Ludovico, Emidio Nigro, Maria Rosaria Pecce
A SIMPLIFIED DESIGN FORMULA FOR INTERMEDIATE DEBONDING FAILURE IN RC BEAMS EXTERNALLY STRENGTHENED BY FRP ..................................................................................................................4304
Ciro Faella, Enzo Martellini, Emidio Nigro
PRESTRESSED CONCRETE OIL TANKS ...........................................................4323
Jan L. Vitek, Jiri Strasky, Milos Zich, Pavel Kral
COULD WE HAVE UNIFIED CODES ON FUTURE METEOROLOGIC ACTIONS FOR CONCRETE STRUCTURES? .................................................................4334
Rachid Annan, Adrian Gnagi
MATERIALS

COMBINED ACID AND SULFATE ATTACK ON CONCRETE DUE TO OXIDATION OF SULFIDE MINERALS IN THE CONSTRUCTION GROUND ..........................................................4351
Emmanuel Amoros, D. F. Buehner, B. Bohn Siebert

BOND STRENGTH AND RIB GEOMETRY: A COMPARATIVE STUDY OF THE INFLUENCE OF DEFORMATION PATTERNS ON ANCHORAGE BOND STRENGTH ........................................4374
Michel S. Lorrier, Luciane F. Casetano, Bruno V. Silva, Lara E. S. Gomez, Monica P. Barbosa, Luiz Carlos P. Silva Filho

CRACKING IN FRC R/C ELEMENTS: A PRELIMINARY EXPERIMENTAL STUDY .........................................................4386
Fausto Minelli, Giuseppe Tisberti, Giovanni A. Pizzari

EFFECTS OF USING NON-FRESH WATER ON THE MECHANICAL PROPERTIES OF CEMENT MORTARS AND CONCRETE .................................................................4398
Khalid S. Al-Jabri, Ramzi Abd Taha, Abdullah H. Al-Saidy

POSSIBILITIES AND LIMITATIONS REGARDING THE APPLICATION OF CEMENTS WITH THE MAIN CONSTITUENTS LIMESTONE, GRANULATED BLASTFURNACE SLAG AND FLY ASH ...........................................................................................................4408
Christoph Muller, Kathleen Severini

INFLUENCE OF TEST METHODS ON EVALUATION OF CONCRETE PERMEABILITY ..................................................4420
Fangqun Lang, Wei Dong, Xiankun Jl, Jing Wang, Yongxiang Zhou, Gengxin He

TOWARDS A TAILORED STRESS-STRAIN BEHAVIOR FOR FRP CONFINED LOW STRENGTH CONCRETE .................................................................4432
Mustafa Comert, Caglar Goksu, Alper Ilki

STUDY ON CHLORIDE PENETRATION AND DIFFUSIVITY IN TERNARY BINDER CONCRETE .................................................4441
B. N. Krishnamwami, P. Natarajan

FAIR-FACED CONCRETE – POSSIBLE CAUSES FOR DISCOLORATIONS ..................................................................................4453
Josef Rickert

DETERMINATION OF THE RHEOLOGICAL CHARACTERISTICS OF SELF-COMPACTING CONCRETE AT DIFFERENT TEMPERATURES ..................................................4471
Daniele Waldmann, Sandro Weisheit

EXPERIMENTAL STUDY ON THE SHORT-TERM STIFFNESS FOR PPC BEAMS WITH FRP TENDONS ........................................4482
Luxiang Meng, Xuekang Tao

DUCTILITY EVALUATION OF UHCC REINFORCED STRUCTURAL MEMBERS ..........................................................4490
X. F. Zhang, S. L. Xu

FLEXURAL CHARACTERISTICS OF ULTRAHIGH TOUGHNESS CEMENTITIOUS COMPOSITE BEAMS WITH DIFFERENT DEPTHS ..........................................................................................................................4499
Shilang Xu, Lijun Hou, Xufang Zhang

STRUCTURAL RELIABILITY EVALUATION OF PC BRIDGES IN SEVERE CHLORIDE ENVIRONMENT ........................................4508
Tomoichige Kamatani, Hitoshi Morikawa

EXPERIMENTAL ANALYSIS ON SPALLING OF HIGH-STRENGTH CONCRETE ..................................................................................4521
Elke W. Klingisch, Andrea Frangi, Mario Fontana

CORROSION PROPERTIES OF PRESTRESSING STEEL WITH RESIDUAL AIR VOID IN GROUT ........................................................................4542
Shoji Nojima, Suguru Tokumitsu, Kyoji Nitani, Toyoaki Miyagawa

COMPARISON OF THE STRAIN-SOFTENING BEHAVIOUR OF CONVENTIONAL VIBRATED CONCRETE AND SELF-COMPACTING CONCRETE ........................................4554
Pieter Desnerck, Geert De Schutter, Luc Taeore
HIGH PERFORMANCE COMPOSITE TEXTILE REINFORCED CONCRETE – DEFINITIONS, PROPERTIES AND APPLICATIONS ................................................................. Frank Jesse, Dirk Jesse

ENHANCED STRUCTURAL PERFORMANCE AND CONSTRUCTABILITY OF PRESTRESSED CONCRETE BEAMS THROUGH THE USE OF STEEL FIBERS ......................................................... Shih-Ho Chao, Jae-Sung Cho, Netra B. Karki, Joe Lundy

HIGH PERFORMANCE SELF-CONSOLIDATING CONCRETE WITH LOW ENVIRONMENTAL IMPACT ................................................................. Tobias Azvedo Da Costa Pereira, Jefferson Benedicto Libardi Liborio

STUDY OF STRENGTH, MODULUS OF ELASTICITY, ELECTRICAL RESISTIVITY AND CONDUCTIVITY OF SOIL-CEMENT MIXTURE ................................................................. Manish Pal, Parthiva Pratim Sarkar, Dipankar Sarkar, Kaberi Majumdar

DURABILITY STUDY OF HOT-DIP GALVANISED REINFORCEMENT BARS IN CARBONATED AND CHLORIDE-CONTAMINATED CONCRETE ............................................................... Esko F. P. Sistonen, Jari A. Puttonen

FRACTURE CRITERION FOR ALL CONCRETES – NORMAL, LIGHTWEIGHT, HIGH- AND ULTRA-HIGH-PERFORMANCE CONCRETE ................................................................. Kerstin Speck, Manfred Curbach

SHEAR TRANSFER CAPACITY ALONG VIBRATED AND SELF-COMPACTING CONCRETE INTERFACES ......................................................................................................................... Catherine G. Papanicolaou, Vassiliki Vassiliopoulou

A QUALITATIVE MODEL FOR THE ACTION OF SHRINKAGE-REDUCING ADMIXTURES IN HARDENED CEMENT PASTE ........................................................................................................ Patrick Schaffel

ARTIFICIAL NEURAL NETWORK MODELING OF COMpressive STRENGTH AND MODULUS OF ELASTICITY FOR ORDINARY AND HIGH-STRENGTH NORMAL AND SEMI-LIGHTWEIGHT CONCRETES ......................................................................................................................... Amir Tarighat, Khaled Khaledi

USE OF ALTERNATIVE REINFORCEMENT MATERIALS TO ENHANCE DURABILITY ................................................................................................................................. Andrea Mercalli, Livia Pardi, Ramiert Cigna

SPACERS FOR ELEMENTS MADE OF TEXTILE REINFORCED CONCRETE ................................................................................................................................. Ilio Hartung, Stefan Bohm, Klaus Dilger, Rebecca Matt, Wolfgang Brameshuber

TOWARDS A STANDARD PULL-OUT TEST SPECIMEN: GEOMETRICAL SPECIFICATIONS ............................................................................................................................. Moncef Makni, Aref Daoud, Mohamed Ali Karray, Michel Lorrain

EFFECT OF BLAST FURNACE SLAG ON THE STRENGTH DEVELOPMENT OF CONCRETE ................................................................................................................................. Oktan Sengul, Odd E. Gjørv

WHICH CONCRETE COMPOSITION MAKES EXCELLENT ATTRACTIVE CONCRETE SURFACES? ................................................................................................................................. Ludger Lohaus, Karen Fischer

MODIFIED TESTING PROCEDURE FOR GROUND WATER ......................................................................................................................................................... Vijay T. Ganpule

VOLUME 6


CORRELATION OF COMpressive STRENGTH WITH Ultrasonic PULSE VELOCITY IN CONCRETE: EFFECT OF PASTE VOLUME, MATRIX MODIFICATION, AND AGE OF TEST ................................................................................................................................. Shashi S. Markande, Santhi Das

AUTGENOUS SHRINKAGE OF MORTAR AT VERyearly AGE: EFFECT OF RECYCLED AGGREGATES: EFFECT OF RECYCLED AGGREGATES ................................................................................................................................. Assia Djorbi, Tien Dung Nguyen, Sandrine Ramanich

CHARACTERISTICS OF CONCRETE CONTAINING FLY ASH WITH HG-ADSORBENT: PRELIMINARY RESULTS ................................................................................................................................. Mehrdad Mahoutian, Vivek Bindiganaville, Adam Lubell

DESTRUCTIVE FACTORS CAUSING DETERIORATION OF COATINGS ON BUILDINGS WALLS ................................................................................................................................. Bata Ministeate

TIME-DEPENDENT DEFORMATIONS OF PRETENSIONED, SELF-CONSOLIDATING CONCRETE ................................................................................................................................. Kelly R. Levy, Robert W. Barnes, Anton K. Schinder

TEXTILE REINFORCED CONCRETE (TRC) FOR STRENGTHENING OF RC STRUCTURES - REPORT OF A PRACTICAL APPLICATION ................................................................................................................................. Frank Schluditz

DUCTILITY OF FIBER-REINFORCED CONCRETE IN COMPRESSION ................................................................................................................................. Bernardino Chiara, Alessandro P. Fantilli, Paolo Vallini

RC SLABS WITH TEXTILE REINFORCED CONCRETE (TRC) UNDER FIRE LOADING ................................................................................................................................. Daniel Ehlig, Frank Jesse, Manfred Curbach

EFFECTS OF MINERAL ADMIXTURES ON COMpressive STRENGTH AND RAPID CHLORIDE PERMEABILITY OF MORTARS ................................................................................................................................. Hasun Yildirim, Omer Yilmaz, Oktan Sengul

LENUS GROUP, VOLUME 6 – 4528–4859

INDEX TO VOLUME 6
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAILURE OF BEAMS RETROFITTED WITH NEAR SURFACE MOUNTED FRP REINFORCEMENT: EXPERIMENTAL WORK</td>
<td>4867</td>
</tr>
<tr>
<td>USE OF WATER DEMAND AND CONSISTENCY PREDICTION MODELS AS STEERING ELEMENTS FOR THE PRODUCTION OF CONCRETE</td>
<td>4877</td>
</tr>
<tr>
<td>RELIABLE SHRINKAGE AND CRACK DESIGN: CEOS.FR FRENCH NATIONAL RESEARCH PROGRAM, EXPERIMENTAL ASPECTS</td>
<td>4888</td>
</tr>
<tr>
<td>FRP-ENCLOSED SELF-PRESTRESSED CONCRETE BEAMS – DEVELOPMENT OF OPTIMIZED SHRINKAGE-COMPENSATING CONCRETE</td>
<td>4902</td>
</tr>
<tr>
<td>EFFECT OF CURING CONDITIONS ON MECHANICAL PROPERTIES OF LIGHT-WEIGHT SELF CONSOLIDATING CONCRETE</td>
<td>4913</td>
</tr>
<tr>
<td>CORROSION OF REINFORCING STEEL IN STRAIN HARDENING FIBER REINFORCED CEMENTITIOUS COMPOSITES</td>
<td>4922</td>
</tr>
<tr>
<td>CORROSION PROPERTIES OF HIGH STRENGTH STAINLESS STEELS IN VIEW OF A USE AS PRESTRESSING STEEL</td>
<td>4936</td>
</tr>
<tr>
<td>COMPARATIVE PERFORMANCE OF BEAMS USING GFRP AND STEEL REINFORCEMENTS</td>
<td>4951</td>
</tr>
<tr>
<td>FIB-RECOMMENDATION ‘STRUCTURAL DESIGN WITH FLOWABLE CONCRETE’</td>
<td>4961</td>
</tr>
<tr>
<td>CONCRETE AT HIGH TEMPERATURES</td>
<td>4971</td>
</tr>
<tr>
<td>FOUR-LAYERED SANDWICH PANELS WITH GFRP-CONNECTORS</td>
<td>4988</td>
</tr>
<tr>
<td>ESTIMATION OF CREEP COEFFICIENT IN CONCRETE STRUCTURES USING THE MEASURED DISPLACEMENTS</td>
<td>4998</td>
</tr>
<tr>
<td>EFFECT OF COMPOSITE MATERIAL CONFINEMENT ON BOND STRENGTH BETWEEN LAP-SPliced BARS AND CONCRETE</td>
<td>5008</td>
</tr>
<tr>
<td>A DISCUSSION ABOUT EXISTENT STANDARDS AND PROCEEDINGS TO THE ACCOMPLISHMENT OF ELECTRICAL RESISTIVITY TESTS IN CONCRETE</td>
<td>5025</td>
</tr>
<tr>
<td>ANALYTICAL ESTIMATION OF THE BOND EFFICIENCY OF VARIOUS RIB PATTERN REINFORCING BARS WITH ACCOUNT OF CONCRETE STRENGTH</td>
<td>5038</td>
</tr>
<tr>
<td>DURABLE METHODS FOR CORROSION CONTROL ON REINFORCED CONCRETE OF TORRE VELASCA IN MILAN</td>
<td>5051</td>
</tr>
<tr>
<td>EFFECTS OF SUSTAINED LOAD AND LOW TEMPERATURE ON CONCRETE GIRDERSTRESSED USING CARBON FIBER-REINFORCED POLYMER (CFRP) RODS</td>
<td>5065</td>
</tr>
<tr>
<td>AN EXPERIMENTAL INVESTIGATION ON GLASS FIBRE REINFORCED HIGH PERFORMANCE CONCRETE WITH METAKAOLIN AS ADMIXTURE</td>
<td>5076</td>
</tr>
<tr>
<td>SPECIFYING ARCHITECTURAL CONCRETE FOR SUSTAINABLE DEVELOPMENT</td>
<td>5084</td>
</tr>
<tr>
<td>MECHANICAL PROPERTIES OF PRESTRESSING STEEL AT HIGH TEMPERATURE</td>
<td>5095</td>
</tr>
<tr>
<td>EFFECT OF CURING ON THE DURABILITY OF EXPOSED AGGREGATE PAVEMENT</td>
<td>5108</td>
</tr>
<tr>
<td>DURABILITY OF PAVEMENTS CONCRETE MADE WITH FLY ASH</td>
<td>5120</td>
</tr>
<tr>
<td>CONCRETE COVER: THE OFTEN FORGOTTEN DEFENSIVE LINE</td>
<td>5129</td>
</tr>
<tr>
<td>STRENGTHENING WITH NEAR SURFACE MOUNTED REINFORCEMENT: STRUCTURAL AND FIRE BEHAVIOR</td>
<td>5137</td>
</tr>
<tr>
<td>BOND OF DEFORMED REINFORCEMENT OVER DIRECT SUPPORT IN PLAIN AND FIBER REINFORCED NSC AND HSC</td>
<td>5147</td>
</tr>
<tr>
<td>WATER PERMEABILITY OF SELF COMPACTING CONCRETE</td>
<td>5155</td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Flexural Response of Lightly Reinforced Ultra-High Performance Concrete Beams</td>
<td>5470</td>
</tr>
<tr>
<td>Effect of Composition and Curing on Microstructure of UHPC</td>
<td>5487</td>
</tr>
<tr>
<td>Durability of Ultra-High Performance Concrete (UHPC)</td>
<td>5506</td>
</tr>
<tr>
<td>Pozzolanic Reaction of Silica Fume in Ultra-High Performance Concrete</td>
<td>5520</td>
</tr>
<tr>
<td>Failure Models for Ultra High Performance Concrete (UHPC)</td>
<td>5533</td>
</tr>
<tr>
<td>Influence of Reinforcement Ratio on Performances of RUHTCC Flexural Members</td>
<td>5544</td>
</tr>
<tr>
<td>Time-Dependent Behaviour of Ultra High Performance Concrete (UHPC)</td>
<td>5556</td>
</tr>
<tr>
<td>Prediction of Ultra High Performance Concrete Creep and Shrinkage – The Role of Heat Treatment</td>
<td>5571</td>
</tr>
<tr>
<td>Pretensioned UHPC Beams With and Without Openings</td>
<td>5579</td>
</tr>
<tr>
<td>Testing of UHPC</td>
<td>5589</td>
</tr>
<tr>
<td>Triaxial Fatigue Behaviour of Ultra High Performance Concrete (UHPC)</td>
<td>5600</td>
</tr>
<tr>
<td>Cracking Behaviour of Ultra-High Performance Fiber-Reinforced Concrete: Effects of Thermal Damage</td>
<td>5610</td>
</tr>
<tr>
<td>Concrete Columns – New Possibilities from NPC up to UHPC</td>
<td>5622</td>
</tr>
<tr>
<td>Investigations on Embedded Shear Connectors for Lightweight Composite Structures</td>
<td>5632</td>
</tr>
<tr>
<td>UHPC with Micro-Reinforcement</td>
<td>5643</td>
</tr>
<tr>
<td>A Study on Environmental Conscious Concrete with a Full Range of Secondary Byproducts Powder for Resource Conservation in Japan</td>
<td>5656</td>
</tr>
<tr>
<td>Effect of Autogenous Shrinkage Before Prestressing on Prestress Loss of Pretensioned Prestressed Concrete Beams</td>
<td>5666</td>
</tr>
<tr>
<td>Sustainable Building with Ultra-High-Performance Concrete (UHPC) – Coordinated Research Program in Germany</td>
<td>5677</td>
</tr>
<tr>
<td>Design and Construction with Ultra-High-Performance Concrete</td>
<td>5689</td>
</tr>
</tbody>
</table>

Author Index