



American Concrete Institute
Always advancing



Spring 2018 | Salt Lake City

The Concrete Convention and Exposition

March 24-28 2018

ACI International Forum

ACI Italy Chapter

Paolo Casadei, Member of the Board of Directors*

* Product Manager Structural Strengthening Division at KERAKOLL Group

ABOUT ACI ITALY CHAPTER (1)

- **ACI Italy Chapter is among the 100+ chapters**, equally subdivided between USA and abroad (26 in Canada and Latin America, 8 in Europe and 18 in Asia)
- ACI Italy Chapter was funded in 2003 by **Professors Antonio Nanni (University of Miami, FL, USA) and Mario Alberto Chiorino (Politecnico di Torino, Italy)**, now Honorary President of the Chapter
- There are **15 members in the Board**, 50% from the academy and 50% from the industry and design bureaus, beside the President
- The members of ACI I.C. are about **100**, among them **5 supporting members from the industry** (BASF Italia, Heidelberg-Calcestruzzi-Italcementi Group, General Admixtures, Kerakoll and Buzzi Group)
- **Roughly 20% of the members are young members** (fresh from PhD studies, PhD candidates and associate researchers)

ABOUT ACI ITALY CHAPTER (2)

PRESIDENT, ROBERTO REALFONZO - Associate Professor, University of Salerno, Dept. of Civil Engineering

VICE PRESIDENT, PAOLO RIVA - Full Professor. University of Bergamo, Dept. of Engineering and Applied Science

HONORARY PRESIDENT, MARIO ALBERTO CHIORINO - Professor Emeritus, Politecnico di Torino, Dept. of Structural, Building and Geotechnical Engineering

DIRECTORS:

Marco Bressan, Engineer - General Admixtures S.p.A.

Paolo Casadei, Product Manager Structural Strengthening Division - Kerakoll Group

Luigi Coppola, Associate Professor - University of Bergamo, Dept. of Engineering and Applied Science

Ciro Faella, Full Professor - University of Salerno, Dept. of Civil Engineering

Liberato Ferrara, Associate Professor - Politecnico di Milano, Dept. of Civil and Environmental Engineering

Marco Francini, Head of Technology and Research & Development – Buzzi Unicem S.p.A

Pietro Gambarova, Professor Emeritus - Politecnico di Milano, Dept. of Civil and Environmental Engineering

Gennaro Magliulo, Assistant Professor - University of Naples, Dept. of Structures for Engineering and Architecture

Emidio Nigro, Full Professor - University of Naples, Dept. of Structures for Engineering and Architecture

Francesco Santonicola, Laboratory Manager - Calcestruzzi S.p.A

Giuseppe Schlitzer, Manager - Federbeton

Ivana Torresan, Segment manager Admixtures and Cement Additives - BASF Construction Chemicals Italia Spa

ABOUT ACI ITALY CHAPTER (3)

- **Initiatives at the national level**

Awards to PhD dissertations concerning structural and nonstructural cementitious materials, and R/C-P/C constructions

- **Initiatives at the national/international level**

Workshops on «New Boundaries of Structural Concrete» (2010, Salerno; 2011, Ancona; 2013, Bergamo; 2016, Capri – Naples; 2019, Politecnico di Milano)

- **Initiatives at the international level**

Workshops on «Durability and Sustainability of Concrete Structures» (2015, Bologna – Italy; 2018, Moscow – Russia)

- **Participation at international conventions**

XIII Convención Internacional ACI Perú 2017 on «Evaluación, Reparación y Rehabilitación de Estructuras de Concreto y Albañilería» (2017, Cusco – Perú)

- **Training Initiatives**

Professional courses for building-site and laboratory technicians

PhD Student Awards 2014 and 2016



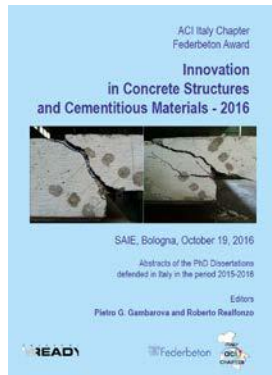
First Edition

Innovation in Concrete Structures and Cementitious Materials

⇒ 27 dissertations (2012-14)

SAIE – Building and Construction

Exhibition 2014 (Bologna, Italy, October 23, 2014)



Second Edition

Innovation in Concrete Structures and Cementitious Materials 2016

⇒ 29 dissertations (2015-16)

SAIE – Building and Construction

Exhibition 2016 (Bologna, Italy – October 19, 2016)



Three awards offered by Federbeton – Italian Federation of Cement Producers, under the supervision of ACI Italy Chapter

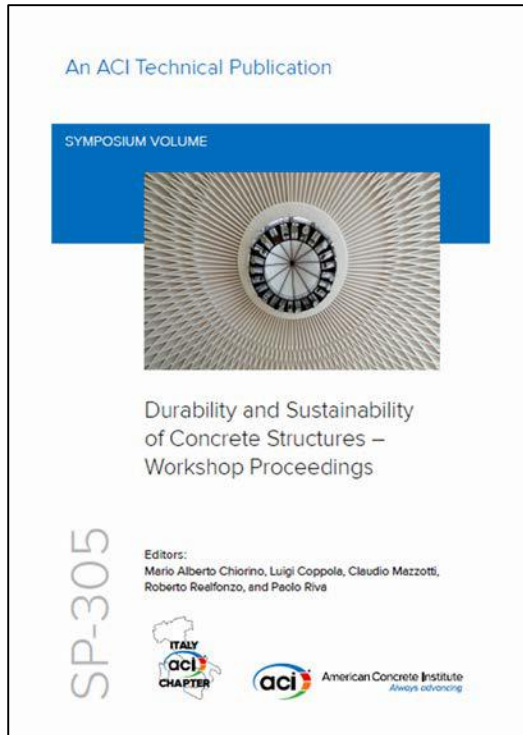
Proceedings edited by:

Roberto Realfonzo – President of ACI Italy Chapter and

Pietro G. Gambarova – Member of the Board

1st Int. Workshop DSCS 2015 (1)

First edition of the workshop on
Durability and Sustainability of Concrete Structures
Bologna (Italy) – October 3, 2015



The workshop was jointly organized by **ACI Italy Chapter** and by the Dept. of Civil, Chemical, Environmental and Materials Engineering of the **University of Bologna**, under the auspices of **ACI Committee 201 (Proc. in ACI SP 305)**

1st Int. Workshop DSCS 2015 (2)

Keynote Lectures:

From the "old" to a "new" construction industry-sustainability design of structures

Koji SAKAI - Japan Sustainability Institute

Building toward a sustainable and resilient future

Julie BUFFENBARGER – Lafarge

New trends in service life design

Giuseppe MANCINI - Department of Structural, Geotechnical and Building Engineering, Politecnico di Torino

Prediction of service life of reinforced concrete by considering the initiation and the propagation periods

Carmen ANDRADE PERDIX - Institute of Construction Sciences “Eduardo Torroja” - CSIC

Structural Concrete in the Epoch of Sustainable Development

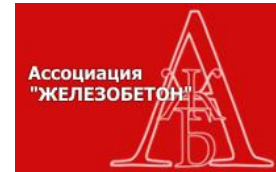
Vyacheslav FALIKMAN - Moscow State University of Civil Engineering (MSUCE)

Durability of concrete subjected to high temperature fields: continuum and discrete constitutive approaches

Guillermo ETSE - CONICET, National University of Tucuman

2nd Int. Workshop DSCS 2018 (1)

The workshop is organized by the **American Concrete Institute Italy Chapter** and the **Russian Engineering Academy** with the assistance of the *Russian Academy of Sciences* and the *Russian Academy of Architecture and Construction Science*.



The Workshop is co-sponsored by:

- American Concrete Institute and its Committees: C130 (Sustainability of Concrete), C201 (Durability of Concrete), C446 (Fracture Mechanics of Concrete - Joint ACI/ASCE), C544 (Fiber Reinforced Concrete), C549 (Thin Reinforced Cementitious Products and Ferrocement)
- fib (Federation for Structural Concrete)
- RILEM (International union of laboratories and experts in construction materials, systems and structures)



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The Workshop is included in the **ACI Ambassador Program**

The Workshop will take place on 6-7 June 2018, at Izmailovo Congress Centre, Moscow

2nd Int. Workshop DSCS 2018 (2)

Organizing Committee

V. Falikman, Chair (Russia)
R. Realfonzo, Chair (Italy)
L. Coppola (Italy)
P. Hájek (Czech Republic)
P. Riva (Italy)

Local Organizing Committee

B. V. Gusev, (Chair)
A. I. Zvezdov
V. F. Stepanova
L. S. Barinova
Y. I. Kuznetsov
M. E. Leybman
V. I. Travush
A. Davidyuk

Honor Committee

M.A. Chiorino (Italy)
M. Collepari (Italy)
B. V. Gusev (Russia)
K. Sakai (Japan)
S. P. Shah (USA)

Around 150 submitted papers

The full papers will be collected in an ACI Special Publication

2nd Int. Workshop DSCS 2018 (3)

Tentative Program

June 6th, 2017

08:30	09:00	Registration
09:00	09:30	Opening welcome
09:30	10:00	Keynote Lecture - N. Banthia
10:00	11:30	Parallel Sessions
11:30	12:00	<i>Coffee break</i>
12:00	13:30	Parallel Sessions
13:30	14:30	<i>Lunch break</i>
14:30	15:00	Keynote Lecture - H. Muller
15:00	16:30	Parallel Sessions
16:30	17:00	<i>Coffee break</i>
17:00	18:30	Parallel Sessions

June 7th, 2017

08:30	09:00	Keynote Lecture - R. Gettu
09:00	09:30	Keynote Lecture - S. Shah
09:30	11:00	Parallel Sessions
11:00	11:30	<i>Coffee break</i>
11:30	13:00	Parallel Sessions
13:00	14:00	<i>Lunch break</i>
14:00	14:30	Keynote Lecture - D. Hooton
14:30	16:00	Parallel Sessions
16:00	16:30	<i>Coffee break</i>
16:30	18:00	Parallel Sessions
18:00	18:30	Conclusion

11 sessions on DURABILITY

10 sessions on SUSTAINABILITY

2 sessions on FRC

3 sessions on RETROFIT

3 sessions on RECYCLE

Other topics

2nd Int. Workshop DSCS 2018 (4)

Keynote Lectures:

Bio-Inspired Fiber Reinforced Concrete for the Next Generation Sustainable, Smart and Sleek Infrastructure

Nemkumar (Nemy) BANTHIA - Canada India Research Center of Excellence – [ACI Ambassador Speaker](#)

Considerations of sustainability in the mixture proportioning of concrete for strength and durability

Ravindra GETTU - Industrial Consultancy & Sponsored Research Indian Institute of Technology Madras, India

Performance-based Concrete Design for Durability and Sustainability

R. Doug HOOTON - Chair of ACI Subcommittee 130-A, Secretary of ACI Committee 201, Durability of Concrete

Design approach and properties of a new generation of sustainable structural concretes

Harald S. MÜLLER - Immediate Past President of the International Federation for Structural Concrete

Nano-Engineered Meta Cement-Based Materials and Durability

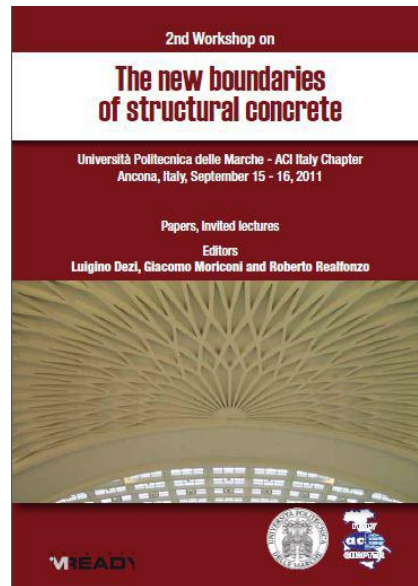
Surendra P. SHAH - Center for Advanced Cement Based Materials Northwestern University Evanston, USA

1st, 2nd, 3rd, 4th Nat. Workshops NBSC (1)

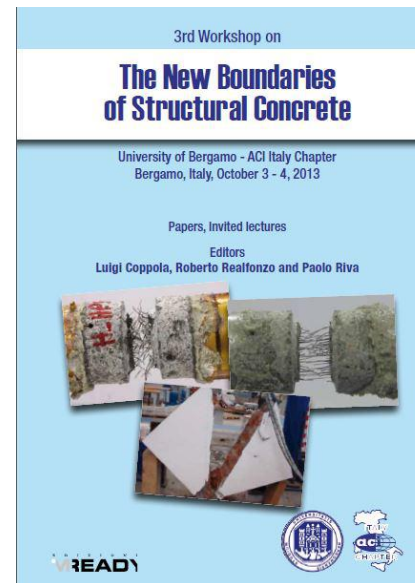
New Boundaries of Structural Concrete



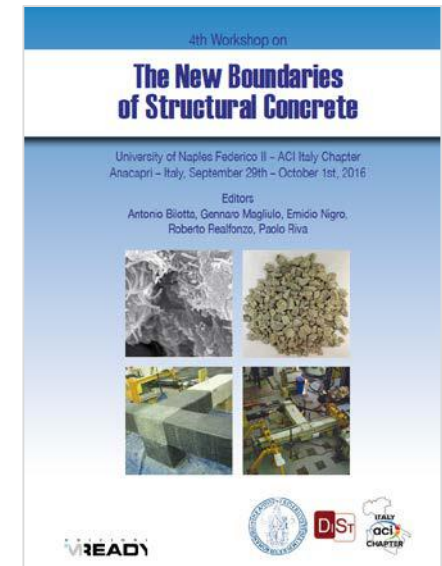
First edition
Salerno, April 2010



Second edition
Ancona, September 2011



Third edition
Bergamo, October 2013



Fourth edition
Anacapri, October 2016

1st, 2nd, 3rd, 4th Nat. Workshops NBSC (2)

New Boundaries of Structural Concrete

Among the others, the workshop deals with **the following topics:**

- Performance and life-cycle costs of new concrete structures
- Controlled-performance concrete
- New scenarios for concrete
- On-site quality control of concrete
- Innovative strengthening systems for concrete structures
- Ultra High-Strength Concretes: ongoing projects and recent achievements

Future edition: Politecnico di Milano, September 2019

Abstract Submission Deadline: January 15, 2019

ACI Excellence in Concrete Award

In the Spring 2016, ACI - Italy Chapter proposed the candidacy of Palazzo Italia (Italian Pavilion at the Expo 2015, Milan) to the second edition of ACI Excellence in Concrete Construction Award - Category “Decorative Concrete” (Philadelphia, USA, October 25, 2016). Palazzo Italia got both the first award in the category Decorative Concrete and the Excellence in Concrete Construction Award (25/11/2016)



Construction Team Members

Owner: Expo 2015 Co.

Architectural Firm: Nemesi & Partners Ltd

Engineering Firm: Bms Progetti Ltd and Proger Co.

General Contractor: Italiana Costruzioni Ltd

Concrete Contractor: Styl-Comp Ltd

Cement Supplier: Italcementi Group



Michael J. Schneider

« [...] The project visit was very memorable. The structure is way more impressive in person than in pictures. Its award is certainly well deserved.»

Concrete International – October 2017



XIII Convención Internacional ACI Perú

ACI Italy Chapter has recently participated to the XIII International Convention organized by ACI Perú. The Convention dealt with the **Rehabilitation of Historical and Current Buildings of Concrete and Masonry**



ACI Certification Courses (1)

ACI Italy Chapter is the only European chapter recognized by ACI to certify (by means of on-line courses, laboratory tests and exams):



First-level technicians for concrete testing on site

- Required skills: *mastery of the experimental procedures and paperwork related to testing cementitious materials at the fresh state (7 basic tests).*

Concrete Construction Specialized Inspector – CCSI certificate

- Required skills: *mastery of the procedures, operations and documents required to certify the inspections on R/C buildings according to the ongoing technical and safety norms .*

ACI Certification Courses (2)

Concrete Field Testing Technician Grade I

Module	Section	Laboratory	Topics	Module	Section	Laboratory	Topics	
1	Foundamentals on concrete - Part 1	1.1	Introduction and ingredients (cementitious materials, water, aggregates, chemical admixtures, fibers) Properties (workability, time of setting, heat of hydration) Properties (strength, resistance to freezing and thawing, permeability)	6	ASTM C231	YES	6.1	Air content of freshly mixed concrete by the pressure method - Significance and apparatus
		1.2					6.2	Air content of freshly mixed concrete by the pressure method - Procedure and calculation
		1.3					6.3	Air content of freshly mixed concrete by the pressure method - Example
2	Foundamentals on concrete - Part 2	2.1	Before construction (selection of properties and materials, mix design) Construction (mixing, transporting, placing, finishing, curing and protection) Durability and maintenance	7	ASTM C173	YES	7.1	Air content of freshly mixed concrete by the volumetric method - Significance and apparatus
		2.2					7.2	Air content of freshly mixed concrete by the volumetric method - Procedure and calculation
		2.3					7.3	Air content of freshly mixed concrete by the volumetric method - Example
3	ASTM C1064 ASTM C172	3.1	Temperature of freshly mixed hydraulic-cement concrete - Significance and apparatus Temperature of freshly mixed hydraulic-cement concrete - Procedure and example Sampling freshly mixed concrete - Scope, procedure and example	8	ASTM C31	YES	8.1	Making and curing concrete test specimens in the field - Apparatus
		3.2					8.2	Making and curing concrete test specimens in the field - Casting and curing
		3.3					8.3	Making and curing concrete test specimens in the field - Example
4	ASTM C143	4.1	Slump of hydraulic-cement concrete - Significance and apparatus Slump of hydraulic-cement concrete - Procedure and precision Slump of hydraulic-cement concrete - Example	9	ASTM C29	YES	9.1	Bulk density and voids in aggregate - Terminology and apparatus
		4.2					9.2	Bulk density and voids in aggregate - Procedure and calculation
		4.3					9.3	Bulk density and voids in aggregate - Example
5	ASTM C138	5.1	Density, yield and air content (gravimetric) of concrete - Apparatus and procedure Density, yield and air content (gravimetric) of concrete - Calculation Density, yield and air content (gravimetric) of concrete - Example	10	ASTM C94	NO	10.1	Ready-mixed concrete - Materials, ordering information and workability
		5.2					10.2	Ready-mixed concrete - Air-entrained concrete, measuring materials, batching plant and mixing
		5.3					10.3	Ready-mixed concrete - Delivery, test on fresh concrete, mechanical performances

Online lessons will be available for e-learning courses

Thank you for your attention!

www.aciitaly.com

aciitalychapter@gmail.com
