

ACI Foundation Funds Four Research Projects

The ACI Foundation's Concrete Research Council (CRC) approved the funding of four research projects for 2017. Each of the following projects will be awarded a \$50,000 grant:

- "An Experimental Study on the Effect of Wall-Slab Connection Details in Liquid-Containing Structures," Reza Kianoush, Ryerson University, Principal Investigator; supported by ACI Committee 350, Environmental Engineering Concrete Structures; co-funding/industry support by Natural Sciences and Engineering Research Council of Canada (NSERC);
- "Minimizing the Effect of Pumping on SCC Workability and Freeze-Thaw Durability," Dimitri Feys, Missouri S&T, Principal Investigator; supported by ACI Committee 237, Self-Consolidating Concrete; co-funding/industry support by RECAST Tier 1, and the Curators of the University of Missouri (Rolla);
- "Benchmark Tests on Anchoring Columns to Foundations," Jack Moehle, University of California, Berkeley, Principal Investigator; supported by ACI Subcommittee 318-B, Anchorage and Reinforcement; co-funding/industry support by Hilti Aktiengesellschaft and Ron Klemencic of Magnusson Klemencic Associates, Inc.; and
- "Evaluating the Performance and Feasibility of Using Recovered Fly Ash and Fluidized Bed Combustion (FBC) Fly Ash as Concrete Pozzolan," Farshad Rajabipour, Pennsylvania State University, Principal Investigator; supported by ACI Committee 232, Fly Ash in Concrete; co-funding/industry support by Pennsylvania Coal Ash Research Group (PCARG).

Beginning this month, one of the four funded projects will be featured within *Knowledge to Practice*. More information about the ACI Foundation, CRC, and featured projects is available at www.acifoundation.org.

An Experimental Study on the Effect of Wall-Slab Connection Details in Liquid-Containing Structures

Reza Kianoush of Ryerson University will serve as the project's Principal Investigator. The work is supported by ACI Committee 350, Environmental Engineering Concrete Structures.

Concrete liquid-containing structures (CLCS) are primarily used for the storage of water, wastewater, and other industrial wastes. These critical facilities require careful design and detailing to optimize meeting serviceability requirements for crack and leakage control with construction and maintenance costs. There is inconsistency among the design standards of CLCS and debate on the validity of some of the provisions in codes and standards. The inconsistency stems from a lack of



Installation of a concrete water tank

understanding of the behavior of these structures under static and seismic loading.

The main objective of this project is to develop performance criteria for design of CLCS through full-scale experimental investigations. The criteria will be developed to assure safe, leak-resistant structures. The research program involves testing several specimens representing a segment of wall-base slab connection region with different base connection details. It is aimed to establish the response modification factors (R-factors) for these structures and to propose the appropriate types of joints to ensure liquid tightness. The testing will address the development of cracks in the vulnerable regions of CLCS due to hydrostatic and seismic loading. It will also address the crack-leakage potential in CLCS. "The issues concerning the R-factors for CLCS have been the subject of debate at many committee meetings of ACI 350 over the past several years," stated Kianoush. "This study seeks to evaluate these controversial issues to bring clarity and to allow the design community to move forward toward a more rational design approach for CLCS."

The results from this study will be analyzed to make code recommendations to ACI Committee 350, potentially leading to new design standards.

SDC Jean-Claude Roumain Innovation in Concrete Award Nomination Process Opens



Jean-Claude Roumain

The Strategic Development Council (SDC) is now accepting nominations for the Jean-Claude Roumain Award; submissions are due by August 1, 2017. The award is given to an innovator in the concrete industry. The Jean-Claude Roumain Award honors long-time SDC supporter Jean-Claude Roumain, who passed away in 2010. Guidelines, award requirements, and additional

information including the award nomination form can be found under the “About” section of www.concretesdc.org.

committees on Alternative Cementitious Materials and Crack Mitigation will also meet at this forum.

Additional information, including registration information, is available at www.concretesdc.org.

CRC Seeking Nominations for Philleo and Boase Awards

The Robert E. Philleo and Arthur J. Boase Awards are given in recognition of a person or organization for outstanding research in the field of concrete materials (Philleo Award) and in the field of structural concrete (Boase Award). The Philleo Award is given in memory of Robert E. Philleo, an ACI Past President and Honorary Member who was also Chair of the Concrete Materials Research Council, now the CRC. The Boase Award is awarded in memory of Arthur J. Boase, a past Chair of ACI Committee 318, Structural Concrete Building Code, who was the driving force behind the creation of the Reinforced Concrete Research Council in 1948. This council’s work is now also under the auspices of the CRC. The nomination deadline for both awards is August 1, 2017. More information about the awards can be found at www.concreteresearchcouncil.org/awards.

Register for SDC Technology Forum 42

The SDC is hosting its next Technology Forum in Reston, VA, on September 6-7, 2017. Part of the program includes a tour of Turner Fairbanks Highway Research Center, hosted by the Federal Highway Administration (FHWA) Office of Infrastructure Research and Development. The SDC has planned presentations that align with research topics active at the facility, such as alternative cementitious materials and ultra-high strength performance concrete. The event will include technology showcases, highlighting new and innovative equipment, materials, and applications that are or will be available to the concrete industry. SDC

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