Knowledge to Practice:

ACI Foundation

SDC Announces Three New Research Collaborations

In January, the ACI Foundation's Strategic Development Council (SDC) agreed to support three important projects related to high-strength reinforcement, an SDC-identified industry critical technology. As such, the ACI Foundation will co-fund the projects, described herein, along with major sponsor, the Charles Pankow Foundation. The results of the research are needed by both ACI 318 and practicing engineers; as the date will aid in developing future code provisions to benefit the industry. The projects include:

Foundation mats with high-strength reinforcement—Jack Moehle, University of California, Berkeley

The Architecture, Engineering, and Construction (AEC) industry increasingly is using high-strength reinforcement as a means of reducing reinforcing quantities and congestion in thick foundation mats. This research would establish the performance of thick reinforced concrete elements using high-strength reinforcement versus conventional Grade 60 reinforcement and would potentially open the door to its widespread use. The research would also help resolve the issue of whether shear reinforcement is required in thick concrete foundation mats.

Development of large high-strength headed reinforcing bars—David Darwin, University of Kansas

The proposed research builds on recent large-scale studies that have led to the development of proposed modifications to the ACI Building Code that would allow the use of headed bars with yield strengths as high as 120 ksi (827 MPa) in concretes with compressive strengths as high as 16 ksi (110 MPa), a significant extension of the current Code limits of 60 and 6 ksi (414 and 41 MPa), respectively. The proposed research will broaden the application of this important method for anchoring reinforcement, and it will greatly extend the application of high-strength concrete.

Normal- and high-strength continuously wound ties (CWTs)—Bahram Shahrooz, University of Cincinnati

The proposed research is intended to expand the use of CWTs to develop a simpler way to provide one continuous tie and/or hoop configuration in a column or shear wall boundary. This relatively new type of transverse reinforcing hoop is anticipated to provide installation and performance advantages over conventional hoops. Such benefits will become particularly advantageous if CWTs are fabricated from high-strength steel (HSS), such as ASTM A615/A615M Grade 100 [690].

CRC Announces a New Research Product

The ACI Foundation's Concrete Research Council (CRC) announced the release of the research product "Seismic Performance Characterization of Beams with High-Strength Reinforcement" by Duy V. To and Jack Moehle, University of California, Berkeley. The ACI Foundation co-funded the work, along with major sponsor, the Charles Pankow Foundation. Information on CRC research products can be found at **www.acifoundation.org/research/research-projects**.

Register for Concrete 2029 Workshop and SDC Forum 43

Concrete 2029's next workshop will take place February 28, 2018, at the McCormick Resort in Scottsdale, AZ. SDC Technology Forum 43 will be held March 1-2, 2018, also at the McCormick Resort.

The Forum is meant to bring industry leaders together to discuss industry issues, hear about results of recent research, and showcase emerging technologies. This Concrete 2029 workshop will focus on technology, specifically high-strength steel and how to break through barriers to implementation.

Visit **www.acifoundation.org/sdc** for updates on the forum and workshop agenda, hotel information, and registration for each event.

Ann Daugherty is the Director of the ACI Foundation, where we strive to improve the concrete industry by funding and fostering critical research and new technologies, and by integrating the younger generation into our industry. For more information, contact ann.daugherty@acifoundation.org.

Have an idea for research that will benefit the concrete industry or support an ACI document or code change? Visit **www.concreteresearchnetwork.org** and fill out an online concrete research need form.