Knowledge to Practice:

aci Foundation

Research Proposals are due December 1, 2018

The Concrete Research Council (CRC) is accepting proposal submissions for concrete research:

- Topics are encouraged from all areas of concrete research;
- Up to $50,000 may be approved per project for direct costs;
- The ACI Foundation limits the indirect costs to 15%; and
- At least five worthy research projects will be selected for this cycle.

The research concept must have support from the appropriate ACI technical committee. For more information and details on grant requirements and support from the technical committees, visit **www.acifoundation.org/research**.

Join the ACI Foundation!

ACI Foundation's first annual appeal is on its way to your doorstep. By joining us, you can help deserving students reach their career goals by receiving a scholarship in the concrete industry, provide funding for a research project that will immediately make an impact on our world, and so much more. Every dollar donated helps enable the concrete community to advance the quality of life and transform the future.

For questions on the annual appeal or to donate, please contact Jennifer DeWall at jennifer.dewall@acifoundation.org or +1.248.848.3757.

Highlights from SDC Forum 44—Focus on Innovations and New Tech

Concrete industry leaders, researchers, and professionals gathered at the Strategic Development Council (SDC) Technology Forum 44 in September to discuss new technologies, strategic research, adopting innovations, and more. Technology showcase presentations highlighted reusable probes for testing concrete maturity in real-time; functionally graded materials, such as the seamless manufacturing of concrete to glass; carbon nanotube enriched admixtures; and performance-based wind design for concrete buildings.

Anol Mukopaydhay presented "Performance Engineered Alkali-Silica Reactivity (ASR) Resistant Concrete," which included information on improved ASR test methods for aggregates and concrete. The SDC is interested in expanding this promising research and would like to gather results on a broader range of materials.

The acceptance and use of technical innovations in concrete projects was discussed by a panel of speakers from the viewpoints of owner, architect, design engineer, and concrete contractor. The value of assessing risk, sharing case studies, and filling a "need" was debated among the panel presenters and Forum 44 attendees.

The Strategic Repair Research Council announced funding for "Interface Bond: Development of Appropriate Horizontal Shear Provisions for Concrete Repair." If you have repair-related research, submit a research proposal to the CRC; the deadline is December 1, 2018.

SDC's Concrete Wind Turbine Tower Initiative is considering hosting a webinar with the American Wind Energy Association. If you would be interested in presenting, we invite you to submit an abstract and speaker bio. Contact Tricia Ladely at tricia.ladely@acifoundation.org or

+1.248.848.3737, if you are interested in further information on these SDC initiatives, or would like to participate in the SDC.

Save the Date: SDC Tech Forum 45, February 13-15, 2019

The ACI Foundation's Strategic Development Council will hold its 45th Technology Forum in La Jolla, CA, at the Hilton La Jolla Torrey Pines on February 13-15, 2019. On Wednesday, February 13, we will hold the next Concrete 2029 workshop, "Implementing Technology and Innovation." The main session starts the morning of February 14.

Visit **www.acifoundation.org/sdc** to register, reserve a hotel room, and view the agenda and speaker information.

ACI Foundation Announces Finalized Research Reports

Co-principal investigators Andrés Lepage and Rémy Lequesne, University of Kansas, recently finalized research on "High-Strength Steel Bars in Earthquake-Resistant T-Shaped Concrete Walls." ACI Foundation provided co-funding for this project to supplement funds provided by the primary sponsor, the Charles Pankow Foundation. The research is part of an overall plan to the effort to allow the general use of reinforcing steels with yield strength greater than 60 ksi (414 MPa), which may significantly improve the constructability and efficiency of earthquake resistant structures. The focus of this study was on the use of high-strength steel in slender walls dominated by flexure and to determine experimentally the influence of selected reinforcing steel mechanical properties on wall deformation capacity.

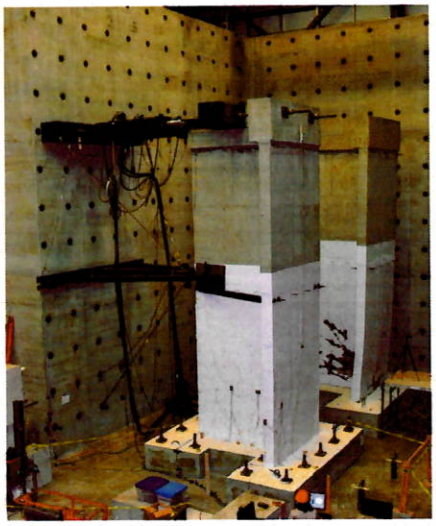
Lepage remarked on the results: "Walls designed for a target flexural strength using Grade 60 or Grade 100 reinforcement, with similar tensile-to-yield strength ratio, had similar strength and deformation capacity."

The ACI Foundation also co-funded the research project "SEACON: Sustainable concrete using seawater, salt-contaminated aggregates, and non-corrosive reinforcement" addresses the issue of sustainability from the perspective of the construction material most used worldwide. This 2-1/2 year project started on October 1, 2015. It was proposed and carried out by a transnational consortium of six partners and four collaborators, including two academic institutions, six companies, and a department of transportation.

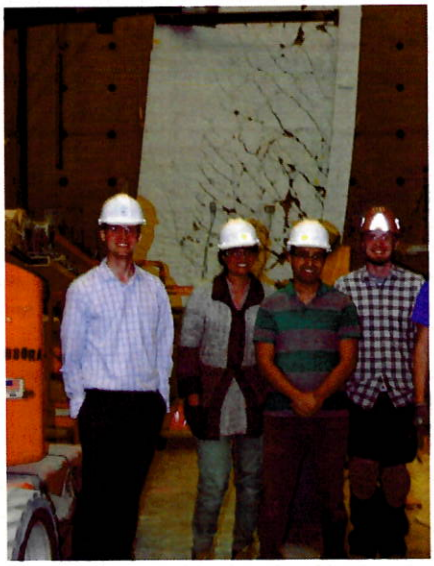
The goal of SEACON is to promote the use of best practices in both the production of concrete and reinforced concrete structures by implementing alternative materials. The aim is to reduce the use of critical resources by replacing them with alternatives that can be chloride-contaminated coupled with noncorrosive reinforcement. This approach would extend the affordability and sustainability of constructed elements under aggressive environmental conditions without affecting their longevity and durability.

Both reports are available for download at **www.acifoundation.org/research/researchprojects**.

Reinforcing bar assembly, first lift, for research project "High-Strength Steel Bars in Earthquake-Resistant T-Shaped Concrete Walls" *(photo courtesy of Andrés Lepage)*



Final test setup *(photo courtesy of Andrés Lepage)*



From left: Rémy Lequesne, Shahedreen Ameen, Sajed Huq, and Alex Weber-Kamin, co-authors of the report "High-Strength Steel Bars in Earthquake-Resistant T-Shaped Concrete Walls" *(photo courtesy of Andrés Lepage)*