

ACI COMMITTEE 239: ULTRA-HIGH PERFORMANCE CONCRETE

2021 ACI Fall Convention

Monday, October 18, 2021 3:30 pm – 6:00 pm (Eastern)

Virtual

MEETING AGENDA

1. Welcome and Attendee Introductions
2. Approval of Agenda
3. Approval of March 2021 meeting minutes
4. TAC Report – Anton Schindler
5. Membership update – Graybeal and Crane
 - a) Voting Members: Graybeal (Chair), Crane (Secretary), Aaleti, Ahlborn, Bandelt, Corvez, El-Helou, Ferrara, Green, Habel, Milligan, Moustafa, Myers, Perry, Rowland, Seibert, Shah, Wille
 - b) 239 Chair: Term ends Spring 2023. Anyone with interest should contact Graybeal.
6. CRC Research Proposal Vetting – John Myers
 - a) CRC Research Proposals – [5 minutes presentations plus 3 minutes for Q&A]
 - Development of Transverse Reinforcement Guidelines for Different Fibers in Axially Loaded UHPC Members – **Sudharshan Raman, Shack Hiew, and Daniel Kong**
 - Shear Behavior of UHPC Considering Axial Load Effects – **Dimitrios Kalliontzis**
 - Structural Evaluation of Carbon Nano-Fiber Infused UHPFRC Columns – **Raafat El-Hacha**
 - Maximum Reinforcing Ratio for Reinforced UHPC Beams: Towards Slender Elements – **Claudia Ostertag and Yi Shao**
 - b) Committee discussion of process between 10/18 and 12/1
7. Upcoming symposia and conferences
 - a) *Virtual ABC Conference: Emphasis on International Experiences*, December 2021
 - b) *BEI International Symposium on UHPC and Emerging Concrete (BEI-UHPC)*, Singapore, Summer 2023
8. Committee Priorities / Reports
 - a) 239-E Educational Outreach – Tess Ahlborn
 - i. Certificate Program – Matthew Bandelt
 - ii. Student Competition (FRC Bowling Ball) – Ben Birch
 - b) 239-C Structural Design of UHPC – Vic Perry
 - i. Flexural Design Concepts – Matthew Bandelt
 - c) 239-D Materials & Methods of Construction with UHPC – Dominique Corvez
9. Test Methods for UHPC – Ben Graybeal
10. Presentation Sessions: Current and Future – Kay Wille
 - a) Fall 2021 – *See Next Page for Full Sessions (3) and Presentations (24 total)*
 - b) Spring 2022 (Orlando)
11. Concrete Research Council Projects
 - a) Completed CRC Project – *Structural Response of Slender UHPC Columns* – Mohamed Moustafa
 - b) Ongoing CRC Project – *Transverse Reinforcement Requirements for UHPC Columns: Assessment of Existing ACI Provisions and New Developments* – Mohamed Moustafa
12. Key External UHPC-related Efforts
 - a) AASHTO Bridge Design Guide Specification – Ben Graybeal
 - b) CSA Bridge Design Standard – Katrin Habel
 - c) FHWA EDC-6 *UHPC for Bridge Rehabilitation and Repair* – Ben Graybeal (on behalf of Zach Haber)
 - d) Other...
13. Collaborations

- a) International updates
- b) ACI Committee Liaison Reports

14. New business – (please inform chair prior to start of the meeting if you wish to add new business)

15. Adjourn – next meeting expected to be March 28, 2022, possibly in Orlando

PARKING LOT: Strategic Planning, Compilation of Research, 239-A ETR

Events Associated with ACI COMMITTEE 239
ULTRA-HIGH PERFORMANCE CONCRETE
at the 2021 ACI Fall Convention

Committee Meetings:

239	Ultra-High Performance Concrete	Monday	3:30p - 6:00p (EDT)	WEB
239-C	Structural Design on UHPC	Monday	10:30a - 12:30p (EDT)	WEB
239-D	Materials & Methods of Construction with UHPC	Monday	1:00p - 3:00p (EDT)	WEB
239-E	Educational Outreach	Sunday	1:00p - 3:00p (EDT)	WEB

Sessions:

UHPC – Hot Topics (Part 1 of 3) SUN, 10:00a to 12:00p Web

- *Towards Ultra High-Performance Concrete Structural Design Guidance in the United States – Rafic El-Helou*
- *Structural Response of UHPC Columns – Mahmoud Aboukifa*
- *Carbon Nano Fibre Infused UHPFRC: Tensile Strength Characterization by Four-Point Bending with Inverse Analysis – Marwa Ibrahim*
- *Design UHPC Structure with High Deformation Capacity – Yi Shao*
- *Identification of the Tensile Constitutive Relationship for UHPC: Indirect Tension Tests versus Back Analysis of Flexural Tests – Liberato Ferrara*
- *Strain Capacity of Strain-Hardening UHP-FRC Part I: Steel Fibers – Antoine Naaman*
- *Strain Capacity of Strain-Hardening UHP-FRC Part II: Synthetic Fibers – Surendra Shah*

UHPC – Hot Topics (Part 2 of 3) SUN, 1:00p to 3:00p Web

- *Development of Non-Proprietary UHPC for Precast Applications – John Lawler*
- *Development of UHPC for the New England Area – Kay Wille*
- *Non-Proprietary UHPC for Precast Bridge Decks Field Joints – Mohamed Moustafa*
- *Engineered UHP Cement-Based Composites with Low Quantities of SCMs – Konstantin Sobolev*
- *Using Machine Learning and the Taguchi Method to Generate Performance Density Diagrams in a Multi Scale Mixture Design Approach for UHPC – Cesario Tavares*
- *A Machine Learning Based Framework for Predicting Flowability, Mechanical Properties, and Porosity of Ultra-High-Performance Concrete – Soroush Mahjoubi*
- *Experimental Behavior and Numerical Modeling of Reinforcement – Matthew Bandelt*

UHPC – Hot Topics (Part 3 of 3) MON, 10:00a to 12:00p Web

- *New Approaches to Architectural UHPC – Larry Rowland*
- *The IOT of UHPC – Vic Perry*
- *UHPC Overlay Installation Methods – Contractor Perspective – Peter Seibert*
- *Effect of Thixotropic UHPC on Interfacial Properties as an Overlay – Jiang Du*
- *Seismic Performance of Reinforced Concrete Columns Strengthened with UHPFRC – Adel Al Ekkawi*
- *Field Implementation of UHPC Beam End Repair in Connecticut – Alexandra Hain*
- *Sprayed UHPC for Structural Reinforcement or Protection – Sebastien Bouteille*

Other UHPC-Related Presentations

- *Recent Developments and Case Studies on Concrete Bridges in Florida Using Ultra-High Performance or Fiber-Reinforced Polymer Reinforcing – Steven Nolan*
 - *Session: Durability, Service Life, and Long-Term Integrity of Concrete... (2 of 2), SUN, 4p-6p*
- *Effect of Tensile Strain Capacity of UHPC on the Bond with Steel Reinforcement – Amr Soliman*
 - *Session: Open Topic Session (2 of 2), WED, 10a-12p*
- *Fracture Characterization of Interfaces between UHPC and High-Performance Concrete – Ali Cicek*
 - *Session: Open Topic Session (2 of 2), WED, 10a-12p*