

2017 National ABC Conference – Pre-Conference Workshops

W-04: Ultra-High Performance Concrete Connections for Prefabricated Bridge Elements

Wednesday, December 6, 2017 – 8:00 a.m. to 12:00 p.m.

Introduction:

Field-cast UHPC details connecting prefabricated bridge elements have proven to be an application that has captured the attention of owners, specifiers, and contractors across the U.S. These connections can be simpler to construct and can provide more robust long-term performance than connections constructed through conventional methods. This workshop will introduce attendees to this technology including background on UHPC, details on connection design, specification and construction considerations, as well as examples of deployed applications. This workshop is the perfect opportunity for participants to learn about this technology and to return home with the tools necessary to successfully implement UHPC connections. Presenters will encourage discussions and field questions throughout, ensuring that participant learning objectives are met.

Workshop Organizer:

Benjamin Graybeal, Ph.D., P.E., FHWA

Program:

8:00 a.m.	Welcome and Introduction to Workshop	Moderator – Benjamin Graybeal, Ph.D., P.E.
8:10 a.m.	FHWA <i>Every Day Counts</i> Initiative	Mark Leonard, P.E.
8:20 a.m.	Introduction to UHPC	Benjamin Graybeal, Ph.D., P.E.
9:00 a.m.	Layout and Design of UHPC Connections	Zachary Haber, Ph.D.
9:30 a.m.	Emerging Concepts in UHPC Connections	Zachary Haber, Ph.D.
9:45 a.m.	<i>Break</i>	
10:00 a.m.	Construction, Inspection, and Testing	Benjamin Graybeal, Ph.D., P.E.
10:40 a.m.	Special Provisions	Mark Leonard, P.E.
11:00 a.m.	Completed Projects: New York, New Jersey, Minnesota, etc.	Zachary Haber, Ph.D.
11:30 a.m.	Open Discussion: Best Practices for Design, Construction, Inspection, etc.	Benjamin Graybeal, Ph.D., P.E.
12:00 p.m.	Adjourn	

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Speakers and Bios:

Benjamin Graybeal, Ph.D., P.E., benjamin.graybeal@dot.gov (**Organizer & Moderator**)

Ben is the Team Leader for Bridge Engineering Research for the Federal Highway Administration. He also leads the FHWA Structural Concrete Research Program at the Turner-Fairbank Highway Research Center. He has been at the forefront of UHPC research, development, and deployment efforts since the beginning of FHWA's UHPC efforts in 2001. Ben executed much of the research and developed the guidance that is central to the use of UHPC connections in the U.S. bridge sector. He is the chairman of ACI 239: UHPC, co-chaired the 1st International Interactive Symposium on UHPC, and has delivered workshops on UHPC across the U.S.

Zachary Haber, Ph.D., zachary.haber@dot.gov

Zach is a research structural engineer on the FHWA's Bridge Engineering Research Team at the Turner-Fairbank Highway Research Center. Zach specializes in research and development of prefabricated bridge systems and applications of UHPC in highway bridge infrastructure. He provides technical assistance and outreach to bridge owners, designers, and consultants interested in developing or deploying UHPC-based bridge solutions. Zach is involved with numerous ACI technical committees, and serves as a panel member for NCHRP projects related to prefabricated bridges and UHPC connections.

Mark Leonard, P.E., mark.leonard@dot.gov

Mark is a structural engineer on the FHWA's Resource Center Structures Technical Service Team. Mark provides technical assistance, training, and review services in the areas of highway structure design, maintenance, preservation, and inspection. He began his employment with FHWA in 2012 and has 28 years of experience as a structural engineer for the Colorado Department of Transportation, including twelve years as the State Bridge Engineer. Mark is a registered Professional Engineer in the State of Colorado, and is a graduate of the University of Notre Dame with a bachelor of science in civil engineering.