Welcome to Webinar on Accelerated Bridge Construction

Programmatic Implementation and Value of ABC – The VTrans Approach

Sponsored by

Accelerated Bridge Construction University Transportation Center (ABC-UTC) at Florida International University

Website: abc-utc.fiu.edu
Email: abc@fiu.edu

February 16, 2017 – 1:00 p.m. to 2:00 p.m. Eastern
Today’s Webinar

ABC Announcements (10 minutes)
Featured Presentation (35 minutes)

Programmatic Implementation and Value of ABC – The VTrans Approach

Wayne B. Symonds, P.E., Structures and Hydraulics Program Manager, Vermont Agency of Transportation (VTrans); Kristin Higgins, P.E., ABP/PIIT Senior Project Manager, VTrans; and Jennifer Fitch, P.E., ABP/PIIT Project Manager, VTrans

Question and Answer (15 minutes)

Please post your questions in the question box
DOT announces Beyond Traffic Innovation Centers
DOT announces Beyond Traffic Innovation Centers
Mark Your Calendar

2017 National Accelerated Bridge Construction Conference
December 7 and 8, 2017: Conference
December 6: Workshops
Miami, FL

Extended Deadline to submit Abstracts:
February 24, 2017
Submit your abstract online
Visit: www.abc-utc.fiu.edu
Congratulations on Retirement
June 2017!

29 years with the Iowa DOT:
- Bridge Designer
- Resident Construction Engineer
- *State Bridge Engineer*
- Engineering Bureau Director
- Research and Technology Bureau Director
- Systems Operations Bureau Director

Sandra Q. Larson, P.E.
Systems Operations Bureau Director
Highway Division
Iowa DOT
Upcoming Events

2017 New York City Bridge Conference – NYC, NY
August 21-22, 2017
Sponsored by the Bridge Engineering Association
http://www.bridgeengineer.org

Call for Bridge Engineering Award Nominations:
Deadline for submission: February 17, 2017
Email nomination letter & nominee’s resume to:
kmahmoud@bridgeengineer.org

For more information, contact: Khaled Mahmoud
kmahmoud@bridgeengineer.org
Upcoming Events

Every Day Counts Webinar Series:
Ultra-High Performance Concrete for Prefabricated Bridge Elements
Sponsored by Federal Highway Administration (FHWA)
https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/uhpc.cfm

1st Webinar: Introduction to UHPC
March 7, 2017 – 1:00-2:30 pm EST
Featured speaker: Ben Graybeal, Ph.D., P.E.

To register, go to the following link:
Upcoming Events

2018 PCI Convention and National Bridge Conference – Denver, CO
February 20-24, 2018

Sponsored by Precast/Prestressed Concrete Institute (PCI)
http://www.pci.org/

Abstract Submission Deadline: April 15, 2017
http://www.pci.org/News_And_Events/PCI_Convention/Call_for_Papers/

For additional information, contact:
William Nickas, P.E., wnickas@pci.org
NSBA Announcements

ABC Projects in the January Issue of MSC

• Fast Finish
• High Volume, Low Impact
• A New Take on Plate Girders

Available at:
www.aisc.org/modernsteel/

For more information, contact:
Matthew Shergalis, P.E.
NSBA Marketing Manager
shergalis@aisc.org
Recent FHWA ABC Publications

 TECHNOTE

Design and Construction of Field-Cast UHPC Connections

FHWA Publication No. FHWA-HRT-14-084
FHWA Contact: Ben Graybeal, HRDO-40, 202-493-3122, benjamin.graybeal@dot.gov

Introduction
Advancements in the science of concrete materials have led to the development of a new class of cementitious composites called ultra-high performance concrete (UHPC). UHPC exhibits mechanical and durability properties that make it an ideal candidate for use in developing new solutions to pressing concerns about highway infrastructure deterioration, repair, and replacement. Field-cast UHPC details connecting precasted structural elements used for bridge construction have proven to be an application that has captured the attention of owners, specifiers, and contractors across the country. These connections can be simpler to construct and can provide more robust long-term performance than connections constructed through conventional methods. This document provides guidance on the design and deployment of field-cast UHPC connections.

UHPC
UHPC is a fiber-reinforced, portland cement-based product with advantageous fresh and hardened properties. Through the appropriate combination of advancements in superplasticizers, dry constituent gradation, fiber reinforcements, and supplemental cementitious materials, UHPC is able to deliver performance that far exceeds conventional concrete. Developed in the late 20th century, this class of concrete has emerged as a capable replacement for conventional structural materials in a variety of applications.

The Federal Highway Administration (FHWA) defines UHPC as follows:

UHPC is a cementitious composite material composed of an optimized gradation of granular constituents, a water-to-cementitious materials ratio less than 0.25, and a high percentage of discontinuous internal fiber reinforcement. The mechanical properties of UHPC include compressive strength greater than 21.7 ksi (150 MPa) and sustained post-cracking tensile strength greater than 0.72 ksi (5 MPa). UHPC has a discontinuous pore structure that reduces liquid ingress, significantly enhancing durability compared to conventional concrete.

TABLE OF CONTENTS:

Common Connections ........................................... 4
Design Guidance .................................................. 11
Specifying UHPC ................................................... 17
Construction Engineer Inspection .......................... 25
Case Study ....................................................... 27
Deployments ....................................................... 32

FHWA - Tech Notes

2016

TECHNOTE

Dimensional Stability of Grout-Like Materials Used in Field-Cast Connections

www.fhwa.dot.gov/publications/research/infrastructure/structures/bridge/16080/index.cfm

2017

TECHNOTE

Bond of Field-Cast Grouts to Precast Concrete Elements

www.fhwa.dot.gov/publications/research/infrastructure/structures/bridge/16081/index.cfm
2017 Meeting & Workshop materials is posted
2017 Industry Poll Ongoing!

2017 Subcommittee Meeting:
Agenda
Meeting Presentation Guide
2016/2017 Activities Statement
2017 TRB Structures Group Compiled RNS

TRB NCHRP ABC update
2015 NCHRP Annual Report
Waseem Dekelbab/NAS

TRB SHRP2 R04 update
SHRP2 R04 Resources Link
Finn Hubbard/AASHTO

Turner-Fairbanks Highway Research Center update
Presentation Link
Dr. Benjamin Graybeal/TFHRC

University Transportation Center for ABC update
ABC-UTC Link
Dr. Atodor Aztchinmimni

POLL WILL CLOSE
FEBRUARY 20, 2017
12:00 PM PST

TOPICS & FEEDBACK

1. Development of guidance for establishing effective and efficient timelines and incentives for ABC.

Proposal link
Review & Rate link

comments:
- Developing “rules of thumb” for Owners on when to use or not use and how high to set Incentives and Disincentives on “common” factors such as size of project, cost amount, complexity, etc.
- With input from the construction side of the industry would be useful for planning purposes.
- For our agency, this is done by our traffic group.
- I think this could be an output of topic #8
- Lessons learned from taking the “area of slowing down” and how successfully the hurdles were bypassed.
- This research will help with efficient implementation of developed ABC Technologies. Utilizing the UTC data base of constructed ABC Projects will give research results a high degree of credibility.

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TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

www.trbaff103.com
1.) Development of guidance for establishing effective and efficient timelines and incentives for ABC

2.) Planning, design, fabrication, and installation strategies for Modular Decked Beam (MDB) elements

3.) Performance comparison of in-service full-depth precast concrete deck panels to cast in place decks

4.) Labor, equipment, and production rates for Accelerated Bridge Construction

5.) Best Practices used for Strategic Public Communications for ABC projects

6.) Updating the "Best Practices in Accelerated Bridge Construction Techniques" report

7.) Rapid Construction of Pre-fabricated Substructure elements for Durable and Sustainable Bridges using Fiber Reinforced Polymers (RFP)
ABC-UTC Graduate Student Seminar Archives

January 2017: Estimating the Total Cost of Accelerated Bridge Construction

Estimating the Construction Cost Associated with Accelerated Bridge Construction

by

Mohamed Ibrahim, Ph.D.
FIU Graduate and former ABC-UTC Research Assistant
Managing Director, Equicorp Advisors, Cairo, Egypt
(Ph.D., August 2016)

Estimating and Implementing Road User Costs in ABC Selection Decisions

by

Jianmin Jia, Ph. D. Candidate
FIU Graduate Assistant
Lehman Center for Transportation Research (LCTR)
(Ph.D., May 2017)

www.abc-utc.fiu.edu/events/graduate-student-seminars-archives
Next Webinar

Thursday, March 16, 2017 (1:00 – 2:00 p.m. Eastern)

Featured Presentation

Georgia’s Rapid Replacement Utilizing Full-Depth Precast Deck Panels with UHPC Closure Joints

by

Bill DuVall, P.E., State Bridge Engineer, Georgia Department of Transportation; and Dexter Whaley, P.E., Bridge Design Group Manager, GDOT

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