

July 2016 ABC-UTC Graduate Student Seminar: ABC Techniques to Improve Durability, Sustainability, and Efficiency

Questions submitted during registration	Response
<p>Did you see other ways to make ABC techniques even more efficient and sustainable?</p>	<p>Sam: ABC can become more sustainable as more research is completed and that research is translated into real ABC projects.</p> <p>Mary Lou: From a broader perspective, as ABC techniques are used, lessons are learned and areas where further research would be beneficial are identified, resulting in development of details that are more efficient and sustainable. Also, ABC techniques that have been used successfully in the past can be a starting point for individuals developing future ABC projects. The ABC-UTC website at ABC-UTC.fiu.edu has the a database of completed ABC projects, as well as ABC research and other information.</p>
<p>We hope you cover the topic of 1) waterproofing of concrete structures and 2) specifically extending prestressed concrete.</p>	<p>Meghan: 1) The polymer overlay and sealers in the "Rapid Protection" section of the presentation "Synthesis on the Use of Accelerate Bridge Construction Approaches for Bridge Rehabilitation" may be used for waterproofing concrete structures. 2) If this question is referring to extending the service life of a prestressed concrete member, certainly CFRP can be used to repair any cracks or damages.</p>
<p>According to the X sections, it looks like a roadway repair job ?</p>	<p>Meghan: If this question is referring to the picture on slide 10, this is a polymer overlay being applied which can be used to protect decks and can be installed quickly and efficiently.</p>
<p>What qualifies a technique as ABC?</p>	<p>Mary Lou: FHWA has a current definition of ABC that can be accessed by going to their web page at https://www.fhwa.dot.gov/bridge/abc/. Included is the current definition of ABC as well as the various ABC techniques. You are also encouraged to go to the ABC-UTC website at ABC-UTC.fiu.edu. From there you can also access lots of information on ABC, including from the home page the projects database of some of the completed ABC projects across the U.S.</p>

Featured Presentation #1: Synthesis on the Use of ABC Approaches for Bridge Rehabilitation

Questions during Meghan's presentation	Response
In addition to being cost effective and taking a relatively short time to implement, do these available solutions also offer long-term durability?	These solutions can absolutely offer long-term durability - but only if they are designed and detailed correctly. As with any project, long-term success of the final product is a result of well thought out and thoroughly developed design.
What effects do these solutions have on the design phase of a project?	Because these solutions presented often need to be innovative in nature, they require more thought process during the design phase. Though the increase in design time may seem costly up front, it is sure to lead to long-term cost savings during not only construction phase, but during the service of the finished product as well.

Featured Presentation #2: Laboratory Testing of Integral Abutment Details for Accelerated Bridge Construction

Questions during Sam's presentation	Response
What do you think could be done in the future to improve the pile coupler detail?	Increasing the length of the pile coupler to 3 or 4 feet could create a better connection. Using two pile couplers side by side when looking at a cross section view could also increase capacity.
What is an alternative to precast integral abutments?	An alternative is to use a closure pour for the integral diaphragm; however, this option uses expensive material to make the pour. Semi-integral abutments where there is no moment connection made between the pile cap and integral diaphragm, will increase constructability.
How is span expansion and contraction accounted for with out the use of an expansion joint and bearing?	The integral abutment relays on the flexibility of the foundation pile to allow the pile cap to move as the superstructure expands and contracts.