

# FHWA RESEARCH-BASED INNOVATION EFFORTS RELEVANT TO SCOBS T-10

Ben Graybeal, Ph.D., P.E.  
Team Leader – Bridge Engineering Research  
Federal Highway Administration  
202-493-3122  
[benjamin.graybeal@dot.gov](mailto:benjamin.graybeal@dot.gov)

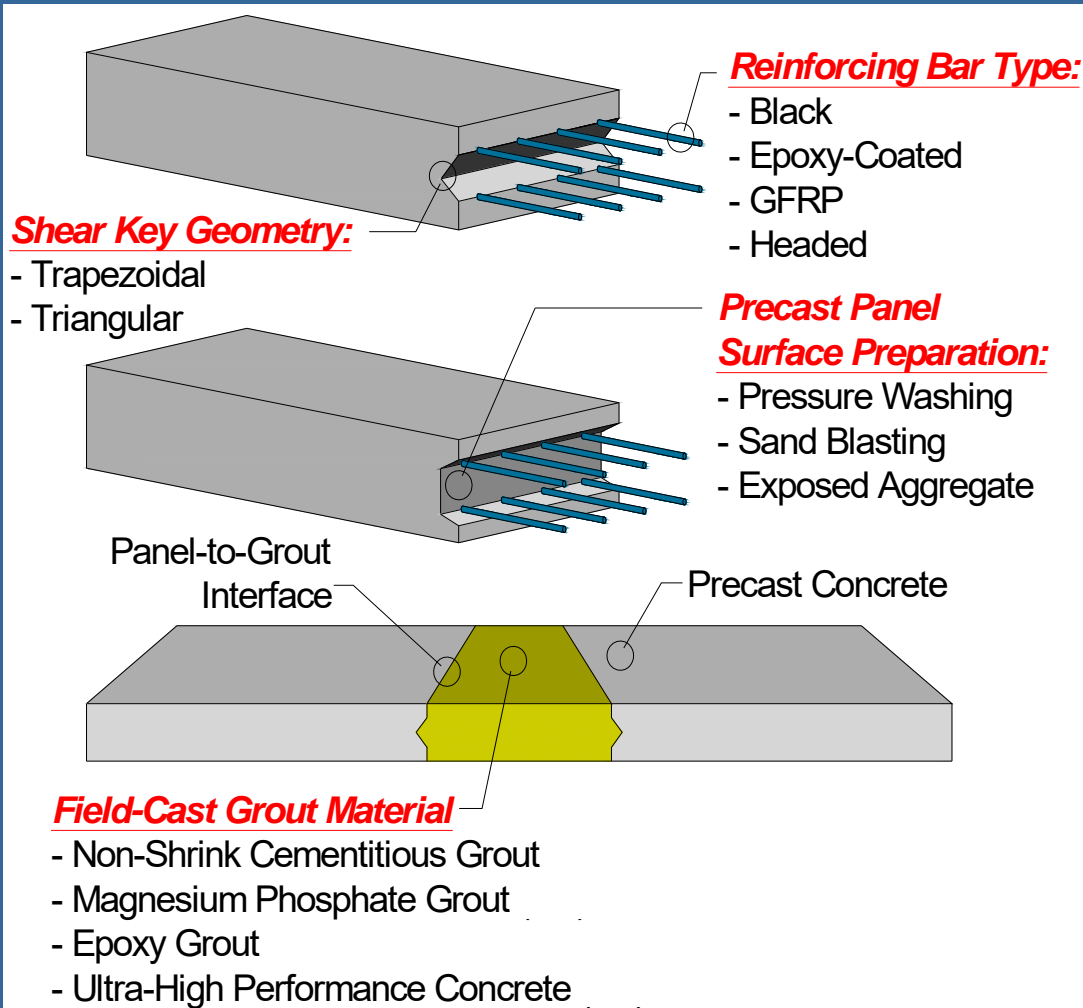


# ADJACENT BOX CONNECTIONS

- Innovative connections
- Best practices
- Report being published (FHWA-HRT-17-093)



# DECK LEVEL PBE CONNECTIONS



- 75+ connections tested
- Report being published



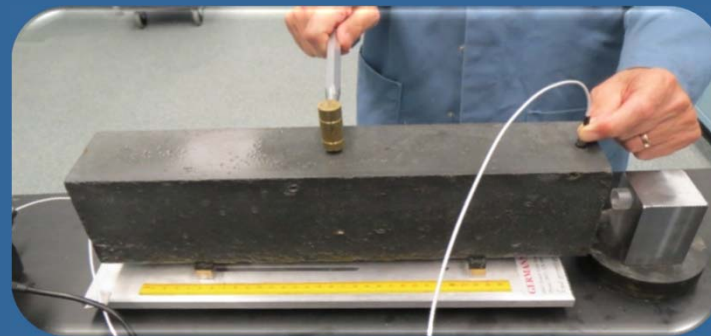
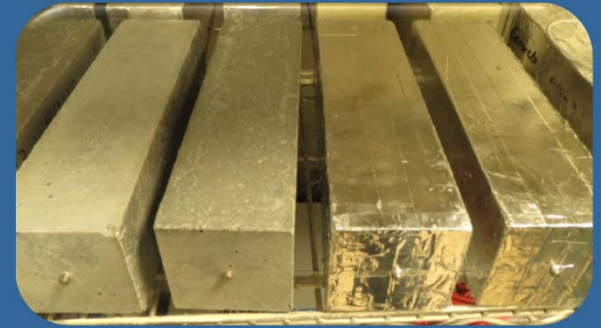
# PBE CONNECTIONS: GROUT SHRINKAGE      INTERFACE BOND

- FHWA-HRT-16-080
- Best practices for field-cast grout selection
- Expected performance
- FHWA-HRT-16-081
- Important considerations
- Test methods
- Suggestions for increasing bond strength



# UHPC MATERIAL CHARACTERIZATION

- 5 different UHPCs
- Mechanical, durability, creep, shrinkage
- Report being published





# UHPC SHEAR CONNECTIONS

- Physical testing of connections
- Aim is using mechanical capacity to simplify design and construction
- Testing complete, analysis underway



# UHPC OVERLAYS



- Rehab deteriorated bridge decks
- Dozens of deployments in Europe
- 1<sup>st</sup> US deployment in 2016 (Iowa)
- 2<sup>nd</sup> US deployment coming in 2017 (Delaware)
- FHWA Report in Fall 2017 (FHWA-HRT-17-096)



# AASHTO LRFD Design and Construction Guide Specification UHPC

- FHWA-THFRC is taking on this effort.
- Building on best practices of France, Switzerland, Canada.
- Pooled Fund TPF-5(366) is supporting effort. Led by IA. Just getting started...partners include IA, CT, GA, NY, WA

