

Ultra-High Performance Concrete

Building Stronger Bridges

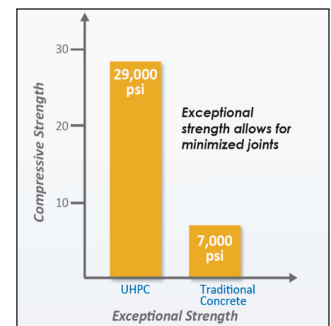
Ultra-High Performance Concrete (UHPC), an Accelerated Bridge Construction (ABC) material, is a steel fiber-reinforced cementitious composite that has exceptionally high mechanical strength and durability properties. This bridge material is used to create the simple, strong and long-lasting connections needed for successful construction using Prefabricated Bridge Elements (PBES). UHPC is a Federal Highway Administration (FHWA) Every Day Counts Round 4 (EDC-4) innovation that Pennsylvania championed.

What are the benefits?

- Redesign of connections supports **ease** and **speed** of construction
- Connections are inherently **less congested**, simplifying fabrication and construction
- Improve **long-term performance** compared to connections constructed by conventional methods

How does it work?

As UHPC function exceeds the performance for a conventional concrete field-cast connection, it allows the behavior of the joined prefabricated components to surpass that of conventional construction. Compared to many solutions, UHPC allows for small, simple-to-construct connections that require less volume of field-cast concrete and do not require post-tensioning. UHPC also has a significantly faster set up time compared to conventional concrete: 12 to 24 hours versus 3 to 5 days.



How do I learn more?

To learn more about this innovation, visit www.penndot.pa.gov/stic or email penndotstic@pa.gov.