

FDOT Transportation Innovation Initiative: UHPC – Design Innovation



Fast
Facts:
Ultra-High
Performance
Concrete



- Project Location:** FDOT District Five
Brevard County, Florida
- Agency:** Florida Department of Transportation
- URL:** <http://www.fdot.gov/structures/innovation/UHPC.shtm>
- Project Name:** I-95 NB over CR 5A
Bridge No. 700156
FPID: 438321-1
- Project Description:** Partial Deck Replacement using full depth precast deck panels with UHPC joints.
- Project Purpose & Need:** Bridge Inspection Reports identified deterioration, of deck sections using partial depth precast panels. Work activities included removal of the existing deck concrete and panels, installation of a new full depth precast panels and connections with straight splice bars and UHPC joint fill.

Overall Budget/Cost Estimate:

\$334,599 (Construction Contract)

What was unique about this project?

First use of UHPC for connections full-depth precast deck panels for interstate repair in Florida.



Describe Traditional Approach:

Traditional approach includes using hooked and lacing reinforcing bars within wider closure pours using high early strength concrete.

Describe New Approach:

Utilization of short length straight bars lap splices with nominal 8” with UHPC closure pour.

Top Innovations Employed:

Utilization of UHPC connections for rapid replacement of damage deck.

Primary Benefits Realized/Expected:

More robust and longer service life from precast deck panel and UHPC connections. Short closure time for interstate bridge lane (4/9/8 – 4/12/18).

Project Start Date/Substantial Completion Date:

10/9/2017 – 4/19/2018

Affiliations:

PE Consultant:

Kisinger Campo and Associates Corp.

Construction Contractor:

Oceaneer Consulting, LLC.

Construction Engineering Inspection:

Target Engineering

Project Contact:

Engineer of Record:

Patrick D. Mulhearn, P.E.

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FDOT Project Manager:

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