

PROJECT NAME: I-90 OVER FULLER ROAD



Photo: Prepping joints for UHPC on precast deck panels, I-90 over Fuller Rd, Albany, NY

Location: I-90 over Fuller Rd, Albany, NY
Client: New York State Dept of Transportation
Product: ceEntek ce200SF-G™

Product Volume: 21.8 m³ (28.6 cy)
Panel Dimension: Various
Completion Date: July 2021

PROJECT SITE



Photo: View of bridge from Fuller Rd

The I-90 over Fuller Rd project was a precast modular unit with UHPC connections and link slab construction. The bridge is a three-span, 8-lane structure which carries high traffic around the capital city of NY state. The bridge is a critical part of the New York State transportation network.

The bridge facilitates movement from I-90 to I-87 and is a key component in travel around Albany. The on and off ramps around the bridge help motorists access the surrounding retail area which includes two shopping malls. The bridge is also located right next to the University at Albany.

This project was completed over 4 weekends to accommodate drivers. This is due to New York State's Drivers First initiative.

PROJECT PROFILE

PROJECT DESCRIPTION

The I-90 over Fuller Road project was a rehabilitation of an existing bridge. The steel girders in the previous bridge were susceptible to water leaking off the bridge deck, which caused major deterioration. The new design will prevent the corrosion of steel beams and girders.

Casting was scheduled for four weekends in June, and the bridge was split up into four different sections of 2-lanes that were replaced each weekend. Traffic was open on three sections while work was being done on the fourth. High early strength was necessary to open the bridge to traffic in less than 24 hours after the placement of UHPC. Accelerated strength gain to 10,000 psi (~70 MPa) of ceEntek's UHPC 2.0™ allowed stripping of formwork 8-10 hours after placement.

The new structure was Precast Modular Units (PMU) with UHPC closure pours and UHPC link slabs using ceEntek's ce200SF-G™. The deck was grounded and grooved leaving a smooth surface and UHPC exposed.



Photos: Comparison between new and old bridge section (L), ceEntek's UHPC mixer set up in pair (R).

PROJECT EXECUTION

The ce200SF-G™ was batched on site with ceEntek's variable speed specially designed Model 30 Mixers (0.65 cy [0.5 m³] capacity) and supplied in 1,075 kg (2,370 lb) bulk bags, with 0.008" x 0.5" (0.2 mm x 13 mm) steel fibres and ceEntek's proprietary CNF enhanced paste. The project required a high early strength of 10,000 psi (70 MPa) in 10 hours using the Maturity Method to accommodate an accelerated construction.



Photos: Connection bottom formwork being prepped for casting (L), ceEntek's ce200SF-G™ being poured from power buggy into link slab (R).