

Evaluation of CIP Reinforced Joints for Full-Depth Precast Concrete Bridge Decks; NCHRP 10-71, Report 173

Description

Meta Fields

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Primary Sponsor Contact Info : National Cooperative Highway Research Program Transportation Research Board 500 Fifth Street, NW Washington, DC 20001 USA

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Key Words :

Bridge construction; Bridge decks; Bridge design; Cast in place concrete; Girders; Precast concrete; Specifications; Structural connection

Abstract :

This report contains recommended design specifications, construction specifications, and five illustrative examples of durable CIP reinforced concrete connections for precast deck systems that emulate monolithic construction, considering issues including speed of construction, durability, and fatigue. Included in the report is the supporting research that led to these recommendations. This research focused on systems that reduce the need to place and remove formwork thus accelerating on-site construction and improving safety. The three systems considered to accomplish these objectives were: (1) a precast composite slab span system (PCSSS) for short to moderate span structures, (2) full-depth prefabricated concrete decks, and (3) deck joint closure details (e.g., decked-bulb-tee (DBT) flange connections) for precast prestressed concrete girder systems for long span structures. Depending on the system, the connections are either transverse (i.e., across the width of the bridge) or longitudinal (i.e., along the length of the bridge). The first system, PCSSS, is an entire bridge system; whereas the other two systems investigated in the project represented transverse and longitudinal joint details to transfer moment and shear in precast deck panels and flanges of decked bulb tees. Two types of connection concepts were explored with these details, looped bar details and two layers of headed bar details.

Subject : Deck Panels

Group : Decks

Category : Completed Projects