



Accelerated Bridge Construction Deck Panel Testing

Description

Meta Fields

Category : Completed Projects

Group : Decks

Subject : Transverse Joints for Panels

Abstract : Accelerated Bridge Construction techniques have resulted in state-of-the-art options that save time and money during the construction of new or existing bridges. One such group of techniques that has generated considerable interest is the use of precast concrete deck panels. Utilizing precast concrete deck panels allows for offsite curing, thus eliminating long delays due to formwork construction and concrete curing time. Despite the benefits, problems can develop due to the inherent joints between the individual panels. These joints are locations for potential leakage, which can result in corrosion or inadequate long-term performance. Post-tensioning the precast deck panels helps to eliminate leakage; however, conventional longitudinal post-tensioning systems require complete deck replacement in the event of a single faulty deck panel. The proposed post-tensioned, curved-strand connection, presented in this research, allows for a single panel replacement. The capacity of the proposed curved-strand connection was investigated in order to compare its behavior to other systems that are currently in use. The curved-strand connection was found to be comparable to a standard post-tensioning system. The ultimate capacity of the curved-strand connection in negative bending was found to be 97% of the standard post-tensioning.

Key Words : Accelerated Bridge Construction, Precast, Deck, Panels, Losses

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Project Length : 12

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