

Prioritization Strategy for Replacing Florida's Deck Panel Bridges

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Summary

Precast deck panel bridges were first used in the construction of highway bridges in Illinois in the early 1950's. This type of construction offers significant economies; the stay-in-place (SIP) panel combined with a cast-in-place (CIP) topping can considerably reduce construction time as field forming is only needed for the exterior girder overhangs. Florida has approximately 200 precast deck panel bridges. Despite successful performance in other states, precast deck panel bridges have a long history of premature deterioration in Florida that has led to excessive maintenance and impacts to the traveling public. A program is underway to systematically replace selected deck panel bridges. During the replacement of these bridges the opportunity was taken to conduct on-site investigations on bridges that were in different states of disrepair. This paper provides an overview of the research project.

Keywords: Deck Panel, Stay-In-Place Form, Precast Panel, Prestressed

1. Introduction

Deck panel bridges were first used in Illinois in the 1960's. Later, they were built in Florida from the mid 70's to the early 80's. Originally, cast-in-place decks were planned but during construction, a change was made to use a precast, composite deck panel option. This consisted of a 90-100 mm thick precast panel, placed from girder to girder, over which a 90-100 mm cast-in-place slab deck was cast (Fig. 1). These two elements were intended to act as a composite deck system under live and superimposed dead load.

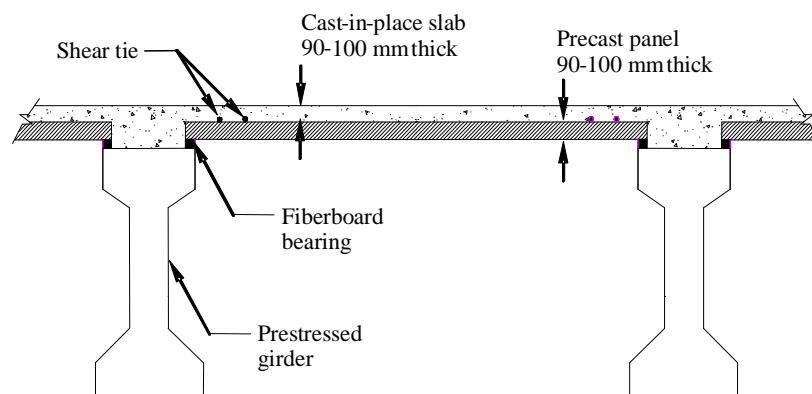


Figure 1: Cross Section of Precast Prestressed Panel Deck