



Mid-Bay Bridge Tendon Restoration

Case Study

The Northwest Florida Panhandle Mid-Bay toll bridge underwent emergency closure for repairs due to tendon corrosion. DYWIDAG successfully restored and repaired five multistrand tendons on this 3.6-mile bridge connecting Niceville and Destin.

PRODUCTS

Multi strand tendon replacement

LOCATION

USA - Destin, FL

SCOPE

Supply
Installation
Technical Support
Post Tensioning

OWNER

Florida Department of Transportation

GENERAL

CONTRACTOR
Superior Construction

Context

Since its opening in June 1993, the Mid-Bay Bridge has played a vital role in the north-south highway system of Northwest Florida. This two-lane toll bridge spans the Choctawhatchee Bay in Okaloosa County, covering a distance of 3.6 miles. It serves as a crucial transportation link connecting the communities of Niceville and Destin. The bridge offers local residents a convenient means of commuting to work, accessing educational institutions, shopping, and engaging in recreational activities.

During a routine inspection, inspectors identified the need for the replacement of internal segmental box girder tendons in the segmental box girders of the bridge creating an emergency repair scenario. The objective was to ensure the bridge's structural integrity while addressing the identified issues.

Solution

This project involved the replacement of five (5) external 19-0.6" strand tendons while keeping them temporarily shored together with DYWIDAG THREADBARs. and the installation of supplemental post-tensioning (PT) as outlined below:

- Tendon 1: Span 8
- Tendon 2: Span 22
- Tendon 1: Span 55
- Tendon 4: Span 74
- Tendon 6: Span 74
- Span 55 Supplemental PT

Our comprehensive scope of work included the design of the de-tensioning methodology, the design of the new PT system, the removal of the existing system, and the installation of the new PT system. This required precise measurements for jack fitment and the development of a highly specialized four-foot-long, curved stressing nose. We began by de-tensioning and carefully removing the damaged tendons, leaving no room for safety compromise. These old components were responsibly disposed of, making way for the next phase of our transformative project.

With precision and expertise, we proceeded to install new external post-tensioned tendons within the box girders. The project was completed safely, on time, and on budget.

