

# Saving and Rehabilitating a Loading Dock While in Use

Tampa, FL

Submitted by Premier Corrosion Protection Services, Inc.



The severely deteriorated loading dock in the Port of Tampa was originally built in 1968 as a terminal to unload ammonium nitrate. The eastern end of the dock houses a funnel and conveyer system inside a metal-framed and wood-clad enclosure. The conveyer system is crucial in the operations of the facility, as it is the only means for the product to be unloaded from the cargo vessels and deposited via a 500 ft (150 m) long conveyer into three warehouses for bulk storage.

Over the years, there has been considerable deterioration of the concrete piles, pile bents (beams), and slab. The perimeter wall was regularly hit by freighter vessels when docking, causing cracks and spalls. Throughout the years, patch repairs had been performed with various degrees of success.

After a detailed inspection of the dock and structural analysis, repairs were performed on the damaged piles, pile bents, and the slab. The slab was strengthened with additional reinforcing steel, the deck resloped, drains added, and a gutter system installed on the south side. A troweled traffic coating was installed over the new and existing dock as well as on the approach ramp. The damaged perimeter wall was cut, the curb reformed, and new guardrails added. Fiber-reinforced polymer material was installed to encapsulate repaired pile caps. Finally, the entire superstructure was coated with a Class V coating.

All repairs took place while the facility was still in use; whenever a vessel was scheduled to dock to unload the cargo, the repair crew would demobilize for the duration of the visit and resume work immediately after the vessel left the port. This eliminated the need to shut down operations while the repairs were taking place.

## Port of Tampa Loading Dock

OWNER  
**(Anonymous)**  
Tampa, FL

PROJECT ENGINEER/DESIGNER  
**V2 Composites**  
Auburn, AL

REPAIR CONTRACTOR  
**Premier Corrosion Protection Services, Inc.**  
Tampa, FL

MATERIAL SUPPLIERS/MANUFACTURERS  
**MAPEI Corporation**  
Deerfield Beach, FL  
**V2 Composites**  
Auburn, AL

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