

Vector®

Project History

Canaveral Port Authority Cape Canaveral, Florida

- Structure:** North Cargo Pier Repairs
- Client:** Canaveral Port Authority
- Date:** April, 2005 - December, 2006
- Contractor:** Vortex Marine Construction
Vector Corrosion Technologies
- Products:** Galvanode® Jackets Galvashield® XP
Galvanode ASZ+ Galvashield CC
Galvanode DAS



Galvanode Jacket for Pile Protection

Project Description:

The North Cargo Piers at the Port Canaveral consist of four wharves that handle bulk cargo such as cement, slag, salt, automobiles, and lumber. The structures consist of 18 in. square prestressed concrete piles, cast in place concrete pile caps and beams, and prestressed concrete deck units with a cast in place topping slab.

After years of exposure to the corrosive saltwater environment a major rehabilitation was planned to extend the service life of the busy piers. The scope of work included concrete repair and galvanic protection for the piles, pile caps, and the precast deck units with an estimated design service life of 20 years.

The pile protection consisted of Galvanode Jackets to protect 668 piles. The Galvanic Jackets consisted of 1.6 lb./ft² zinc mesh anodes, 48 lb. bulk zinc anodes and a 1/8 in. thick stay in place FRP form. The length of piles protected ranged from 6 to 30 feet.

The cast-in-place pile caps were also showing signs of distress, with the highest exposure to chloride contaminated seawater along the bottom section. A protection system was devised whereby the bottom 8 in. of the pile caps were removed, and activated distributed anode strips (Galvanode DAS) were placed in two continuous rows on each side of the pile caps. Approximately 6,000 lineal feet of pile caps were protected.

The prestressed concrete deck units were protected using Galvanode ASZ+ (Activated Arc Spray Zinc), applied to the deck soffit by Vector Corrosion Technologies. Approximately 57,500 ft² of prestressed concrete deck units were protected. The prestressed deck units that had existing corrosion damage were to be strengthened using bonded carbon fiber sheets after the repairs were completed. Galvanic protection was provided to these deck units using a combination of Galvashield XP anodes around the perimeter of the repairs and Galvashield CC135 anodes installed on holes drilled on a grid pattern through the remaining sound but chloride contaminated area.



Galvanode ASZ+ on Precast Deck Units



Galvanode DAS on Pile Caps

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