

# concreteMONTHLY

News from the cement and concrete industries

March 2013

## Historic Pier Restoration in Galveston, Texas



Photo courtesy The Quikrete Companies

### Facing the storms and tides to meet completion deadlines during QUIKRETE® Shotcrete Application

By Sherry Boyd

The Galveston Island Historic Pleasure Pier reopened in the summer of 2012 following a major renovation project necessitated by the devastation of Hurricane Ike in 2008. It was originally built in 1943 as a site for big band concerts and midway rides. Restoring the pier required significant structural repairs to safely support a new amusement park designed by Houston-based Mike Treadway Architects Inc. and built by Ardent Construction LLC of Friendswood, Texas, the general contractor.

Epoxy Design Systems, as a subcontractor, faced the elements and logistics obstacles to apply more than 1,400 bulk 3,000-pound bags of QUIKRETE® Shotcrete MS - Fiber Reinforced to restore

the structural integrity of the pier. The nozzlemen, who at times wore life jackets, worked from scaffolding to pneumatically apply the dry process shotcrete. Their work included extensive repairs to pilings, beams and other structural elements during the year-long project.

"The project was a logistical challenge," says Dany Merritt, Epoxy Design's senior project manager and estimator for the Galveston Pier restoration. "We needed to devise a method to provide stable and secure access for 100 men and equipment and handle hundreds of pound of old concrete debris as it was being removed out over the surf. So it would not be impacted by weather changes like tidal and storm wave action, containment was important. We wanted

a solid working deck and netting to keep all removed concrete on the working platform." He continues, "Once the concrete and steel rebar was removed it all had to be hoisted up from the side of the deck and then transported into large roll off dumpster for removal from site."

Epoxy Design Systems had to adhere to US Coast Guard and EPA guidelines during the installation of over 100,000 lbs of new rebar and about 4.4 million pounds of new shotcrete material.

"There was huge safety factor to be considered concerning weight limits above and selective staggering of the restoration work below as to not compro-

**PIER**

continued on page 28

## EUROPEAN WINDOWS



- Custom Build
- Solid Vinyl Windows & Doors
- Steel Reinforced
- Tilt & Turn
- French Doors
- Bi-Fold & Sliding Doors
- Shutters & Screens
- Maximum Energy Efficiency
- Superior Design
- High Performance
- Available in 41 Colors



Phone: 770-287-9194 • Fax: 770-287-9828  
[www.europeanwindows.com](http://www.europeanwindows.com)



## PIER

continued from page 27

mise the overall integrity and capacity of the deck to support all the activity," Merritt explains. "Keep in mind the very deck that the platform was suspended from was the very same deck we were selectively demolishing from the underside and congruently the general contractor and several subcontractors were loading up the deck with steel, concrete, buildings and rides."

Epoxy Design Systems utilized a SPEC MIX® silo system to dispense the material into the shotcrete pump. QUIKRETE® Shotcrete MS - Fiber Reinforced is a single component Micro Silica enhanced repair material that achieves more than 9,000PSI at 28 days, and features very low rebound and permeability characteristics.

The QUIKRETE® Companies offers a full line of shotcrete products that can be applied through a wet or dry process to deliver high strength, high adhesion, low rebound and low sag in rehabilitat-



Photos courtesy Epoxy Design Systems