

edited by Tim Gregorski

GNOEC takes anti-skid stance

Back in the 1950s, the Louisiana parishes of St. Tammany and Jefferson voted to construct a 24-mile-long, two-lane bridge across Lake Pontchartrain, connecting the city of New Orleans directly to the Louisiana rural lands to the north.

southbound decks following a texturing process designed to increase wet weather skid resistance and prevent hydroplaning. The spec called for texturing the concrete bridge deck surfaces by abrading the surface with a high-

awarded to subcontractor Humble Equipment Co. based in Ruston, La., developer of the Skidabrader machine. The machine incorporates a process that reduces the cost of texturing both concrete and asphalt surfaces on large-scale roads, bridges and airport runway projects. It has been involved in a variety of applications around the country including the space shuttle runway for NASA, major airport runways, tunnels, interstates and bridges.

The bridge application in New Orleans called for texturing of the concrete surface to a minimum average surface depth of 0.050 in. or greater at a rate of 1,500 sq yd per hour.

Put to the test

Testing was to include 40 mph skid tests in accordance with ASTM E-274, sand patch tests in accordance with Louisiana DOTD617 and a FHWA-type outflow meter test.

Riley Boudreaux, field inspector for the Aims Group Inc., a consulting engineering company, monitored the testing procedures that involved the Skidabrader machine for the almost 100 lane miles of the Lake Pontchartrain bridge project.

"We ran the sand patch and outflow



The Skidabrader handles the job of texturing the surface of concrete.

The bridge opened for business in 1957. Approximately 11 years later, a separate, two-lane parallel bridge was built to handle the increase in traffic.

But for a few patches here and there, the Lake Pontchartrain Causeway's original concrete decks have survived the elements and traffic volumes that now exceed 30,000 vehicles daily. In 1998, with 30 to 40 years of wear and tear, the Greater New Orleans Expressway Commission (GNOEC), current caretaker of the bridge, decided it was time for a facelift.

"We increased the commuter toll from \$1 to \$1.50 to cover the \$60 million cost of the work," said Bryan Clement, director of engineering for GNOEC. "Over the next nine years, the bridge will see a lot of renovation, from call boxes and striping to piling reinforcement and work on the deck itself."

This project included removal and replacement of 120,000 pavement markers, spall repairs, permanent signage and restriping of both north- and

velocity impact method to expose the aggregate and provide drainage channels beneath the tire contact points.

The texturing portion of the job was



The texturing process for the Lake Pontchartrain Bridge in New Orleans took 25 days.

meter tests on every 10th slab and they were well within specs across the bridge,” said Boudreaux.

Exactly 843 sand patch tests averaged 0.054 in. and 2,350 outflow meter tests averaged 3.92 seconds. Skid tests showed comparable improvements in the skid resistance of the concrete.

“I was impressed with the results,” claimed Boudreaux. “The machine provided a printout of the prior day’s testing each morning. And I was impressed with the cleanliness of the jobsite.”

Boudreaux was referring, in part, to the machine’s self-cleaning process. As material was removed from the bridge deck, it was stored in a separate truck that disconnects from the high-velocity impact unit for transport and dumping. Removed material from the Lake Pontchartrain Causeway project was recycled as fill which provided the base material for an expanded employee parking lot at the northern terminus of the bridge.

The renovation project included 782,000 sq yd of surface to be textured and restriped in 150 days. The Skidabrader machine completed the project in 25 working days, and the



Removed material from the Lake Pontchartrain Bridge project in New Orleans was recycled as fill which provided the base material for an expanded employee parking lot at the northern terminus of the bridge.

striping and marking phase is complete, 90 days ahead of schedule.

“This machine has given our commuters a safe, quiet and attractive ride with a quick turnaround,” said GNOEC’s Clement.

Three of the Skidabrader machines were used on the Pontchartrain project. The machines included high-velocity

systems that allow the operator to fine tune the velocity, attack angle and machine speed for the best combination of end result and cost-effectiveness. ^{RB}

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