



By Steve Delgado

REPAIRING MARINE PILES WHILE MAINTAINING FULL PORT SERVICE AT SEATTLE'S TERMINAL 18

Seattle, WA



Some 40 marine piles under the busiest terminal of the Port of Seattle are being repaired without interruption to port services.

Terminal 18, or T-18, is one of the largest container handling and storage facilities of the Port of Seattle. An underwater inspection report had earlier revealed that many of the marine piles underneath the pier were suffering from corrosion, and identified 40 piles needing immediate repair.

Existing piles were identified to have the deleterious defect known as delayed ettringite formation (DEF). Port of Seattle engineers selected PileMedic by QuakeWrap because of the structural confining pressure the PileMedic jacket offers.



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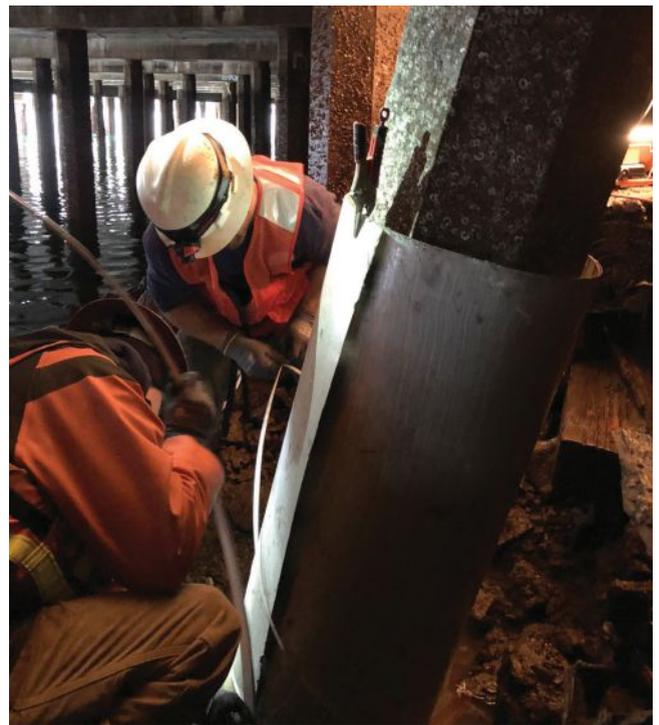


The current repair work — scheduled for completion at the end of 2017 — involves the retrofit of 40 prestressed driven piles of varying length located under T-18. No shutdown of service was needed during repair, with more than half of the piles 30 feet or longer, and in varying degrees of water submersion.

“PileMedic is an innovative and engineered product that allows your structure to remain in service while being repaired,” said Mo Ehsani, President and CEO of PileMedic developer QuakeWrap, Inc. Ehsani is

Centennial Professor Emeritus of Civil Engineering at the University of Arizona and is the first to develop and test this type of column and pile repair system, using fiber reinforced polymer (FRP) technology. Ehsani holds several patents on this unique strengthening and corrosion protection application.

PileMedic engineers designed an effective repair system for the Port of Seattle piles that would call for wrapping PileMedic laminate jackets completely around the piles, including the region just under the rocky base at the bottom, to the top of the piles just



PILEMEDIC ENGINEERS DESIGNED AN EFFECTIVE REPAIR SYSTEM FOR THE PORT OF SEATTLE PILES THAT WOULD CALL FOR WRAPPING PILEMEDIC LAMINATE JACKETS COMPLETELY AROUND THE PILES.

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below the pile cap. The PileMedic jackets create an annular space which is then filled with QuakeBond Underwater Grout. Using PileMedic jackets increases the axial capacity and the moment capacity of the piles.

The repaired piles, as shown in these photos, now have a circular finish and are approximately 22-inches in diameter. The piles are now sealed to resist further damaging corrosion, extending their service life for this important infrastructure seaport.

More information on pile repair and strengthening using FRP can be found at www.pilemedic.com or by calling 520-791-7000. ■

