

Challenge

Issue

The discharge hopper on a barge experienced corrosion/abrasion loss resulting in weld cladding with a cost of >\$475,000.

Goals

Provide alternative protection with cost savings and equal to or better performance.

Root Cause

High salinity from tidal operations along with intermittent wet/dry exposure and abrasive action associated with dredging resulted in high metal loss conditions.



Before: dredge hopper after initial coarse blast.

Solution

Preparation

High-pressure water wash to remove chlorides followed by coarse abrasive blast to SP10 cleanliness, with 3+ mil profile. Alternating strips were sweep blasted each day to get back to SP10 cleanliness. A 3/8" screed guide strips tack welded 36" apart to provide guide to lay down ARC BX1 at proper thickness for trowel finish.

Application

Applied ARC BX1 by screed guide/strip method and then trowel finished to a smooth, closed surface.



In process: screed strips welded to plate and application progressing.

Results

Client Reported

Ship captain had previously used ARC BX1 to line dredge pumps with great results. That experience prompted him recommend to ship owner to try ARC BX1 on discharge hopper. Dry dock was reduced by 50% and cost of labor and materials to coat was 20% less than clad and weld approach.

ROI

Cost of Weld Cladding Repair	\$ 475,000
Cost of ARC Repair	\$ 285,000

Savings

\$ 190,000

includes 7 days less dry dock



After: completed discharge hopper.