CASE STUDY

STEEL INDUSTRY

ARC Industrial Coatings

Rapid Structural Repair of a 24-inch Chrome-lined Process Water Pipe

Product Solution: Chesterton® ARC CFW-CR Carbon Fiber Wrap System and ARC 858 Coating

Challenge

A steel manufacturing plant discovered severe deterioration in a 24-inch chrome-lined process water line. Mill scale abrasion had worn through the bottom section of the pipe, exposing bare metal and accelerating corrosion. The pipeline was approaching failure, posing significant risks to production continuity and environmental compliance. The Environmental Protection Agency (EPA) had issued a warning that, without immediate repair, the facility would incur non-compliance penalties of $5,000 per day, making a timely and effective solution essential.

Solution

The maintenance and repair team selected ARC CFW-CR Carbon Fiber Wrap System to restore the pipe's structural integrity. The solution utilized ARC 858 Patching Material for surface rebuilding, fiberglass reinforcement for added stability, and multiple layers of epoxy-impregnated carbon fiber wrap to fully encapsulate and strengthen the weakened area.

Results

The pipe was structurally reinforced and fully functional within 24 hours. No EPA fines were issued. The plant avoided a full pipe replacement, saving hundreds of thousands in costs.

MTBR/Savings

- Avoided EPA fines (14 days x $5,000/day) = $70,000
- Replacement cost: $155,000
- ARC CFW repair cost: $20,000
- **Total Savings: $205,000**
- **ROI: 1,025%**

$ = USD

Total Savings: $205,000

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