

DiamondWrap® HTA™ 1" – 16" Odd Geometry Piping Repair in USA

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USA

Pipe Details

Customer: Large Refinery

Location: USA

Pipe Diameter: 1"-16"

Design Pressure: 700 psi

Pipe Contents: Sour Water

Pipe Defect: Internal corrosion at all welds in this section of piping.

Summary

Poor heat-treating practice led to failing welds in the Heat-Affected Zone (HAZ). These failing welds were then wrapped with a competitor's discount fiberglass repair product. This repair proved to be inadequate, and also started leaking. Citadel Technologies was called in by a distributor to engineer a safe and effective design that would keep the customer on-line until their next turnaround.

Citadel Technologies' team of engineers designed repairs for each defect according to ASME PCC-2 Article 4.1, and recommended a DiamondWrap® HTA™ repair solution to the refinery. Only 4 layers of DiamondWrap® were required to repair the defect at the given pressures. Repairs were designed for Tees, straight runs, elbows, reducers, and even flanges. Many of these geometries would be prohibitive of using clamps. Review the attached calculations and information on the engineering assessment as a reference for the competent design capabilities of Citadel Technologies.

A team of trained and certified installers installed 4 layers of carbon fiber over the specified repair area, according to the calculations prepared by the Citadel Technologies engineer. Below are photos of the completed repair:



This refinery was able to stay in full operation throughout the repair with no need to shut down or reduce capacity. Citadel Technologies successfully designed and implemented these repairs to get the customer through to their turnaround to prevent an unscheduled outage due to the imminent leaks from the failed welds and repairs. Citadel Technologies is still a trusted partner in corrosion repair to this refinery.

There are nearly 3,000 trained Clock Spring installers around the world who are qualified to provide repairs with Clock Spring products. Clock Spring regularly offers [training classes](#) for installers and can custom design training for individual company needs.

