

DiamondWrap® HTA™ 80" MDEA Pressure Vessel in USA

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USA

Pipe Details

Customer: Large Ammonia Plant in US

Vessel Diameter: 80"

Design Pressure: 315 psi

Vessel Contents: Amines, CO2

Vessel Defect: Severe internal corrosion

Summary

A nitrogen plant in the US had an MDEA stripper unit suffering from internal corrosion. Previous remediation consisted of welding patches on the outside of the unit, which resulted in stress concentrations and the possibility of under deposit corrosion. A third party stepped in to assist with the FEA on vessel and to determine the extent of the corrosion.

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 plant. Only 4 layers of DiamondWrap® were required to repair the defect at the given pressures. The design called for the repair to extend the entire length of the effected shell course.

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. The installation was implemented while the plant was in service, with no need for costly shutdown or reduction in capacity. 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 failing shell course. Citadel Technologies is still a trusted partner in corrosion repair to this plant.

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.

