

Contour Takes on External Erosion in Saudi Arabia Petrochemical Plant SAUDI ARABIA

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Pipe Details

- 254-mm (10-inch) line transporting butane
- 13 damaged locations
- External corrosion resulted in 60% wall loss.
- 27 Bar (391 psi)
- 53.7°C (128.6°F) operating temperature

Summary

- A 254-mm (10-inch) line transporting butane needed repair
- The line was damaged by external corrosion that had resulted in 60% wall loss
- 5 local Clock Spring trained technicians completed the Contour installation in 2 weeks
- The line remained in service during repair
- No hot work was required
- No negative impact on operations

A section of 254-mm (10-in) carbon steel pipework in a Saudi Arabian petrochemical plant had experienced significant wall loss and was in need of immediate repair. Approximately 60% of the exterior had eroded in 13 locations along a 23-m (75.5-ft) section of a line. Because the pipework was essential to plant operations, the owner wanted a repair solution that would not require the line to be taken out of service.

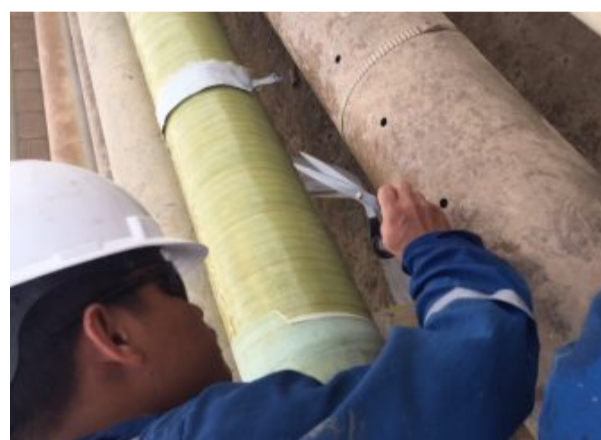
Having successfully implemented Clock Spring Company, Inc. repairs in the past, the owner looked to the company for guidance. The solution was to use Contour as a pressure reinforcement and containment repair that would deliver a safe installation within the exacting time constraints imposed by the plant.

Clock Spring engineers designed a repair to deliver 20 years (lifetime) of service with 27 bar (391 psi) design pressure and 53.7°C (128.6°F) design temperature. The repair would share the load with the substrate, assuming an average remaining wall thickness of 4 mm (0.16 in).

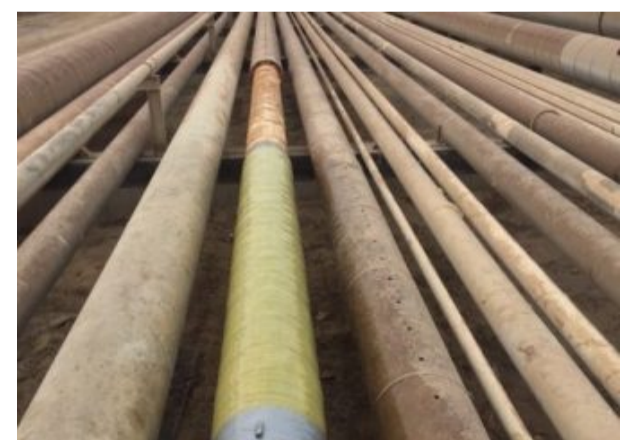
Working to the ISO 24817:2017 standard, which outlines requirements and recommendations for the qualification, design, installation, testing and inspection for externally applied composite repair systems to corroded or damaged pipework, pipelines, tanks and vessels used in the petroleum, petrochemical and natural gas industries, engineers developed a Contour repair.



A team of Clock Spring trained and certified installers applied the Contour repair.



Working in tight quarters, an installer applies the Contour repair by hand.



A team of installers completed a safe and reliable permanent repair in 2 weeks, restoring the line to safety without having to take it out of service.

Because the damaged pipeline was between other lines, access to the damaged area was tight. A team of 5 Clock Spring trained and certified installers prepared the pipeline for repair and applied the repair by hand, covering the areas with 8 layers of Contour following standard installation procedures.

The repair was completed over the course of 2 weeks, restoring the line to safety without interrupting operations and delivering a safe and reliable permanent solution within a demanding project schedule.

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.