

THERMO-WRAP™

14" OD WITH 12" OD BRANCH REPAIR, UK



Problem

A 2" hole located at the 6 o'clock position on a hydrogen chloride (HCl) absorber line was identified along with several small pinhole leaks within the refinery.

Conditions

The 14" OD vent pipe was intersected by a 12" OD branch and was carrying nitrogen gas (N₂) and HCl mist. While its operating pressure was 15 psi (1.5 bar), its design pressure was 290 psi (20 bar) as the line acts as a safety relief for the absorber system.

Solution

The leaks were sealed using a welded plate, which left the already odd geometry of the "Y" even more difficult to reinforce. Once the surface of the pipes and welded steel plate were prepared using power tools to remove rust, paint, and other foreign matter, the plate, area around the plate and all pits were profiled using Syntho-Poxy™HC, a high compression strength load transferring filler epoxy, to contour the pipe to match its original geometry. Several rolls of Thermo-Wrap were cut into strips prior to priming the pipe with a thin layer of Thermo-Poxy; this assures a wet on wet application. Two layers of Thermo-Wrap were applied using a 50% overlap around the line and in the "Y" section of the branch, assuring complete coverage. The pipe was then wrapped using 10 layers of Thermo-Wrap™, a 100,000 psi (6,895 bar) tensile strength fiberglass wrap system, providing hoop strength and structural integrity, now and into the future.

Result

The repair was carried out by certified technicians in a matter of hours. The line is now fully capable of maintaining the design pressure and safely supporting the vertical rise of pipe.



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