

Contour Reinforces Corroded Cooling Water Line

PIPE DETAIL

609.6-mm (24-inch)
diameter - 25.4-mm (1-
inch) elbow

6 BarG (87 psi) design
pressure

3.5 BarG (51 psi)
operating pressure

+12°C (+54°F) operating
temperature

7.925 mm (0.31 inch)
original wall thickness

SUMMARY

- Internal corrosion caused leaks in a 609.6-mm (24-inch) diameter cooling water line and a 25.4-mm (1-inch) T
- 2 Clock Spring trained and certified technicians from Interseal completed the Contour repair in 3 days
- The composite installation replaced a temporary repair, allowing safe operations to continue
- No hot work was required during the repair application.

Internal corrosion on a DN700 (28-inch) cooling water line in a refinery in Western Europe led to a loss of containment that required attention. The leak was stopped using a pipe saver, and a second leak on a DN 25 (1-inch) elbow from a nozzle off the DN700 pipe was addressed with a traditional leak box. The operator wanted the clamps to be wrapped with Clock Spring Contour to ensure the pipe would remain fit for purpose until the next planned shutdown for the cooling water system.



The leaks initially were contained using temporary clamps.



Clock Spring-trained installers from Interseal

A composite solution was ideal for this pipeline because the remaining wall thickness was insufficient for a welded repair. The thin pipe wall posed a welding risk because of the danger of accidental burn through and creating a larger leak.

used filler to reshape the leaking pipe in preparation for the Contour repair.

Having regularly used composites in the past to repair pipelines within the refinery, the owner turned to Clock Spring for a solution.

After careful deliberation, the decision was made to repair the lines using Contour, an engineered wet applied repair system, featuring quad-axial stitched fiberglass cloth applied in a wet-lay system with two-part epoxy and a filler material.



The completed repair gets a coat of paint.

Clock Spring trained installers from [Interseal](#), an authorized distributor in Antwerp, Belgium, inspected the pipe surface and grit blasted the areas deemed sound enough for repair. A team of 2 technicians applied filler material around the clamps to ensure there were no voids under the repair, creating a shape that would be easier to wrap. With the pipe prepared, the technicians applied 9 layers of Clock Spring Contour to the straight pipe and 14 layers at the T. When the composite was completely cured 8 hours later, the installers painted over the repaired area.

The entire repair was completed in only 3 days, with the cooling water system in normal service.

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.