

Contour Repairs Leak Under Insulation in Ammonia Plant

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Australia

Pipe Details

- 1-inch (25-mm) diameter
- 26 bar (377 psi) design pressure
- -33° C to 40° C (-27° F to 104° F) design temperature
- Schedule 40 pipe
- Pinhole defect
- Transporting Ammonia

Summary

- External metal loss in a 1-inch (25-mm) Schedule 40 pipe in an ammonia plant in Australia led to a pin hole and wall thinning on several areas of the pipe wall.
- Corrosion under insulation and applied to piping which operates at -33C
- Clock Spring Contour effectively addressed both problems.
- Clock Spring trained and certified technicians applied four layers of Clock Spring Contour to the damaged pipe.
- The Clock Spring solution created minimal disruption to plant activities.

Inspections at an ammonia plant in Australia revealed external metal loss had led to a pin hole in a 1-inch (25-mm) Schedule 40 pipe, and additional areas of the pipe wall were showing signs of significant wall thinning.

Plant owners needed to address the pin hole and reinforce the associated corroded areas to prevent further failure but wanted to minimize disruption to plant activities. This made Clock Spring Contour an ideal solution.

Clock Spring experts designed a Contour repair to ISO 24817 guidelines, which provide requirements and recommendations for qualifying, designing, installing, testing and inspecting the external application of composite repair systems to corroded or damaged pipework, pipelines, tanks, and vessels used in the petroleum, petrochemical, and natural gas industries.



Area of external metal loss



Pinhole plugged

Clock Spring trained and certified technicians plugged the pinhole and applied a fast-curing liquid metal over the plug. When the liquid metal was cured, the team grit blasted the line to SA2.5, removing all rust, coating, and mill scale to produce a near-white surface, and washed it with solvent before applying 4 layers of Clock Spring Contour.

With the repair complete, the line could be returned to service, and the plant could continue safe operations.

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.



Pin Hole Completed repair