Composite Repair Takes on External Corrosion at a Chemicals Factory

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Australia

Pipe Details

- 25-mm (1-inch) diameter.
- API 5L Grade B steel.
- 4 bar (58 psi) design pressure.
- 40° C to -40 °C (104° F to -40° F) design temperature.
- 3.9 mm (0.15 inch) original wall thickness.
- 1 mm (0.04 inch). remaining wall thickness.
- External corrosion.
- Ammonia pipework

Summary

- A Contour (now ThermoWrap) repair was installed on a 1-inch (25-mm) diameter API 5L Grade B steel pipeline with 3.9-mm (0.15-inch) wall thickness that had eroded to 1 mm (0.04 inch).
- A trained technician carried out the repair in 3 hours.

Inspections at a chemicals factory revealed significant corrosion on a 25-mm (1-inch) diameter API 5L Grade B steel pipeline with 3.9-mm (0.15-inch) wall thickness designed for 4 bar (58 psi) pressure and temperatures of 40° C to -40 °C (104° F to -40° F) that was transporting ammonia. When the corrosion was identified, the wall thickness had eroded to 1 mm (0.04 inch).

Because the factory owner did not want to take the line out of service while repairs were being made, it was necessary to choose a repair method that did not require hot work. The decision was to use CSNRI's Contour to address the severe corrosion.

The surface of the pipe was prepared using hand tools followed by solvent to remove dust, grease and any oil deposits. A trained and certified installer completed the repair within 3 hours. The line was in normal service throughout the repair installation.

External Corrosion

Completed Repair