

Case study – 42 inch hot air line

Integrity issue

A 42 inch hot air line was suffering from both external corrosion. Close to a flange face over time the external corrosion had created a through wall defect. A long term solution was sought and therefore an engineered Futurewrap repair was proposed. To reinstate the integrity of this section of this elevated 42 inch line, it was proposed to use a Futurewrap Glass/HT composite repair.

Design

The design of the Futurewrap Glass/HT repair was to strengthen the pipework and seal the through wall defect. The design parameters were; pressure 3 bar, temperature 140°C, design lifetime 20 years. It was assumed that the composite repair would carry all the applied load. The repair design resulted in a thickness of 4.8 mm (6 layers) of Futurewrap Glass/HT composite repair with an axial length of 300 mm.

Installation

The installation steps are shown in the photographs. The repair was applied off ropes as the pipework is elevated. The surface preparation was to Sa2.5. Full QA/QC measurements were made to demonstrate that the Futurewrap repair was applied in accordance with ISO 24817.

Summary

A 42 inch air line suffering external corrosion was repaired using Futurewrap Glass/HT composite repair. The repair was completed within 1 days reinstating the integrity of the pipework.



Initial status of pipework



After surface preparation



During repair application



Completed repair