

## Case study – 8 inch sea water return line

### Integrity issue

An 8-inch sea water return line was suffering from both internal and external corrosion. A temporary repair had been applied to the line to seal the through wall defect. A long-term solution was sought and an engineered Futurewrap repair was proposed. To reinstate the integrity of this section of vertical, overboard pipework it was proposed to use a Futurewrap Glass/Aquasplash composite repair, overwrapping the existing repair.

### Design

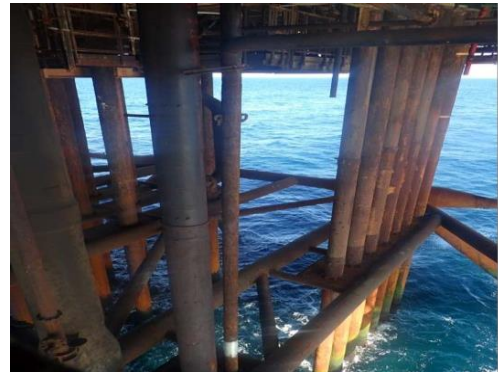
The design of the Futurewrap Glass/Aquasplash repair was to strengthen the pipework and seal the through wall defect. The design parameters were pressure 12 bar, temperature 50°C, design lifetime 10 years. It was assumed that the composite repair would carry all the applied load. A Futurewrap Glass/Aquasplash repair was used as the pipework after surface preparation was wet. The repair design resulted in a thickness of 6.1 mm (8 layers) of Futurewrap Glass/Aquasplash composite repair with an axial length of 12300 mm.

### Installation

The installation steps are shown in the photographs. The repair was applied off ropes. The surface preparation was to ST3. Full QA/QC measurements were made to demonstrate that the Futurewrap repair was applied in accordance with ISO 24817.

### Summary

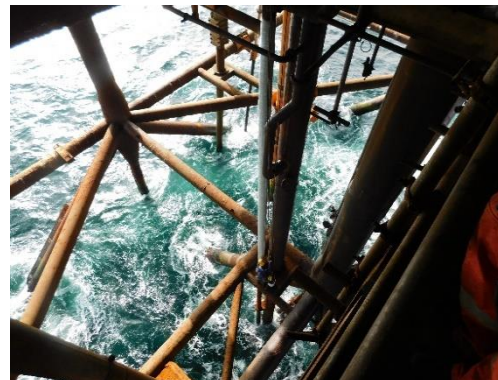
A 8 inch seawater return line suffering both internal and external corrosion was repaired using Futurewrap Glass/Aquasplash composite repair. The repair was completed within 6 days reinstating the integrity of the pipework.



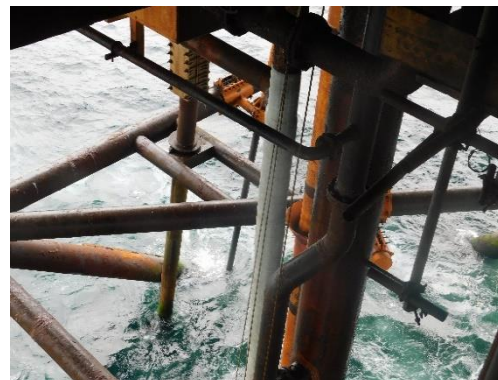
Initial status of pipework



After surface preparation



During repair application



Completed Repair