

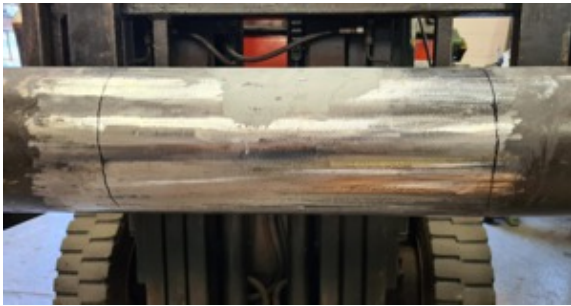
SYLWRAP Case Study

ASME PCC-2 401-III Qualification Testing

SylWrap HD Pipe Repair Bandage and Industrial Metal Epoxy Paste make a repair independently tested as passing ASME PCC-2 401-III qualification



An defect was machined into the pipe spool, reducing wall thickness by 86% to just 1mm



Industrial Metal filled the defect, rebuilding the pipe back towards its original thickness



Five SYL633HD Bandages were wrapped over the repair area, creating a hardened shell over 9mm thick



The repair was independently tested and verified to exceed 309.6 bar pressure, qualifying SylWrap HD and Industrial Metal as PCC-2 401-III compliant

Defect

ASME PCC-2 Appendix 401-III Short Term Spool Survival assesses the ability of a composite pipe repair system to restore the integrity of a weakened pipeline back to the strength of the original pipe.

The test was performed on an ASTM A106 Grade B pipe spool (carbon steel) - a type often used in high temperature environments such as steam and gas.

A defect was machined into the spool, reducing wall thickness down to 1mm. This accounted for an 86% weakening of the pipe.

Solution

Industrial Metal Epoxy Paste was filled the defect. It rebuilt the pipe back towards original thickness, whilst acting as load transfer medium between the spool and **SylWrap HD Pipe Repair Bandage**.

After Industrial Metal had cured and been smoothed using a flap wheel, five SYL633HD Bandages were wrapped over the top, creating hardened shell over 9mm thick around the pipe.

Result

Based upon the yield strength, diameter and original wall thickness of the pipe spool, the repair needed to withstand 309.6 bar pressure to be certified as PCC-2 401-III compliant.

Calibrated and certified pressure gauges were used to test the repair. It was witnessed and verified by a UKAS registered company, with results recorded using a data logger.

The repair reached 310.29 bar before failing, qualifying Industrial Metal and SylWrap HD to be used for making PCC-2 401-III repairs.