

## Clock Spring Repairs Damaged Girth Weld

### PIPE DETAIL

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305 mm (12-in) high-pressure gas pipeline

9.52 mm (0.37-in) wall

68 bar (980 psi) operating pressure

22° C (72° F) operating temperature

### SUMMARY

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- A high-pressure gas pipeline had suffered corrosion up to 74% metal loss and required repair at a circumferential girth weld
- A team of trained technicians installed 8 Clock Spring repair sleeves
- The installation was accomplished under water, where the adhesive and filler material used to bond the Clock Spring sleeve to the pipe produced a complete cure
- No welding was required
- The repair was completed within 3 hours with no interruption to operations

During an inspection, workers discovered a defect in a high-pressure gas pipeline. Corrosion was extensive, with significant damage adjacent to the circumferential girth weld, where there was as much as 74% metal loss. Additional challenges were present due to the location of the line, which was under water.



The sand-blasted pipe surface shows corrosion defects.



Certified installers place bridge units on each side of the weld.

The line needed to be repaired without being taken out of service, which meant the repair process could not include welding. The repair also needed to be done quickly, which led to the decision to use the Clock Spring composite repair sleeve and reinforcement system, which is uniquely designed for high-pressure transmission pipelines. Unlike other composite solutions, which need a

clean, dry bonding surface to cure, both the adhesive and filler material used to bond the Clock Spring sleeve to the pipe cure fully submerged in water.

A team of trained installers placed units on each side of the weld as a bridge, installing 8 Clock Spring repair sleeves in all and delivering a complete repair within 3 hours.



The team completes the repair with the installation of the third coil.

The simple installation safely restored the pipeline to service without introducing additional risks.

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.