

SYLWRAP Case Study

Desalination Plant 3000mm FRP Pipeline Repair

Gaps left between connecting rings in a 3 metre diameter FRP discharge pipe had to be sealed before a desalination plant in Saudi Arabia could go online



The chamber housing the leaking section of partly buried line was drained after it was flooded by water escaping when the system was first turned on



Minimal flow was restored to identify the leak cause, found to be gaps at each end of a connecting ring



AB Original pushed into seal all gaps in the pipe



Fibreglass Tape saturated with E190 Brushable Epoxy layered over the ring to build a composite patch repair

Defect

The FRP line was to return water not purified during desalination to the sea. Problems during installation meant a section was not connected properly.

This was only noticed after the pipe was pressurised, flooding the chamber. Once the chamber was drained, minimal flow was restored to identify the problem. Gaps were found at the ends of a 310mm wide connecting ring. These had to be sealed before the line could be put into service.

Solution

Sylmasta AB Original Epoxy Putty was pushed into the gaps between the ring and the pipe where it hardened to seal the leak. AB was chosen as its 2 hour working time was suited to the hot climate.

Reinforcing the repair using the normal method of a Pipe Bandage was not possible. The line remained partially buried and could not be wrapped.

E190 Brushable Epoxy was instead painted over the ring. **Fibreglass Tape** was then pressed on top and coated with more E190. The open weave of the Tape allowed E190 to saturate the fabric.

Layers of Tape soaked in E190 were built up, creating a composite repair which cured to provide an impact resistant shell similar to a Bandage - the crucial difference being it could be layered over the repair area rather than wrapped.

Result

The entire repair took 36 hours to complete, after which the line was pressurised. When it had been established that all leaks had been sealed, the pipe was buried, ready to serve the plant once construction of the facility was completed.