

SYLWRAP Case Study

Seawater Cooling System FRP Return Pipe Repair

A leaking 3 metre diameter FRP return pipe in a seawater cooling system is repaired in just two days, keeping downtime at an oil refinery to a minimum



The line was isolated, excavated and re-pressurised. So much water escaped that the hole dug to access the pipe became instantly flooded

Defect

The oil refinery in Saudi Arabia processed 400,000 barrels per day. Cooling processes on-site relied on water extracted from the Red Sea and transported by 3 metre diameter underground FRP pipes.

When the ground above a return pipe was noticed to be wet, the line was isolated and excavated. Once accessed, the line was re-pressurised. So much water escaped from several areas that the hole dug to reach the pipe was instantly flooded.

Solution

The line could not go back into service leaking such levels of water. All the while it remained out of use, the refinery could not produce oil at full capacity.

Needing a rapid repair, two epoxy putties were used to seal the pipe. **Superfast Copper Epoxy Putty Stick** was pushed into the smaller holes.

The 5 minute work time of Superfast Copper was accelerated by the climate. A putty with a longer work life was required for the bigger holes, so that it could be mixed and applied over a larger area.

Sylmasta AB Original Epoxy Putty was used because of its two hour work time and availability in bulk quantities beyond a 114g stick.

Result

Both putties achieved full properties after 24 hours. The line was then turned back on. No water was escaping, meaning the repair was a success and the pipe could be re-buried.

Refinery downtime was restricted to just two days and the repair cost less than £100 to make, a huge saving compared to replacing the leaking section.



Superfast Copper sealed smaller holes in the line



Sylmasta AB Original was used for larger leak areas because of its longer work time



The line successfully sealed prior to being re-buried