

SUPERFAST STEEL STICK

Case Study

900mm Steel Water Main Flange Leak Repair

Multiple cracks in a 900mm water main flange flooding an underground chamber in Malaysia are sealed in a repair previously thought impossible



Pressurised water was escaping multiple cracks in the main, flooding the underground chamber



Superfast Steel filled the cracks in the pipe, fixed plastic plug in place and encompassed the flange



A valve fitting was fixed in place with Superfast Steel, channelling the final leak path through the valve



A tap was fitted to the valve, containing the final leak and completing the 'impossible' repair

Defect

Corrosion had left cracks around a stub flange in the 900mm steel water main in an underground chamber. A repair clamp could not be fitted and there was no space around the main to apply tapes or bandages.

With no visible way of isolating the main, flow could not be shut off. The leak was therefore considered impossible to repair and left to flood the chamber.

Solution

Sylmasta attended the site with a team of Malaysian engineers. Water was pumped out the chamber and plastic plugs hammered into large cracks, reducing the amount of water escaping for a proper inspection.

A previously unknown stopcock was spotted down the pipe. With flow off, **Superfast Steel Epoxy Putty** was used to fill all visible cracks, permanently fix the plastic plugs in place and encompass the flange.

Pressure was turned back on and the repair inspected again the following day. Small cracks which remained were sealed with more putty. This left one final leak; a jet of water spraying out between the flange and pipe.

The engineering team leader hit upon the idea of using Superfast Steel to bond a valve over the remaining leak. Water was now channelled directly through the fitting, which was tapped off to seal it.

Result

The water company responsible for the main originally asked the engineers and Sylmasta to help reduce water loss to an acceptable, manageable level which did not require regular pumping out of the chamber.

Instead, the leak was completely sealed with the 'impossible' repair completed in two days.