

VIPER-SKIN™

12" OD CORROSION REPAIR, USA



Problem

A 12" OD carbon steel pipe was experiencing external corrosion damage and pitting up to 80% wall loss. A repair was required in order to maintain the design pressure of the system at 1,465 psi (101 bar).

Conditions

The section of the 1,465 psi (101 bar), 12" OD natural gas pipeline that was experiencing the pitting was located on a buried section of the pipe. The pitting occurred over a length of approximately 1' (30.5cm) of the pipe, which also had a concrete coating.

Solution

In order to promote adhesion to the pipe, the concrete coating was removed and the pipe was prepared in accordance with Sa2.5 or NACE 2. A 18,000 psi (1,241 bar) high compression strength filler called Syntho-Poxy™HC was used to fill the pits and form the pipe back to its original circumference. Thirty mils of Syntho-SubSea™LV epoxy was applied over the entire repair area to provide corrosion protective over the bare steel pipe, effectively locking out any atmospheric conditions from the surrounding environment. The Syntho-PoxyHC and Syntho-SubseaLV work together to transfer the hoop loading of the 1,465 psi (101 bar) carbon steel pipe into the high tensile strength of the Viper-Skin™ carbon fiber composite wrap, fully restoring the integrity of the pipeline.

Result

The Viper-Skin composite repair system eliminated the need to immediately replace the defective section of pipe. The entire repair was completed inexpensively in a matter of hours. Viper-Skin fully restored the pipe's strength to enable full pipeline operations.



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