

REPAIR TECHNOLOGY DEVELOPED BY AN INTERNATIONAL TEAM OF ENGINEERS

EFFICIENCY

GC Wrap is the highest quality fiberglass and carbon fiber systems used to rehabilitate and restore the original working strength of damaged or corroded transmission pipelines and pressure vessels. With full compliance to ASME PCC-2 and ISO TS 24817 technical standards, service life extensions are possible up to 50 years.

PIPING PROTECTION

GC WRAP can be applied on tees, elbows, and, of course, straight runs of pipe, in confined spaces and on irregular surfaces – wherever structural reinforcement or leak containment is required. The adhesive properties of the urethane and the use of an epoxy primer allow it to be applied to most substrates.

COMPLIANT TECHNOLOGY

GC Wrap is compliant to the ISO TS 24817 technical standard, ASME B31.8, .4, .G and PCC-2 Art. 4.1, 4.2, as well as API 570. Please refer to: API 570, Section 8.1.4 – Non-welding repairs (on stream). The repair technology with composite materials is approved by the UDT.

PROBLEM

In practice, it is very common that after the relief of gas is closed with a steel clamp or repair band on the gas transmission pipeline - the repair site is buried without the required corrosion protection of the pipeline section, along with the band or clamp itself. It is also common to see applications of the anti-corrosion tape itself - made directly to the clamp or band - made incorrectly. These applications unfortunately do not protect the repair site in any way. The irregular shape of the band itself, along with the bolted connections, makes this an area that needs to be insulated using appropriate materials. Although this application must be carried out in several stages, it is a necessary action to maintain the integrity of the isolation on the transmission pipeline.

APPLIED SOLUTION

In the case described here, permanent corrosion protection was carried out on a steel repair band placed on a DN250 mm diameter transmission pipeline to close off natural gas relief. First, the existing isolation on the pipeline was removed at a distance of 100 mm on each side of the repair band. Afterwards, surface preparation was carried out using a MONTI Bristle Blaster brush grinder. The irregularities of the clamp and the transition between the clamp and the pipeline were protected with an anti-corrosion material (compound and petrolatum tape) of A30 class. HSEP epoxy primer was applied to the surface so prepared, followed by four layers of GC HYDRO WRAP composite repair bandage. Finally, C50 grade anti-corrosion tape was wound over the entire repaired length.



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RESULT

In the case described here, materials which were used, firstly, made it possible to compensate for the irregular shape of the clamp together with the fittings (A30 grade mass and anti-corrosion tape), and secondly, a durable coating with high hardness was created thanks to the use of GC HYDRO WRAP water-activated composite material. The use of composite technology on transmission pipelines is long-term (the life of the repair according to PN EN ISO 24817 is 20 years). It allows to obtain not only structural reinforcement of the repaired pipeline section, but also an abrasion-resistant coating with high hardness (>74 on the SHORE D scale). A section of the pipeline with regular round shapes protected in this way can be properly protected with C50 class tape isolation.

