

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

Pipelines are much more likely than gas pipelines to experience internal corrosion. In the case of internal corrosion, it is necessary to design a repair solution based on the inspection protocol and each time agree with the operator on the time for which the repair is designed. Since composite materials are always applied on the outside of the pipeline, the longer the service life, the longer the length of the repair muffle. The application of composite materials is a process that is controlled from start to finish, and all its steps are recorded and then approved. According to PN EN ISO24817, in addition to the engineering calculations that are made each time for a particular repair, it is important to ensure that a validation protocol is always completed during the installation process.

APPLIED SOLUTION

Based on the study drawn up following the pipeline pumping, the operator ordered the repair of two internal corrosion defects on an oil pipeline with a diameter of DN350. Gascontrol Polska sp. z o.o. engineers carried out calculations based on which a composite repair muffle was designed. The material used is GCWrap, which is made of fiberglass. Its installation is very simple because it only requires using a two-component primer and then activating the bandage with water. Due to the low ambient temperature, a tent was set up at the repair site. This resulted in the right temperature - +15C, which ensured quick polymerization of the materials. Applying eight layers of the material over a length of 400 mm took the trained specialists about two hours.

RESULT

The use of composites made it possible to perform the repair without taking the pipeline out of service. Later the same day, C50 grade tape insulation was wound over the hardened coating of the composite material, completing the repair. All data on the renovation was recorded in the repair validation protocol, which was included in the as-built documentation.

