20 years of BWB surface protection for steel pipes – a story of success

BWB (Berolina Wickelrohr Beschichtung/ Berolina pipe surface protection) system's anniversary

"First tests in 1995 have been promising" says Ralf Odenwald, the President of BKP Berolina Polyester GmbH & Co. KG.

The introduction of the GRP coating for steel pipes 20 years ago marketed as the BWB system was a single story of success for BKP Berolina. Meanwhile more than 110,000 meters of gas pipes (DN 100 – DN 1,400) have been coated with this special and highly resistant GRP coating. Our BWB system contains resin impregnated glass fibres tangentially and axially wound on the PE coated steel pipe. Meanwhile an environmentally friendly and styrene free resin is cured by using UV-light. The coating protects the steel pipes from being damaged by obstacles in the soil when being installed by horizontal drilling or similar methods, which might cause corrosion.

The on-site protection of welded joints is applied by attaching glass fibre mats combined with resin and consequently being cured by UV-light. The fact that the BWB system is not sensitive to the pulling direction came up as a unique selling point. This gives the contractor more flexibility when putting the pipeline together and avoids mistakes on site. In case of stuck drillings pulling back the pipeline is still an option as far as soil and equipment conditions allow it.

Holding the 90 meter long pipe section in right position

1995 first test have been performed in cooperation with the former Wingas GmbH. Especial testing device has been developed to determine the mechanical level protection. The results proved that the protection of a steel pipe coated with the BWB system is three times better than a polypropylene coating and eight times better than a polyethylene coating.

When moving from Berlin-Staaken into the new factory in Velten near Berlin BKP Berolina replaced the formerly used styrenated resin by an environmentally friendly and styrene free resin. For special applications where the pipeline is winched into an existing host pipe BKP Berolina developed in 2011 additional GRP spacers already applied together with the BWB

coating. These spacers are 50mm (2") thick and proved the advantages when exchanging gas pipeline near Schluechtern (Germany) last summer (2015):

Casing tube DN 1,200 (black) – BWB-coated steel pipe (green) with GRP-spacer (brownish)

Target pit close to highway ramp

On a section of the MIDAL (Mitte-Deutschland Anbindungs-Leitung - a connecting gas pipeline in the centre of Germany) some divergences in the galvanic protection have been determined through a routine monitoring. The PE-spacer rings had caused damages in the PE-coating of the existing pipeline. The section affected at highway ramp Schluechtern North near Fulda had to be removed and replaced by BWB system coated pipes DN 800 with additional GRP spacers. To winch in the 90 meter long pipe section into a casing tube DN 1,200 a 40 mm thick steel rope was pulled by a 80-ton winch through a 45 degree deviation. Michael Muth, manager at GASCADE Gastransport GmbH, is highly satisfied by the quality of the BWB-system: "The BWB system combined with the factory-installed spacers withstands any situation and proofed its reliability by 100 percent."

The BWB system has been implemented at WEDAL, JAGAL, OPAL, MIDAL and NEL (major gas transporting pipelines in Germany) to ensure optimized quality when using trenchless installation methods.

Contact and more information:

GASCADE Gastransport GmbH

Kölnische Strasse 108-112, 34119 Kassel, Germany

Phone +49 (0) 561 934-0
Fax +49 (0) 561 934-1208
e-mail kontakt@gascade.de
www.gascade.de

BKP Berolina Polyester GmbH & Co. KG

Heidering 28, 16727 Velten, Germany

Phone +49 (0) 3304-2088-100
Fax +49 (0) 3304-2088-100
e-mail info@bkp-berolina.de
www.bkp-berolina.de