Pipeline for potable water d 630 x 37,4 SDR 17 PE 100
Water works Sandkrug – EWE Netz GmbH Oldenburg
1. Stage of construction

Project description

The problem was a fifty years old cast iron pipeline of 400 m which had to be renovated.

It was one of many untreated water transmission pipelines DN 400, 500 and 600, which received water of approximately twenty fonts in that water catchment area. Approximately 60% of the complete potable water demand of the city Oldenburg are distributed by this pipeline. Due to the high age and a plant cover of approx. 25% within the pipeline as well as the high requirement on the transmission pipeline, EWE Netz GmbH Oldenburg (a 100% subsidiary of the EWW AG) decided to extend the pipe dimension up to DN 600. Also it had to taken into consideration that the city Oldenburg have actually 160 thousand habitants.

Comment of the problem

There were only one day time for the final installation resp. connection works and therefore the distribution of the city had to be taken over from two other waterworks and a 5000 m^3 pure water reservoir – for this date the 20th to 22nd July 2007 had been chosen.
It was the first holiday week, so the least consumption season of the year. (Approx. 40% lesser than the average of the year).

At first several transmission pipelines had been connected. Furthermore, 60m old cast iron had been exchanged against PE 100 transmission pipeline.
Last, the PE 100 pipeline of 630 mm had to be distributed to 2 water works inputs DN 400 PE 100.

The necessary butterfly valves, gate valves and hydrants had to be integrated, too.

All components had to be disinfected.
The complete welded pipeline had also to be disinfect.

Construction

As far as possible, we preassembled the fittings via butt welding in the water works in order to install the complete welded fitting into the open trench. The delivered 12 m lengths had been connected via electro fusion couplers.

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The beginning was on Saturday at 8 o'clock in the morning. On Sunday 2.00 am, already 18 hours later, the critical section had been done.

Result

The decision to use PE 100 material for the installation of the new pipeline had good reasons:

- easy installation
- good handling
- flexibility of pipe
- very less inside roughness (because the pure water contains a lot of iron and manganese – danger of heavy sediments)

The strict laws by forest- and environment authorities only allowed a small width of installation. Also in this case, PE 100 material has, due to low weight, its advantage (PE 100= 69 kg/ m and cast iron= 170 kg/ m).

Planning, preparation as well as construction management have been organized by Mr. Marco Lampe of company EWE Netz GmbH Oldenburg.

Delivery volume

- 396 m pipe 630 x 37,4 mm
- 6 pcs. stub flange d 630mm with PP - backing ring
- 1 pcs. reducer d 630 – d 400mm
- 5 pcs. tee d 630 with reduced outlets (160, 225 and 315 mm)
- several bends formed out of pipes d 630 mm until 90°

Abb. 1: Preparation of PE 100 fittings d 630 mm

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Abb. 2: Installation in pipe trench

Abb. 3: Complete installed and welded PE 100 Tee 630/400 mm

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Service of FRANK

- ✓ Delivery of complete pipes
- ✓ Delivery of complete fittings

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