

PRE-project, Baltic Sea beach, Heiligendamm, Germany 2017

Case Study



Location

Baltic Sea beach Heiligendamm,
Germany

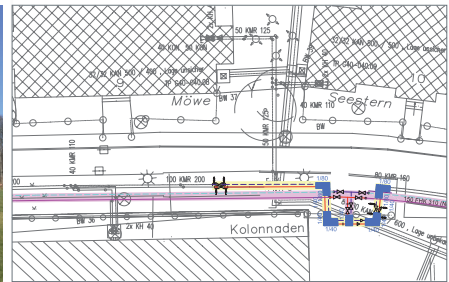
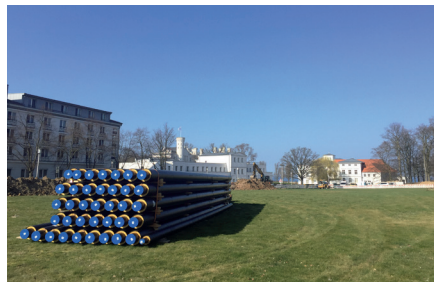
Products

PRE DN 200
FHK DN 150

GERMANPIPE®
BRUGG

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District heating at the Baltic Sea beach

The striking white buildings along the Baltic Sea beach are what give Heiligendamm its nickname of the "white town by the sea". The "string of pearls" of white buildings has been supplied by a newly laid district heating line since 2017. Both old and new district heating lines run here, for which a total of €1.1 million was invested. The PSP DN 200 pipe was connected to the existing DN 250 plastic casing pipe close to the tracks of the Molli narrow-gauge railway. German Pipe PREMANT pipes and moulded parts were delivered and laid to cover a length of around 250 m.

As usual, there were some other supply lines to cross. In terms of statics, the pipe was measured for 16 bar. It was relatively easy to position the calculated U and Z expanders along Kühlungsborner Straße. Constructed from 1 x 2 m elbows, no installation sleeves were required.

PREMANT and FLEXWELL

This situation changed between the spa building and the Grand Hotel. The areas between adjacent buildings and paths were narrow and a different method was required. The water, which is up to 110°C, flows here at a depth of up to 4 m. With the BRUGG district heating cable DHC, this section could be finished using directional drilling and without having to dig up paths, parking areas and lawns. The transition from PREMANT to FLEXWELL is key here. As a result of the 16 bar internal pressure, the expansion force at the ends is approx. 45 kN. To absorb this stress, the subsequent PREMANT pipes and moulded parts were statically measured.

Some of the force is absorbed by the surface friction, which amounts to approx. 4 kN/m. The majority of the counterforce, however, is achieved by means of the side compression of the PSP elbows against the ground. The steel casing of the FLEXWELL district heating cable is also helpful as it applies or transfers some of the counterforce. The third and fourth construction stage ran from the Villa Perle, which was completely reconstructed in 2013, to behind the Hotel Residenz. Another 600 m of FLEXWELL 200/310 pipes were buried, interrupted only by connection points and intersections. Pipes were shut off to establish the connection with the existing PSP pipe. To allow subsequent reconnection, there are six ball valves over an area of just 20 m². The "FWN-Ausrüstung Heiligendamm – 1. bis 4. BA" project (Heiligendamm district heating upgrade – construction stage 1 to 4) shows how an optimum line can be created thanks to the clever planning solution of combining rigid and flexible pipe systems. German Pipe compiled the static calculations. Flow temperature: 110°C
Flow temperature: 110°C
Nominal pressure: PN 16

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