

HOBAS® Pressure Jacking Pipes for a Sea Outlet in Bulgaria

Precise Jacking in Sensitive Environment

420 meters of HOBAS Pressure Pipe D_e 860, SN 640,000, PN 6, have been jacked in Bulgaria to convey purified wastewater from a treatment plant into the Black Sea.

Golden Sands is a popular sea resort at the Black Sea in Bulgaria. In its north, lies a wastewater treatment plant which was built 25 years ago to serve a population of 12,000. It is currently technically modernized, enlarged and extended by tertiary treatment (removal of nitrogen and phosphorus). In future, the treatment plant will have a capacity to serve 72,000 people – according to a forecast, this is how many there will be by 2030. Riviera, Chaika and Alen Mak are also planned to be added to the plant's catchment area. The project is financed by the European Union and the Country.

When construction works commenced in 2009, the municipality examined different possibilities for conveying the purified water through a pressure pipe one sea-mile into the Black Sea. After consulting with HOBAS Bulgaria, the designer Plamen Kitipov suggested a solution for which pipes are jacked from the artificial pier to the water treatment plant and from the pier into the sea. This option would neither affect the beach with its protected dunes nor the artificial quay wall of the harbor. Alternatively, the wall could have been circumvented, which would have increased the project's costs considerably. Jacking therefore became the installation method of choice.

The smooth outer surface of HOBAS Pipes that ask for lower jacking forces and the compact wall structure, thanks to which there is less excavation material to dispose of, convinced the decision maker. Stoyan Kerin about relying on other pipe producers: "On a project with this much responsibility, we prefer utilizing the original – HOBAS Pipes."



After a lot of preparatory work – a circular shaft was excavated at the pier and repairs were made on the treatment plant – installation started at the end of the season. It was not possible to install an intermediate jacking station on the two times 210-m-long jacking alignment since a pit in the sea would have been too costly. This is why the HOBAS Pressure Pipes were produced with a high stiffness of 640.000 N/m², despite ideal soil conditions (wet sand), and were jacked on one drive. A Herrenknecht jacking machine first made its way from the quay beneath the artificial bay, and in a second step pressure pipes were jacked from the quay out into the sea.

After the installation was completed, Boris Karadenchev, Vice Mayor of Varna, felt relieved: "This project proved quite tricky regarding pipe installation. HOBAS however once again proved that apart from high quality pipes, there are also first-class consultants who accompany you through the complete project."

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Year of construction
2013

Construction time
3 weeks

Length of pipeline
2 x 210 m

Diameter

D_e 860 mm

Pressure class

PN 6

Stiffness class

SN 640 000 N/m²

Application

Sea outlet for treated wastewater

Client

Varna Municipality

Designer

Ozon

Constructor

DZZD Devnya Trade

– Struma Imoti

Advantages

the beach is not affected, fast and easy installation, outstanding hydraulic properties, comparably smaller diameter, high stiffness classes available