

XXL HOBAS® GRP Jacking Pipes replace Concrete Railway Culvert

HOBAS® Pipes D_e 3600 Jacked Beneath Rail in Gdańsk, PL

Since the concrete culvert crossing beneath the railway line E65 Warsaw - Gdynia in the Polish city Gdańsk could no longer handle high water levels from the nearby stream, it was decided to replace it. For this purpose, HOBAS Pipes with an external diameter of 3600 mm were jacked beneath the railway embankment.

The 2 x 1.2 m concrete culvert could no longer handle the nearby Królewski stream's elevated water levels during periods of heavy rain, which occasionally flooded the surrounding area. There was no doubt it had to be replaced. The first respective plan involved two parallel 2 x 2 m square concrete culverts, laid in open trench. It soon became clear however that the design was unsuitable for the given circumstances and that a different approach was necessary. In 2013, a new rehabilitation project was initiated involving the construction of a single circular. It was decided to install new culvert by means of jacking and to use HOBAS GRP Pipes with a diameter of D_e 3600 for this purpose.

The jacking works were carried out using a set of hydraulic jacks and a special cutter head designed for the project. Where the routes of the old and the new pipeline intersected, the old culvert was demolished and removed. At the end of the installation process the annular space between the old and new structure was grouted with cement. For safety reasons, the rail tracks had to be equipped with beams. In the case of any ground movements caused by the jacking process, these beams would transfer the load from the trains evenly to the rails.

The E65 is a main-line railway with trains passing every 3 minutes. Although the trains' speed was reduced to 30 km/h in this section because of the construction works, the trains could stay in operation without interruptions thanks to trenchless installation. The contractors, PUT INTERCOR from Zawiercie and PROI2 from Katowice were highly satisfied with the project result – they have already installed HOBAS Pipe Systems several times in the past and appreciate the products' high quality.

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Year of construction
2013

Construction time
2 months

Diameter
D_e 3600

Pressure class
PN 1

Stiffness class
SN 40000

Application
Railway Culvert

Client
PKP Polskie Linie Kolejowe

Contractor
Przedsiębiorstwo Usług Technicznych (PUT) INTERCOR, PROI2

Advantages
No interruptions of the rail traffic, non-conductive and highly durable pipe material

