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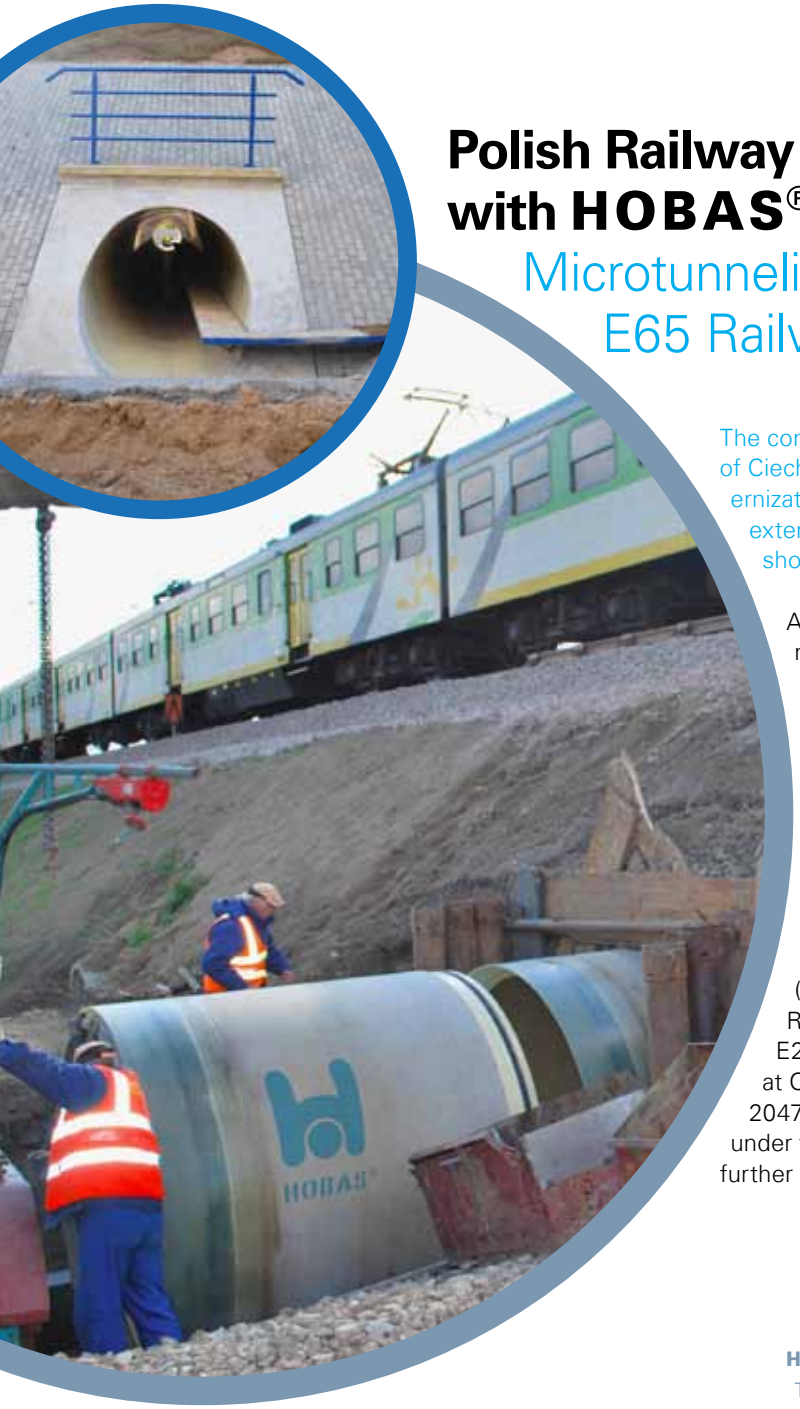
PipeLine

HOBAS®

HOBAS® Railway Projects



Polish Railway Project on the Fast Track with HOBAS®

Microtunneling GRP Culverts under the E65 Railway Line

The construction of HOBAS Culverts beneath the railway line in the area of Ciechanów was carried out as part of the nationwide project "Modernization of E65 Warsaw – Gdynia Railway Line". The main aims of this extensive project were to improve travel comfort, increase safety and shorten the journey by 27 minutes on this 103-km-long section.

An initial idea was to construct the culverts under the railway line near Ciechanów in open trench. In order to save time and respect the given time schedule, the method was, however, abandoned in favor of microtunneling, a trenchless method. HOBAS Pipes were microtunneled to establish three culverts 16, 24 and 32 meters in length, 1720 mm in external diameter and a nominal stiffness of 100000 kN/m², and one 22-meter-long section was implemented with HOBAS D_e 2047 pipes, SN 64000.

The client, the Polish State Railways (PKP Polskie Linie Kolejowe S.A.), was already familiar with HOBAS Products, which are technically approved by the Road and Bridge Research Institute (IBDiM) and the Polish Railway Institute (IK). The first HOBAS GRP Railway Culvert, a DN 1300 section, had been installed under the E20 railway at Mienia in 2003. One year later, the second followed at Ostrów Wielkopolski using a pipe with an external diameter of 2047 mm. 2005, a line D_e 1229 to 1434 in diameter had been installed under the railway between Mińsk Mazowiecki and Terespol. Numerous further projects followed.

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The engineering team from HOBAS worked closely with the design office in order to determine adequate stiffnesses of the pipes, and the load capacity was calculated on the basis of the finite element method (FEM). Highly experienced in directional drilling and similar jobs, Polish contractor Przedsiębiorstwo Przewiertowe MOTYL made sure that microtunneling ran smoothly and was completed successfully. In order to streamline the installation process and save on time, the company ordered angular cut pipes and equipped these with precast headwalls from HOBAS Poland. The works were this way completed in a couple of days only.

Constantly scrutinizing and double checking the performance of pipes to provide clients with optimal solutions, HOBAS decided to monitor the performance of the employed D_e 2047 pipes. To this end, external experts in strength analysis were assigned to measure the pipes before and after they were installed. After two years of operation they will be measured once again for final results.

Tweet

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Year of construction
2010 - 2011
Total length of pipe
94 m
Diameter
D_e 1720, D_e 2047
Pressure class
PN 1
Stiffness class
SN 64000
SN 100000
Application
Stormwater, animal passageways

Installation method
Microtunneling
Client
PKP Polskie Linie Kolejowe S.A.
Contractor
Przedsiębiorstwo Przewiertowe MOTYL
Advantages
Quick installation, corrosion resistance