

Rehabilitation and Completion of a Sanitary Network, Part I and II

In 1997, the city Olomouc was hit by heavy floods which revealed the miserable condition of the sanitary sewer net. This forced the magistrate to launch an extensive rehabilitation project of the sewage system.

The network is located in the central part of a river, in a lowland made up of drifts, quicksand, and non-cohesive earth with a high level of ground water - circumstances that require an open cut installation. In some parts, the suggested pipeline gradient indicated 0.32 per mille. The sewer runs under a net of tramway rails so that it has to withstand rail impacts as well as circulating currents.



One of the magistrate's wishes was that the construction time should be kept as short as possible so that the tramway traffic would not be interfered and the strain on the inhabitants is minimized. All these requirements of the magistrate and the technical solution of the project offices affected the decision-making process concerning the pipe material. HOBAS® CC-GRP Pipe Systems were chosen due to their hydraulic parameters, provable leak tightness of the system and the low weight of even large profile HOBAS® CC-GRP Pipes.

The whole construction was divided into nine individual construction parts, since each of them called for a different kind of open cut installation. With HOBAS® CC-GRP Pipes of DN 1800, DN 2000 and DN 2400 the trench had to be cased with a Larsen wall.

Given the small inclines and non-cohesive earth, the pipe bedding had to be made of reinforced concrete with a

longitudinally positioned steel girder to safeguard the 0.32 per mille gradient. The Pipe itself was anchored in the reinforced concrete base with steel plates and was embedded in an ash-cement mix. While installing the DN 1400 Pipes the supplier had to tackle the quicksand problem and find methods of laying the Pipes gradually in individual sections. The great difficulties with quicksand can be illustrated by the fact that it even had to be nitrogen frozen.



The completion of parts I and II of the sanitary sewage net was financed by the magistrate of Olomouc and the EU. The selective procedure was won by the consortium of VCES a.s. Praha and SKANSKA a.s. Praha. The construction of the first collectors started in 2004 and is expected to be completed by 2008. Under this contract, HOBAS Czech Republic will supply a total length of 16287 m Pipes and Fittings valued around 5 million Euro.

Overview	
Year of Construction	2004-2008
Total Length of Pipe	16287 m
Pressure Class	PN 1
Stiffness Class	SN 10000
Diameter	DN 150-2400
Installation Method	Open cut
Application	SewerLine®
Client	Magistrate of Olomouc
Contractor	VCES a.s. Praha, SKANSKA a.s. Praha
Advantages	Difficult geological conditions were overcome without difficulties