

## No Rest for HOBAS Hungary Reconstruction and Extension of the Sewer Network Debrecen, HU

Debrecen in East Hungary is the second largest city of the country. In 2005 the city and its surrounding villages launched a massive reconstruction and extension project of their sewer system and waste water treatment plant for which 88.5 million Euros were invested.

The project was financed with funds from European Union (58%), by the Hungarian government (32%) and by involved municipalities (10%). Due to its complexity the project was broken down into five smaller lots of which two were realized with HOBAS CC-GRP Pipe Systems: the renovation of the old sewers and collectors in the city center and the construction of a new sewer main in the rapidly developing south-eastern part of Debrecen.

The sewer system of Debrecen's historical center was built during the first decades of the 20<sup>th</sup> century. A survey showed that the egg shaped collectors that had originally been established with concrete needed to be renovated urgently. Various signs of deterioration were detected and a safe discharge of the given amounts of water could no longer be guaranteed, especially not after heavy rains. It was not easy for the client to decide between the various renovation methods.

A complete hydraulic map of Debrecen had to be prepared first. This provided the minimal load capacity of the collector. A detailed hydraulic calculation and a first evaluation of the conditions and circumstances along the route and in the affected street (narrowness, traffic) soon made the decision clear: The installation would have to be conducted trenchless and mainly by relining. HOBAS® NC Line® Pipe Systems were chosen as most suitable pipe material. Since the groundwater contains aggressive substances corrosion resistance was one of the investor's greatest concerns. Leak tightness, a long lifespan and structural stability were criteria to which equally great importance was attached.



After a thorough preparation phase the construction works were taken up in June 2007. The pipes' diameters in the city center range from DN 350 to DN 1400 and have been produced with a stiffness of SN 10000. 3 m long HOBAS Pipes were used aside from the standard 6 m lengths to facilitate the installation in the narrow streets and deep trenches. Head of the construction consortium was the company Keviép and its partners were Betonút and KÖZGÉP.

The second lot that was implemented with HOBAS Products was situated in the rapidly growing south-eastern part of Debrecen where a 7.5 km long new collector was established with HOBAS® SewerLine® Pipes. The diameters of the SN 10000 pipes varied between DN 400 and DN 800. HOBAS® Pipe Systems were chosen because of the products' light weight and easy installation. The construction consortium for this project consisted of TEERAG-ASDAG and Swietelsky.

With two successfully completed projects in hand, HOBAS Hungary is kept on the go: The construction works for the extension of Debrecen's waste water treatment plant for which have already begun in October. Just as the proverb says, "there is no rest for the best".



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Year of Construction  
**2007 - 2009**

Installation Time  
**30 months**

Total length of pipeline  
**12 km**

Diameter  
**DN 350 – 1400,**

**NC Profiles:**  
**400 x 600 mm –**  
**1200 x 1800 mm**

Pressure Class  
**PN 1**

Stiffness Class  
**SN 10000**

Installation Method  
**Relining**

Application  
**NC Line®, SewerLine®**

Client  
**Stadtverwaltung**  
**Debrecen**

Engineering Office  
**Keiterv Plusz,**  
**Miskolc Ungarn**

Contractors  
**Keviép, TEERAG-ASDAG**

Advantages  
**Long lifetime, easy**  
**installation, chemical**  
**and corrosion resis-**  
**tance, excellent**  
**hydraulic**  
**properties**

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