

# Rehabilitation of Sewer Systems in the Heart of Europe – Circular and Non-circular HOBAS® GRP Pipes Renovate Aged Sewer Networks in Belgium and Luxembourg

## Project Data Brussels

Year of Construction

**2012-2014**

Construction Time

**3 years**

Total Length of Pipe

**15 km**

Product Range

**NC Line Profiles**

Diameter

**Cross-sections of**

**500/1000 to 1380/2070**

Pressure Class

**PN 1**

Wall Thickness

**12 to 40 mm**

Application

**Sewer rehabilitation**

Client

**Brussels Municipalities**

Contractors

**Sodraep, Denys, Galere,**

**Kupem, Renotec,**

**Viabuild**

Advantages

**Optimal hydraulics, min-**

**imized disturbances due**

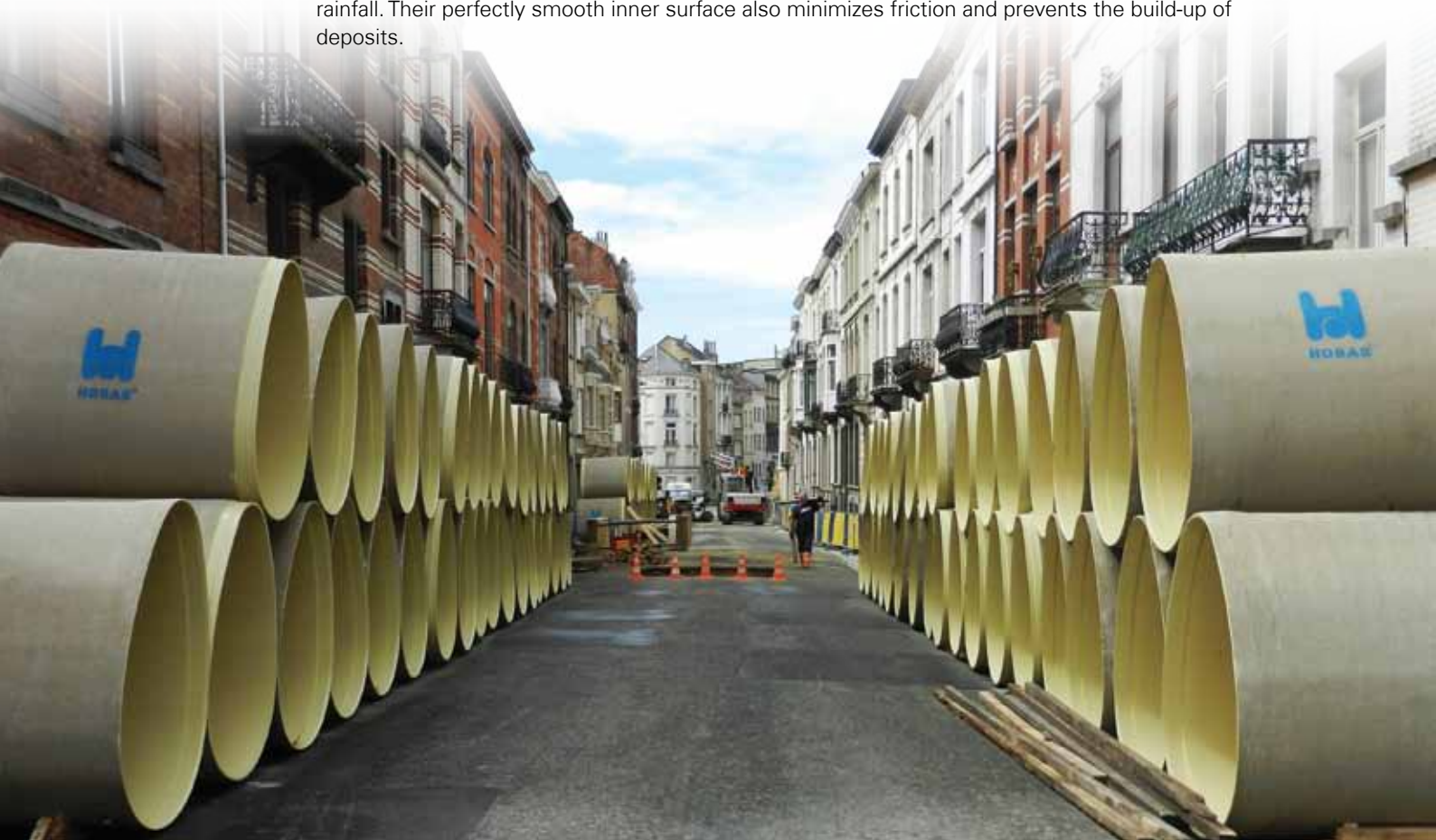
**to installation method,**

**easy installation**

As part of a campaign to rehabilitate the sewer networks of the Brussels-Capital Region, HOBAS supplied 15 kms of non-circular GRP Profiles 500/1000 to 1380/2070 mm. In the Belgian city of Nivelles, HOBAS NC Line Profiles ensured a safe relining rehabilitation in difficult conditions. And in Luxembourg, HOBAS GRP Pipes were installed by means of relining to renovate a damaged culvert.

The Brussels-Capital Region comprises 19 municipalities and is home to around 1.2 million inhabitants. The region's sewer network was built a century ago and is already in a rather poor condition. The more than 2,000 km of brick and concrete sewers, around one hundred main sewers, as well as approximately 50 stormwater drainage lines and pumping stations all show material fatigue and undercapacity. Their highly deteriorated condition leads to cracks and consequent floodings, which had already negatively affected the surrounding roads. In view of the network's failures, the local authorities formed an intercommunal cooperation to face the challenge and rehabilitate the region's sewer network within the next 20 years. The corresponding works were awarded to various contractors.

For the first part of this massive project, the contractors decided to use trenchless technology to keep traffic disruptions as well as impacts on citizens, retailers, and connected households to a minimum. HOBAS GRP NC Line Profiles were used for this purpose, since they proved especially suitable for the rehabilitation of the existing structures and offer an optimum hydraulic performance, both in dry weather and during rainfall. Their perfectly smooth inner surface also minimizes friction and prevents the build-up of deposits.



Based on the technical recommendations of the French Scientific and Technical Centre for Building (CSTB) and the French RERAU (Rehabilitation of urban sewer networks) research program, the pipes' dimensions, thickness, and capacity to withstand external loads were calculated and checked. Following this detailed preparation, HOBAS NC Line Profiles were supplied in cross-sections of 500/1000 to 1380/2070 mm and in various pipe lengths in order to rehabilitate the existing sewer network as precisely as possible. The pipes were inserted into the old pipe one after the other. In a final step, the annular space between the existing brick structure and the new GRP sewer line was filled with cement grouting. The completion of this installation topped off a series of successfully implemented projects by HOBAS in Belgium, where the company has delivered over 15 km of HOBAS GRP Pipes within the last three years.

#### Rehabilitation with HOBAS NC Line in Nivelles

The sewer network in the Rue Saint Anne in the city of Nivelles had to be rehabilitated due to cracks and groundwater infiltrations. Local ground movements and a generally unstable soil situation had further affected its stability. This fact would have made works on the pipe systems quite risky – had it not been for HOBAS. A rehabilitation of the sewer network by means of relining with HOBAS NC Line Profiles 685/1065 mm made the installation process not only much safer, but also faster: The 90 m long damaged part of the sewer system could be readily renovated in merely three weeks. The infiltration of groundwater has thereby been sustainably prevented and the sewer system is operating smoothly again.

#### Relining of an aqueduct in Luxembourg

It is expected that by 2020 25% of the national and transnational transports of the Grand Duchy of Luxembourg will be carried out using public transportation. One of the measures taken to prepare for this development is the extension of one section of the Luxembourg-Wasserbillig railway line. The route between the Pulvermühle Viaduct in the capital city Luxembourg and the Sandweiler-Contern railway station in the town Wasserbillig will be rebuilt into a double-track route. In the course of this project, the local sewer system also had to be rehabilitated and extended. One of the sewer system's aqueducts has been relined with HOBAS GRP Relining Pipes, which were found to be the ideal solution for tackling the special project conditions – a slope of 4.5% and a relining distance over 120 meters. Despite challenging circumstances, the installation went very smoothly and has been completed within 1 week only to the satisfaction of all parties involved.

Fmd: [giovanni.cino@hobas.com](mailto:giovanni.cino@hobas.com)



#### Project Data Nivelles

Year of Construction  
**2014**  
Construction Time  
**3 weeks**  
Total Length of Pipe  
**90 m**  
Product Range  
**NC Line**  
Diameter  
**685/1065 mm,**  
**wall thickness: 20 mm**  
Pressure Class  
**PN 1**  
Application  
**Wastewater**  
Client  
**City of Nivelles**  
Contractor  
**KUMPEN (KRINKELS)**

#### Project Data Wasserbillig

Year of Construction  
**2014**  
Construction Time  
**1 week**  
Total length of the pipe  
**120 m**  
Product Range  
**Relining pipes**  
Diameter  
**DN 600**  
Pressure Class  
**PN 1**  
Stiffness Class  
**SN 40000**  
Application  
**Sewer rehabilitation**  
Client  
**Chemins de Fer**  
**Luxembourgeois**  
Contractor  
**PERRARD**

