HOBAS® NC Profiles Rehabilitate Sewer in Northern Netherlands – Sewer line brought back to service with non-circular GRP profiles

When in 2015, an old non-circular concrete sewer had to be rehabilitated in Groningen in the northern part of the Netherlands, HOBAS was brought into play. Within only three weeks and under challenging circumstances, the sewer line was successfully renovated with egg-shaped GRP profiles.

Petrus Campersingel is a highly frequented road in the Dutch city of Groningen. It is used not only by cars but also by heavy traffic. This subjects the pipes and structures underneath to particularly high loads – among others an old egg-shaped concrete sewer with a cross-section of 1200/1800 mm, which was found in need of renovation in 2015.

At first, the contractor considered rehabilitating the 277 m long sewer with a CIPP liner, but the corresponding safety factor revealed by the static calculation was too low. So GRP became the material of choice, and the contractor's reasons for using egg-shaped HOBAS NC Profiles 1000/1500 mm were manifold: the fully customizable shape and diameter, the resulting possibility to reduce the diameter of the existing egg profile, the necessary strength to withstand the groundwater pressure and traffic loads, and not least the products' long lifetime.

The construction works involved quite a few challenges – the road traffic had to be maintained between 6 a.m. and 9 p.m., bicycle traffic was even to be maintained around the clock the soil next to the road was quite weak, and the existing shafts were basically inaccessible. However, a good cooperation between all parties involved made it possible to tackle all challenges successfully. The installation of the HOBAS NC Line Profiles was realized from two access pits, one of them in the middle of the pipe route. After the installation of the first part of the pipeline, a GRP shaft with a temporary valve was installed at this access point. The remaining NC profiles were then installed from the second access pit and the pipeline finished by connecting it to an existing concrete shaft. →

Year of Construction
2015
Construction Time
3 weeks
Total Length of Pipe
277 m
Diameter
1000/1500 mm
Application
Sewer rehabilitation
Installation Method
Relining
Client
City of Groningen
Contractor
BAM Nelis Aarsleff JV
Subcontractor
Aarsleff Hamburg GmbH
Advantages
Custom-tailored profiles, high structural strength, long lifetime

During the installation, a visit to the project site was arranged by the city of Groningen together with HOBAS and the contractor BAM. Forty interested clients used the opportunity to experience at first hand how HOBAS NC Line Profiles are installed by relining. The day was a great success and left the visitors positively impressed. Beginning of December 2015, the installation of the 277 m long pipeline was successfully finished after three weeks only. The city of Groningen is very satisfied with the professional implementation of the project and the high quality of the new HOBAS NC Pipeline.

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Customized Profiles for Sewer Rehabilitation near Paris – HOBAS® supplies NC profiles in 12 varieties to Ville-d'Avray, FR

Year of Construction
2015
Construction time
8 months
Total Length of Pipe
1400 m
Diameter
1366/736 mm, 1564/654 mm, 1662/922 mm
Wall Thickness
17-19 mm
Application
Sewer rehabilitation
Installation method
Relining
Client
SIAVRM
Contractor
Parenge
Engineering office
Egis Eau
Advantages
Resistance to external loads, just-in-time deliveries, excellent hydraulic properties, full leak-tightness

Twelve kilometers west of the city center of Paris in the commune of Ville-d'Avray, HOBAS NC Profiles have helped bring the aged and damaged local sewer system sustainably back to life again: 1.4 km of combined waste- and stormwater pipes have been rehabilitated with pipe profiles in 12 different varieties that have been custom-tailored to the project requirements.

The Intercommunal Sewage Board of Vallée du Rû de Marivel (SIAVRM) is responsible for managing and maintaining the wastewater system of seven cities of the western suburb of Paris, among others Versailles, Vélizy-Villacoublay, and Ville-d'Avray. The local sewage and stormwater network had been built over the last century and extended in parallel with the increasing urbanization. Today, large parts of the sewage disposal system are at the end of their service life: Some of the over 50 years old sewers had simply not been built with the adequate strength to withstand nowadays' traffic loads and other mechanical stresses. Two parallel pipelines, both built around the 1960s, that are located along the highly frequented road RD407 were in particularly urgent need for renovation. The requirements of the renovation were to maintain the egg-shaped sewer's flow capacity, avoid any groundwater pollution caused by wastewater infiltration, and prevent ground subsidence.

The overall renovation project stretched over 3.3 km and was split into three phases – one that was to be realized definitely and immediately, and two future ones. The definite phase involved a total pipeline length of 1400 m in Ville d'Avray. The engineering office Egis Eau chose HOBAS NC Profiles for the realization of this project part. HOBAS produced NC profiles in three custom-tailored diameters (1366/736 mm, 1564/654 mm, 1662/922 mm) and four different lengths between 1 and 2.35 m, adding up to 12 different NC profiles. All elements were equipped with anti-slip mats for a safe accessibility and designed with an adequate wall thickness in order to optimally withstand the external traffic loads.