Rehabilitation of an egg-shaped interceptor in Hildesheim

The first sewers were built in the north German town of Hildesheim in 1860. Given that the municipal network was designed as a combined sewer, egg-shaped pipes were the optimum solution for many sections. The interceptor requiring rehabilitation in the Langer Garten road was installed in 1906 and made of concrete with a bottom lining. An egg-shaped pipe with a cross-section of DN 800/1200, its bottom depths ranged from 4.42 m to 9.34 m. It is primarily used as a storm sewer for an industrial area, but wastewater from a paper mill is also discharged into the pipe at times.

Following sewer inspection, the damage was classified as „old pipe condition II" to ATV M 127.
A groundwater level of 2.60 m above the bottom of the old sewer also had to be taken into consideration for the structural dimensioning of the liner. Egg-shaped DN 680/1050 pipes with a wall thickness of 10 mm were selected for rehabilitation. They were inserted separately into the old sewer through a short shaft at the end of the relining section. After being joined, each pipe was prevented from floating at the crown of the old sewer.

The lengths of 2.0 m and 3.0 m combined with the simple jointing system enabled the liner pipes to be laid rapidly. As a result, installation was completed within six days. The storm sewers from the various properties were connected to the interceptor with laminate hand lay-up. To check leak tightness, the liner was then filled with water. Finally, the remaining annulus between the liner pipe and old sewer was completely filled with special cement (grout).

The DN 680/1050 relining pipes stored in front of the access shaft.

View into the rehabilitated sewer.

Rehabilitated sewer with DN 200 laminated inlet

Berlin-Steglitz storm sewer

Intensive use and high traffic loads in the Berlin district of Steglitz-Lichterfelde Ost resulted in deterioration of a concrete storm-water sewer (hood cross-section 1560x1770 mm). In view of the damage detected and the load conditions, the HOBAS NC Line pipes were calculated on the basis of „old pipe condition II" to ATV M 127 Part 2. They were then manufactured using a calibration template that was a replica of the old pipe shape. Two-meter lengths were laid in the straight sections of the sewer and one-meter lengths in the curved sections.

HOBAS NC Line pipe installation

The HOBAS pipes were joined with push-on couplings bonded in place by laminate hand lay-up. Precautions were also taken during installation to prevent flotation. After tightness testing to DIN EN 1610 procedure „W", grout was injected section by section.