

## Clean Water for the Baltic Sea

Kaliningrad with its half a million inhabitants is a Russian exclave situated at the Baltic Sea between Poland and Lithuania. Given this relatively large number of inhabitants it is understandable that the lack of a water treatment plant is a great concern to the public as well as to surrounding countries. Daily over 250,000 m<sup>3</sup> of wastewater flow into the Baltic Sea polluting seawater and the Polish and Lithuanian coasts. Construction works for a wastewater treatment plant had been planned in the 70's. However, investments were ceased after the collapse of the Soviet Union and the project was brought to a halt.

20 years later, the Swedish government offered support for the city to continue the construction that would cost estimated 54.5 million euros. Yet it is only now that the actual construction could be initiated due to technical requirements and Russian laws.

The for the greater part concrete line that was established in the past has corroded with time although it has never been used. A first step toward the new treatment plant was therefore its rehabilitation.

Light weight and leak-tightness of the complete system were, amongst others, decisive criteria for OOO Meba, the prime contractor, to award HOBAS Pipe Poland the contract of 2 km HOBAS SewerLine® Systems in September 2007. With a roughness factor  $k \leq 0.01$  mm, the almost mirror like lining of the pipes allowed a decrease in nominal diameter retaining the same hydraulic properties. A further advantage that spoke for HOBAS were several reference projects successfully conducted with Baltic contractors in Lithuania, Latvia and Estonia and last but not least the technical assistance of HOBAS Engineers.

Deliveries from HOBAS Pipe Poland already started in September 2007 and were completed in January 2008. For the larger part, the HOBAS CC-GRP SewerLine® Pipes are dimensioned DN 2000, PN 1, SN 5000; the rest being DN 1200, PN 1, SN 5000 - all in all an order worth over 1,245 TEUR.



Year of Construction

**2007 - 2008**

Duration of Construction

**7 months**

Length of Pipe

**2,180 m**

Pressure Class

**PN 1**

Stiffness Class

**SN 5000**

Diameter

**DN 1200, 2000**

Installation Method

**open trench, relining**

Application

**SewerLine®**

Client

**OOO Meba**

Constructor

**Robert Struzynski**

Advantages

**easy installation, light weight,  
thin walls, tightness of the  
whole system**

The original collector leading to the planned treatment plant runs through the suburbs of the city and consists of a 1 km circular DN 2500 and a 1 km rectangular 2500 x 2500 mm line.

To install the new HOBAS SewerLine® the rectangular channel was uncovered, whereas open cut and relining was chosen for the circular line. High groundwater levels (above the pipe top) along the river Sapies and soil consisting of sand and clay created some concern. Due to these difficult site conditions HOBAS Site Engineers were on the spot ensuring a flawless installation. To the constructor's advantage, only simple site equipment and little manpower were necessary despite the mentioned difficulties. The pipes were lowered into the trench from which the water had been removed and were then placed and assembled in the right descending grade. After filling the trench with sand and gravel the bedding was compacted and finally covered with concrete plates to prevent the pipes from buoying up.

To rehabilitate the circular concrete line HOBAS CC-GRP Pipes were simply slipped inside on special steel rails provided by the constructor. The annular space between host and HOBAS Pipe was subsequently grouted.

The last pipes delivered by HOBAS were finally installed toward the end of March 2008: Smaller diameter DN 1200 pipes were utilized to rehabilitate 3 paralleling culverts into which the sewer main divided to fit under a railway.

HOBAS once again proved to "make things happen", as its motto says. Content with his choice, the contractor already placed his second order. This time it is for 3.9 km CC-GRP SewerLine® Systems DN 1000, PN 6 leading from the pumping station to the treatment plant.

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