

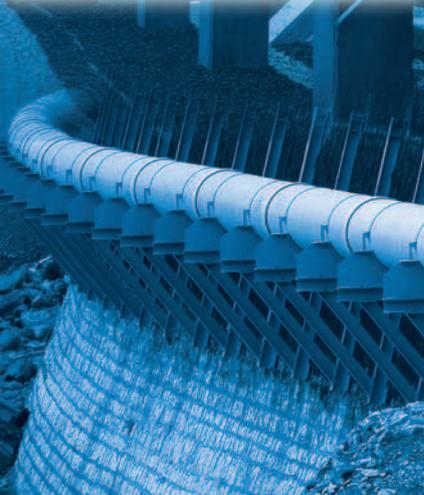


# Treatment Plant

## Kolbrandhoft, Germany



AMIANIT PIPE SYSTEMS



Nearly 90 percent of Hamburg's sewage passes through Kolbrandhoft, Germany's largest treatment plant, located at the junction of the northern and southern branches of the Elbe River. The treatment plant sees 400,000m<sup>3</sup> of wastewater passing through its purification facilities every day and the volume is steadily increasing. Running parallel to the Elbe River were two rectangular profiled concrete culverts that transported water into Kolbrandhoft's primary settling tanks. The concrete culverts were built in 1959 and originally used as sludge liquor outlets for the settling tanks. Up until 1968, relatively little water flowed through the two culverts, 42m and 102m in length. However, the oversized channels contained a large gas-filled cross section where substantial sulfuric acid corrosion attack occurred.

The culverts had since been used as inlet channels to Kolbrandhoft. Sulfuric acid attacked the channels and sewage and bacteria began leaking into the Elbe River. The threat of more serious damage was also evident.

Profile	
Diameter(s), DN	1500
Pressure Class, PN	2.5
Stiffness Class, SN	5000
Length, m	144
Application	Water Treatment
Location	Kolbrandhoft, Germany

When Hamburg's Council for Drainage voted to replace the deteriorating concrete culverts, Owens-Corning



**Owens-Corning Pipe Selected for the Largest Treatment Plant in Germany**

Glass-Reinforced Plastic (GRP) pipe was selected over ductile iron, steel, fiber cement, prestressed concrete and other types of GRP pipe.

Owens-Corning pipe was also preferred due to the very constrained working conditions where heavy installation equipment would have been difficult to maneuver.

Owens-Corning's pipe is made of ECRGLAS<sup>®</sup> and other corrosion resistant materials that make it highly resistant to abrasion and other types of corrosion, without the addition of expensive cathodic protection or other pipe coatings.

Owens-Corning pipe is also extremely cost competitive. Its lighter weight

lowers delivery costs and makes installation easier and faster, while maintenance expenses are greatly reduced compared to other pipe alternatives. All factors considered, Owens-Corning pipe is a superior product, offering many advantages in both long-term reliability and cost. In order to maintain the Kolbrandhoft facility's daily operations, concrete culverts were removed one at a time, leaving the concrete foundation as a base. Among narrow and difficult installation conditions, each GRP pipe section was laid on the existing concrete foundation and embedded in mortar. Sand bedding was used around all coupling areas. Owens-Corning FLOWTITE® couplings were used to seal the pipe sections.

Owens-Corning supplied 144 meters of pipe, replacing each culvert with one 1500mm diameter pipeline. The pipe specifications were 6m length, 1500mm diameter, 2.5 bar pressure and stiffness class SN5000. Extensive product testing was performed after the project was completed in 1993.

To date, with highlevel volumes flowing through the pipes, everything is working exactly according to expectations. And, the threat of collapsed concrete culverts has been eliminated.

Owens-Corning pipe's inherent corrosion resistance, lower flow resistance, and leak free joints will provide the City of Hamburg with a trouble free system well into the future.



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