

## Surface water treatment plant (OWA) Tegel

Approximately 37 million cubic meters of treated wastewater - the clear water - is conducted annually in sewage Schoenerlinde across the North ditch in Lake Tegel.

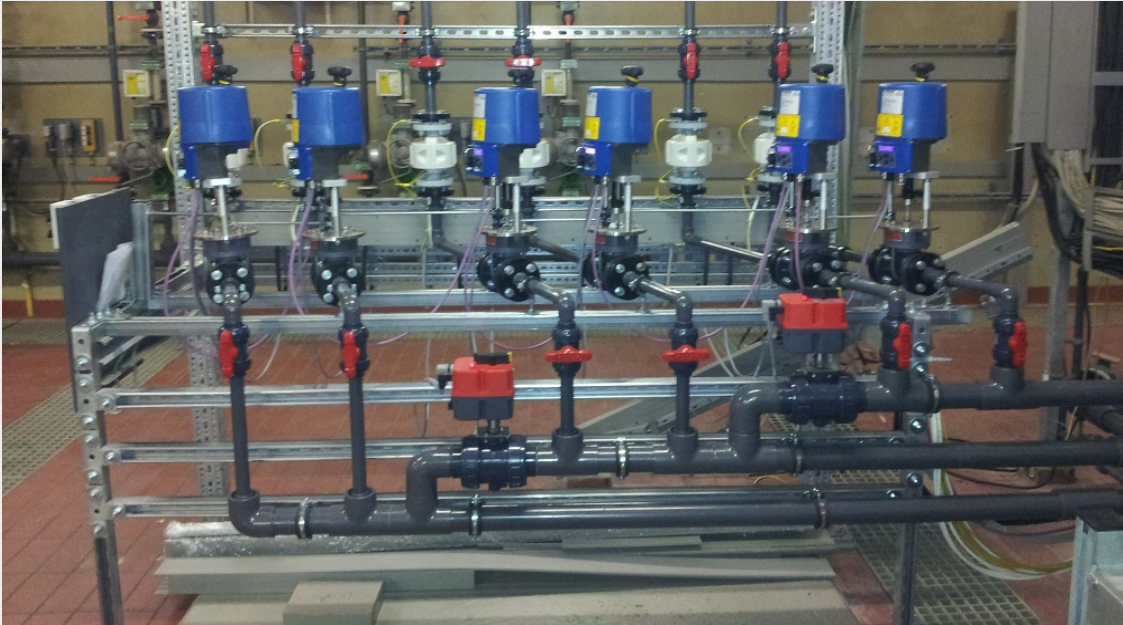
Near the Tegel harbor is the surface water treatment plant (OWA) Tegel. In this plant the suspended solids and phosphorus compounds are reduced from 0.6 mg/l to 0.02 mg/l of the inflow of North ditch and Tegel Creek. These reduction is made in four steps by flocculation, precipitation, sedimentation and filtration.

In addition to the clear water of Schoenerlinde also Havel water is purified. The water from Havel river is pumped from the Oberhavel via an underwater pipeline to the inlet of the OWA. Thus, the lake flows through stronger an exchange of water also contributes to the fact that the water transparency in Lake Tegel in recent years has improved from a few centimeters to about three meters. Lake Tegel is with a visual depth of almost three meters one of the cleanest waters in Berlin and meets the water quality class II.



Pic. 1 surface water treatment plant (OWA) Tegel

The company Thater Kunststofftechnik GmbH got the contract in February 2012 to renew the dosage system in the OWA Tegel fundamentally. The plant consists of three modules with each two dosing lines DN 25. The process instance has been designed so that a pump can supply all six lines, but it is also possible to provide each pump separately the associated lines to the module. This status is for maintenance and repair work very important. As on/ off valves ball valves type 21 ASAHI in nominal sizes DN 15, DN 25 and DN 50 were used, as well as ball valves with electric actuator of the type 21 ASAHI DN 50.



Pic. 2 control valves and electrical ball valves in the dosing line

Since the plant is to be operated from a central control, control valves with Profibus – communication are used. This results not only advantages of cabling (less effort, just one cable / valve), it is also significantly faster and easier to do diagnosis of gradients during operation. Thus, on the bus - interface technology changes over the valve lift, torque or possible error messages are read. To adjust the valves in place additionally on-site-controls were mounted before delivery. These allow diagnoses and manual intervention while unauthorized operation can be secured with a padlock.

To shut down parts of the system separately manual ball valves where used in PVC/ EPDM. These valves are especially designed for application in chemical processes and provide the best process safety and reduce maintenance works.



Pic. 3 ball valves for system shut down

To disable individual strands of the plant by the control room electrically operated ball valves Type 21 ASAHI in PVC/ EPDM have been used which were fitted at the factory with electrical drives. Since here a confirmation of the endposition is required, unless the optical position indicator, electrical feedback switches were installed to the drives and connected with the control room.

As dry run protection for the pump and a bypass for the conveyance of not currently required medium back to the batch tank pressure retaining valves V186 DN 50 PVC/ EPDM were installed, which can convey large volume flow rates with low pressure rise. As a result the piping system as well as the pump is protected against running dry if the batch tanks should get empty.





Pic. 4 pressure retaining valve as system protection



Pic. 5 batch tank incl. piping system

### **Scope of supply and services from FRANK GmbH**

- ✓ Support in choosing material
- ✓ Technical support for questions
- ✓ Delivery of valves

### **Plant building and design**

#### **Thater Kunststofftechnik GmbH**

Akazienstraße 11  
16356 Werneuchen OT Seefeld

### **Time frame**

Building and start up during 2012

All delivered and more valves are available in several material combinations. If we have piqued your interest in plastic valves please do not hesitate to contact us via

[c.buettner@frank-gmbh.de](mailto:c.buettner@frank-gmbh.de)