

[Home](#) ■ [HUBER Report](#) ■ [HUBER supplies the equipment for a major sewage treatment works in Berlin](#)

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Line 1 shortly after start-up



The locations of the city's sewage treatment works

About 3.4 million people live in Germany's capital Berlin presently. Together with the local industries they produce a daily amount of about 600,000 m³ of wastewater under dry weather conditions.

The generated wastewater is clarified on six sewage treatment plants, one in the city centre and five large works distributed around the city. These sewage treatment plants discharge their wastewater into a receiving water course each.

STP Waßmannsdorf lies in the southern part of the city within intermediate proximity to the new Berlin-Brandenburg airport. With a clarification capacity of 230,000 m³ wastewater per day (under dry weather conditions) it is designed for 1,300,000 PE.

The entire amount of the city's wastewater is collected in main pumping stations via collecting lines and from there pumped to the sewage treatment works. On STP Waßmannsdorf the wastewater is fed into the screen building via two huge vertical pressure pipelines and distributed to four treatment lines.

As the existing old screening system on site had shown its age and screens had to meet ever increasing requirements due to changing screenings composition, the plant operators decided to replace all machines in the screen building with new ones.

In addition, the separation efficiency of the existing 8 mm perforated plate screen seemed to have become insufficient. That is why they decided during the planning phase to install a two-stage screening plant consisting of a multi-rake bar screen with 20 mm bar spacing as course screen and a 6 mm perforated fine screen.

Due to the given conditions and scarce space in the building it was no easy task for the planning office PWU in Magdeburg to plan this project in detail in cooperation with Berliner Wasserbetriebe and put it out to tender.

Highest attention was paid to two requirements: robust screens and flexibility of the manufacturer. Some of the requirements in the tender specification were very high and bidders had to submit a calculation together with their bid to prove they can meet these requirements. It had to be verified whether the supplier is able to manufacture products that can be tailored to suit specific project requirements.

Not least due to the fact that we had already supplied four RoSF 4 Grit Washer units (size 16 l/s) in 2011/2012 via ATM Hartmann (Berlin), we finally received the order in autumn 2013 to supply one coarse, one fine screen and one screenings wash press for treatment line 1.

In view of the site conditions the order was initially limited to one line. Placement of the order for the other lines was subject to trouble-free operation of the first-line screens during an eight-week test period under predefined load conditions.



Back view of line 1



In operation since 2011 – HUBER COANDA Grit Washer units, type RoSF 4, size 16 l/s



HUBER Belt Screen EscaMax®: Blinding of the screen during load operation and insertion of the bottom part of a two-part HUBER EscaMax® screen into the screen building

After mechanical installation of the complete plant at the end of 2013 and completed electrical installation the plant was put into operation in spring 2014.

Despite a number of interfaces plant start-up went off without any problems so that the new screening system could be put into test operation after a very short time already.

During this test period all mechanical equipment operated without troubles even during several heavy rainfalls with extremely high pollution loads. Throughout the whole period only one problem report was received from the coarse screen, this was caused by a big squared timber due to which the screen was reliably stopped by the integrated mechanical safety shutdown function (torque control) to protect it against damage.

At the end of the test period it had to be proven that the screens can cope with the defined load conditions. The screens had to reliably manage water level differentials of up to 2 m with enormous amounts of screenings (90 kg per minute) upstream of the screens.

It turned out during the test period already that such conditions were not at all exaggerated requirements on the part of the customer but real scenarios as they occur regularly on STP Waßmannsdorf.

Since both screens and the wash press performed to the full satisfaction of the customer, we received in summer 2014 also the order for the equipment for the rest of the four lines. Presently, the screens of line 4 are installed, i.e. when the structural measures are finished. According to the time schedule the overall project is planned to be finished by the end of 2015.

After project completion the following HUBER machines will be operating on site:

- 4 HUBER RakeMax® Multi-Rake Bar Screens, size 5300 / 2552 as coarse screens
- Bar spacing: 20 mm with tear drop shaped bars (size 8 mm), throughput: 2700 l/s per screen
- 4 HUBER Belt Screen EscaMax® units, size 6000 / 2552 as fine screens, aperture: 6 mm, throughput: 2700 l/s per screen
- 4 HUBER Wash Press WAP units, approx. 2500 mm feed trough length, throughput: 8.5 m³/h per Wash Press
- 4 COANDA Grit Washer RoSF 4 units, size 2, throughput: 16 l/s per Grit Washer

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