

Mittlere Paar wastewater treatment plant State-of-the-art screen building by successive replacement

Situation

The spatial arrangement of the machine technology in the screen building at the Mittlere Paar wastewater treatment plant did not fulfil the most optimum conditions. The screenings washing press took up a lot of space in the building and restricted work on the machine technology, as the screen building also contained a grit classifier, a grit washer and a grit container.

In addition, after more than 22 years of reliable use, in 2014 it was time to replace the screenings washing system with a new Noggerath® screenings washing press NWP 250.



Solution

In order to modernise the plant further and optimise the space conditions in the screen building, the old Noggerath® Paternoster screen type from Aquaguard AG was replaced in 2020 after 28 years by a Passavant® KUR-S recirculating chain screen. The installation of a Passavant® recirculating chain screen KUR-S was chosen at the request of the customer because of its very compact design and excellent hydraulics.

After the successful refurbishment of the screening system to the full satisfaction of the customer, the grit classifier and grit washer were immediately replaced in 2021 with a new Noggerath® grit washer GWC 750 with discharge conveyor. The discharge conveyor was routed through the wall, allowing the grit container to be placed outside the building. The space thereby created in the screen building represents enormous added value in terms of accessibility to the individual machines.

Since then, the machine technology in the screen building is state-of-the-art and shows, on the one hand, that reliable machine technology is essential for customer loyalty. On the other hand, the interests of the customer were implemented in the best possible way in this project. This was possible in particular due to the close and constructive coordination with Mr. Schmid (Operations manager of the wastewater treatment plant). Since the installation was completed, Mr. Schmid reports that it has been completely trouble-free.

Technical data

1 x Passavant® recirculating chain screen KUR-S 1000-2016/6

Throughput max.	150 l/s
Channel depth H	1060 mm
Channel width W	1000 mm
Discharge height above channel floor H	2016 mm
Discharge height above Channel top edge H2	956 mm
Bar profile	RSP 35
Gap width (screen grate)	6 mm
Number of cleaning elements	4 pcs
Installation angle	70°

Advantages

- Short cleaning cycles due to four rotating cleaning elements
- Pivoting chain box
- Very small frame losses, curved grate resulting in excellent hydraulics
- Low-maintenance and low-wear operation (e.g. no bearings in the underwater area)



1 x Noggerath® screenings washing press NWP 250

Washing capacity max. 1.5 m³/h

Advantages

- Proven design for high performance with low running costs
- Continuous, self-cleaning and robust screen base

1 x Noggerath® Grit washer GWC 750

Throughput max.	to 12.0 l/s
Org. proportion of washed sand (OTS)	approx. ≤ 3 %
Dry matter content (TS) of the washed sand	approx. ≥ 90%
Max. discharge capacity of the washed sand	approx. 0.75
m ³ /h Discharge height mm	approx. 2840

Advantages

- Robust, thick-walled spiral
- No bearings in the medium: the spiral and agitator are only mounted on the drive
- No separate outlet required for organic fractions
- Processable coarse materials up to 35mm
- Low fine sand discharge in the outlet and low rinsing water consumption
- Low turbulence in the washing zone and therefore low ascent speed of the sand grains
- Discharge conveyor can be adapted to customer specifications

Existing plant /
Condition before conversion (installed in 1992)



Paternoster screen with
screenings washing



Grit classifier with grit washer

Screen building after the
conversion



Exterior view of the screen
building (Sand discharge
conveyor with wall penetration)



Noggerath® Grit washer
GWC 750

Passavant® recirculating chain
screen KUR-S with Noggerath®
screenings washing press
NWP 250

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