

ROTAMAT® Storm Screen for stormwater discharges RoK1

Automatically cleaned screen for solids retention in stormwater tanks and overflows

- ▶ Efficient solids separation
- ▶ Continuous automatic screen cleaning
- ▶ Defined solids removal
- ▶ For discharges with limited upstream head possibilities
- ▶ Sturdy, low-maintenance stainless steel design

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The situation

During and after storm events large amounts of debris are discharged to streams, rivers and lakes through storm water overflows of combined and sanitary sewer systems. Frequently, even the installation of scum boards is insufficient to prevent such pollution. The polluting items, such as sanitary products, toilet paper, faeces, plastic foils, etc. are not only unsightly but also responsible for considerable cleaning and/or disposal costs. On the basis of the DWA sheet A 102 (an instruction issued by an association dealing with wastewater treatment) efforts to fundamentally improve the protection of waters in this sector have been increased. Particularly endangered receiving water courses and nature preservation areas require more extensive measures concerning the treatment of stormwater.



Unsightly matter discharged during storm events, typical for stormwater discharges without coarse material retention.

The solution

The ROTAMAT® RoK1 screen is the ideal solution for this task, whether for new structures or refurbishment. The screen belongs to a group of fine screens designed for high flow rates at an extremely low hydraulic resistance. Two-dimensional screening guarantees a very high solids retention combined with automatic, gentle cleaning of the perforated plate.



Gentle automatic cleaning of the semi-circular perforated plate.

The function

RoK1 screens are horizontally installed at the downstream side of overflow weirs. A screw flight is mounted on a half cylinder of perforated plate. As the stormwater flows through the horizontal perforated half-pipe of the screen trough the solids are retained. A screw, with a brush attached on its flights, rotates within the semi-circular screen trough. It cleans the screen and pushes the screenings gently towards the end of the trough. At the end of the trough, the screenings are returned into the sewer and carried to the wastewater treatment plant. Alternatively, the screenings are removed from the plant with a cross conveyor for further disposal. During storm conditions the screen is automatically started and then works fully automatically.



Return of screenings into the sewer.

The installation conditions

On the left or right side of the weir overflow – standard inclination angles 0° and 60°. To allow for different structural conditions and local hydraulic conditions it is necessary that the screen can be flexibly installed into existing buildings. The full screen surface is available already at the beginning of a storm event so that the hydraulic resistance is minimized with the result of a very high solids retention.

The applications

HUBER ROTAMAT® Screens RoK1 can be used for a variety of applications in the combined sewage sector.

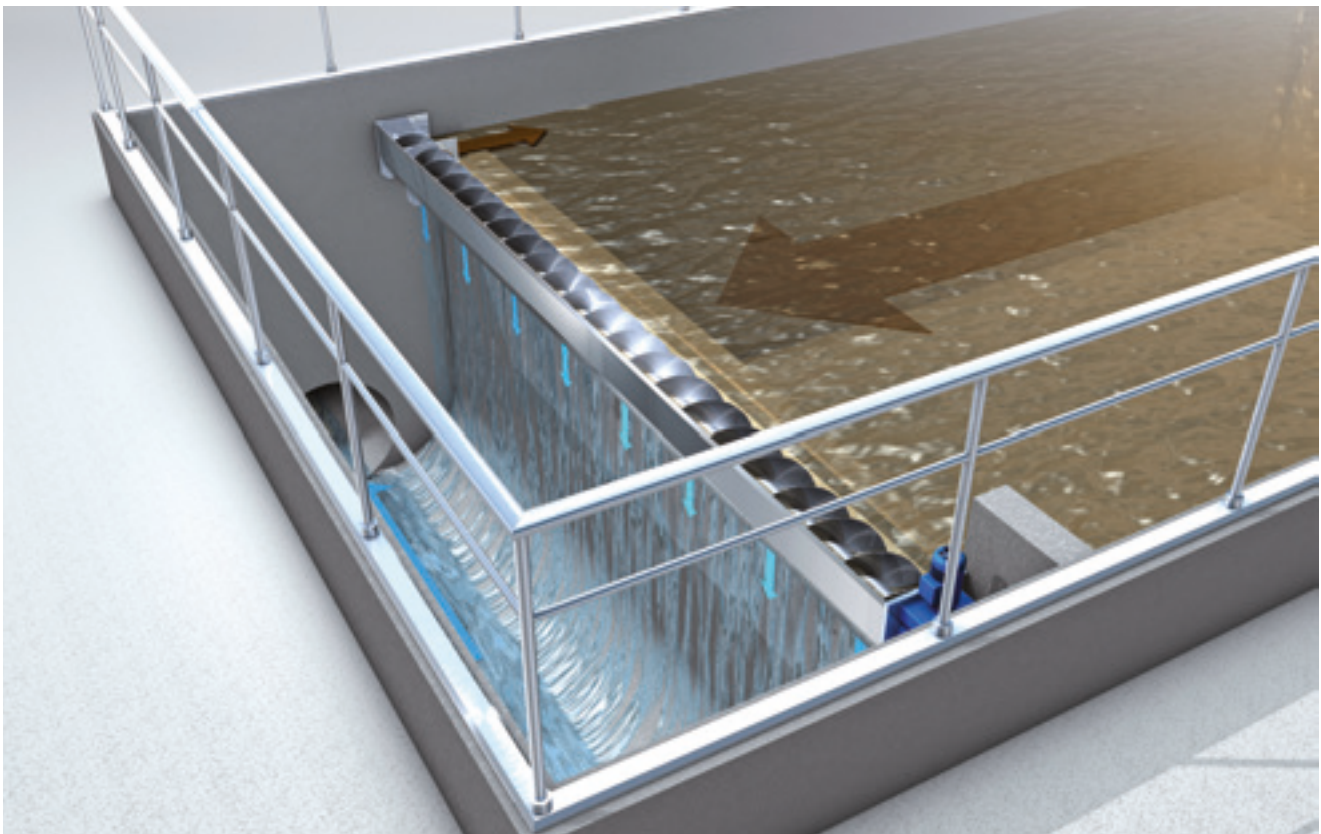
To avoid another point of maintenance it is generally not intended to remove screenings from the structure. Instead, the screenings remain within the sewer or tank and are introduced into the wastewater treatment plant after the storm event.

As a reliable solution for high solids loads and/or unfavourable flow conditions, the HUBER Storm Screen ROTAMAT® RoK1 can be equipped with a cross conveyor to function as a HUBER Storm Screen ROTAMAT® RoK1 TS. The screw conveyor feeds the screenings separated in the storm screen back into the wastewater flow at a specific point. Alternatively, the screenings can be discharged into a container with the cross conveyor if requested by the customer.

The user's benefits

The screen is installed behind the weir overflow. This design results in the following favourable benefits:

- ▶ Optimal solids retention by means of two-dimensional screening (perforated plate)
- ▶ Low hydraulic resistance due to installation at weir height
- ▶ The perfect solution for discharges with limited upstream head possibilities
- ▶ Defined screenings discharge
- ▶ For problem-free retrofitting into existing structures
- ▶ Possibility of completely submerging the screen
- ▶ Available with cross conveyor as RoK1 TS if required



Flow diagram of a ROTAMAT® Storm Screen RoK1.

Installation examples

A selection of installation examples will convince you of the HUBER ROTAMAT® Storm Screen RoK1:



ROTAMAT® Storm Screen RoK1 installed at an overflow weir.



HUBER Storm Screen ROTAMAT® RoK1 TS with a cross conveyor for high solids loads.



ROTAMAT® RoK1 screens installed at an angle of 60° on both sides of an overflow.



HUBER ROTAMAT® Screen RoK1 installed in a stormwater discharge channel.

Screen sizes

Screen selection and sizing depends on specific hydraulic requirements and structural conditions.

Trough diameter:
300, 500, 700, 1000 mm

Perforation:
6 mm standard,
other perforations available on request

Trough Length:
up to 10 m

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for Stormwater Discharges

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