

ESMIL
EQUIPMENT

EQUIPMENT AND TECHNOLOGIES
for wastewater treatment

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RSK step screen for fine wastewater treatment

Efficient equipment for the fine treatment of municipal and industrial wastewater with a high separation degree of small floating inorganic and fibrous inclusions.

Application features:



High throughput
capacity;



Fine treatment -
spacings from 3 mm;



Self-cleaning filtering
surface design;



Closed screen design.



RSK step screen is a perfect tool in the fight for perfect wastewater treatment

- ✓ The engineering development of RSK step screens is based on innovative technologies and best practices.
- ✓ Efficient separation, mechanical reliability and high throughput capacity have made RSK one of the most demanded types of equipment in its class worldwide.

Long term operation of ESMIL step screens

- » The screens have a sturdy housing that is resistant to damage, inaccurate installation and rough transportation conditions.
- » Stainless steel (AISI 304, AISI 316) is used in the design, and anti-corrosion treatment (bulk etching and passivation) is additionally carried out.
- » Reliable design of the unit for the transmission of torque from the drive to the kinematic mechanism (split "clothespin" crank).
- » Electrical protection against overload and power surges.

Why are ESMIL step screens useful and what distinguishes them from other types of equipment for mechanical wastewater treatment?

- » Exceptional functionality and simple operating principle.
- » Self-cleaning of the screen plates in the countercurrent mode without the use of auxiliary mechanisms, brushes or water rinsing.
- » Sheet metal plates with a thickness of 2-3 mm provide a high throughput capacity of the screen.
- » High treatment efficiency is achieved by filtering the flow through the layer of wastes held by the screen.
- » Formed «carpet» is lifted from the channel along the escalator-type plate filtering surface due to the movement of its moving plates around the stationary ones. This layer has a finely porous structure that holds even smaller particles. This provides an additional filtering effect.
- » ESMIL RSK step screen has a reduced spacing of 1 mm in the area above the channel. This prevents the already lifted wastes from falling back into the channel.
- » Combined mechanical and electrical overload protection of the drive protects the equipment from damage in case of jamming.
- » The design can be adapted to almost any place of installation (narrow channel sides, installation in a tank, etc.).
- » A wide range of models allows using the equipment for channels of any size. In extremely wide channels, gaps can be blocked by protective rubber sealings.
- » Closed housing design significantly reduces the release of gases from the channel and reliably protects against unpleasant reeks.
- » A system of air-assisted agitation eliminates sand deposits under the lamellas. This ensures the normal operation of the screen in various modes of the hydraulic load.
- » Gear motors with frequency control from one of the world's leading manufacturers NORD DriveSystems are used. This provides flexible control over the operation of the equipment, significantly reduces power consumption and protects equipment from power surges.
- » Screens are integrated into existing facilities for wastewater treatment, their work is automated and synchronized with other types of equipment.

DESIGN ADVANTAGES OF ESMIL STEP SCREENS

What benefits and serviceability features attract customers?

- » Step-shaped plates of sheet metal and plastic fill the spacing of the screen in width, forming an escalator-type filtering surface.
- » The maximum width of the filtering surface provides the most effective throughput capacity.
- » For the benefit of the customers we have abandoned the problematic chain drive. The movable plates move in such a way that their steps revolve around the similar fixed plates. Thus, the removed screenings are transferred from the lower steps to the upper ones.
- » To avoid deposits of fine sediment before the screen, a perforated pipe is installed in the lower part of the structure and is used for cleaning the bottom by blowing under the screen.
- » The screen operates in the mode of continuous and gentle screenings collection and transportation.
- » High separation efficiency is achieved due to the narrow slot width and the produced «carpet» of the lifted screenings.
- » Due to its design, RSK has reduced amenability to grit, gravel and stones.
- » Adjustable supports provide easy installation and compensate for channel depth deviations.
- » The screens are easy to maintain - the main components are available for external inspection in the operating condition.
- » When replacement of the plates is required, their mounting features allow removing the plates separately without disassembling the entire screen. It rises above the channel for maintenance by turning around the supporting axis.
- » Closed sealed design, removable covers for inspection and scheduled maintenance.
- » Different operating modes are available: by the level of wastewater, by time, continuously.

COVER

Protects operator from moving parts while allowing easy access to equipment during maintenance

DISCHARGE ZONE

Directs recovered garbage to a conveyor underneath

KINEMATIC MECHANISM

SUPPORT

It supports the grid and allows lifting it up above the channel for maintenance

FRAME

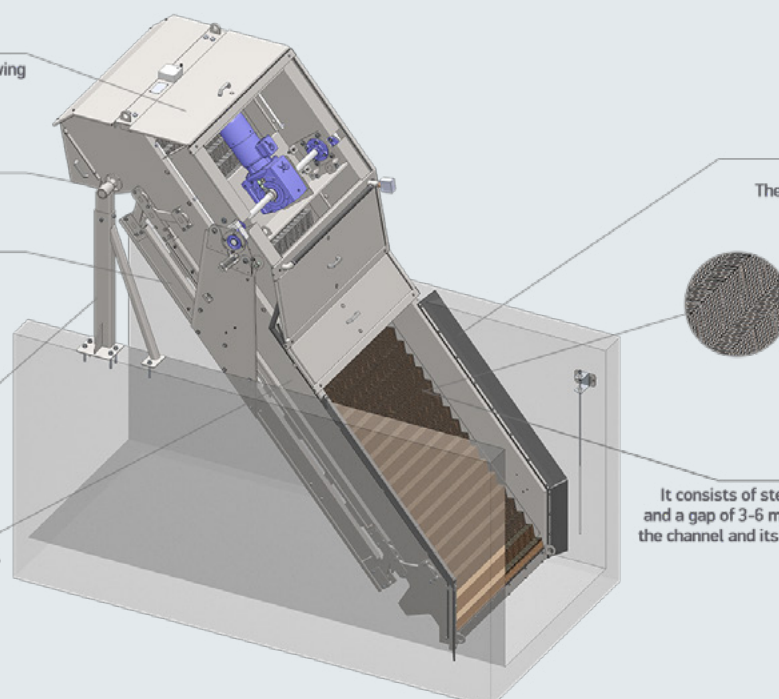
Ensures reliable operation of the entire product, withstanding inaccurate installation and transportation

SECURITY SCREENS

They consist of rubber plates. They cover the gap between the channel walls and the grid

CLEANING SYSTEM

It consists of steel plates with a thickness of 2-3 mm and a gap of 3-6 mm. Provides removal of garbage from the channel and its transportation to the discharge zone



Technical parameters

Parameter	Value
Channel width	500 ... 2300 mm
Channel depth	500 ... 5000 mm
Material	stainless steel AISI 304 (optional 304L, 316, 316L), PP-C polypropylene
Drive	NORD worm or cylindrical gear motor with a reversing lock
Drive power	0.75...2.2 kW
Spacing	3, 5 or 6 mm
Plates' thickness	2 or 3 mm



WE OFFER THE FOLLOWING OPTIONS:

- » In individual cases it is possible to produce filtering plates completely from stainless steel without a conveyor part.
- » The water level sensor, which is supplied with the screen, can be mounted on the screen housing or separately in the channel.
- » Compressor supply for the system of sediment agitation under the screen lamellas is available as an option.
- » Explosion-proof versions of the screens are also available for delivery.
- » ESMIL group can develop solutions for the complex equipment integration, e.g. screens, conveyors and compacting press. This simplifies installation, allows using of modern automation, provides the air-tightness of the complex and facilitates maintenance.

Please be sure - we will prepare an individual project proposal for you, and the parameters of the purchased screen will correspond to the working conditions of the particular object!

International Sales Department

+48 87 620 06 02
 prodeko@esmil.eu