

**ESMIL**  
EQUIPMENT

EQUIPMENT AND TECHNOLOGIES  
for wastewater treatment

[www.esmil.eu](http://www.esmil.eu)

# ESMIL radial sludge scraper

is an original design solution providing maximum performance

This high-tech equipment is designed to remove sediment from the bottom and floating substances from the surface of the water in radial settling tanks.



**Special design** for the most efficient removal of sludge from the bottom of the settling tank



**Accurate collection of floating matter** from the surface



**High margin of safety**



**Durability** – the device is manufactured from corrosion-resistant materials



**Low operating costs**

## OPERATING PRINCIPLE

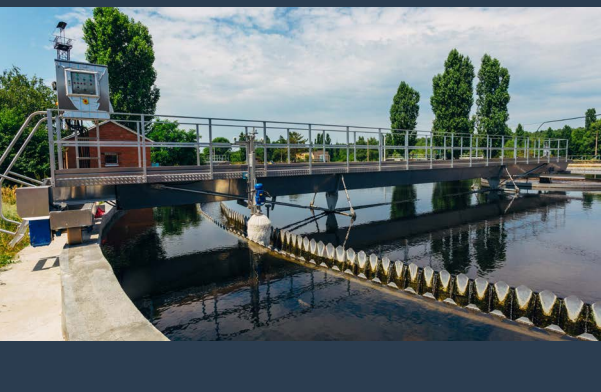
The operation principle of the primary clarifiers is based on the process of wastewater sedimentation. Insoluble impurities settle at the bottom under the influence of gravitational forces, and light floating substances float to the surface. Sludge and floating substances are then removed from the settling tank using bottom scrapers.



## WHY DO USERS OPT FOR ESMIL SLUDGE SCRAPERS?

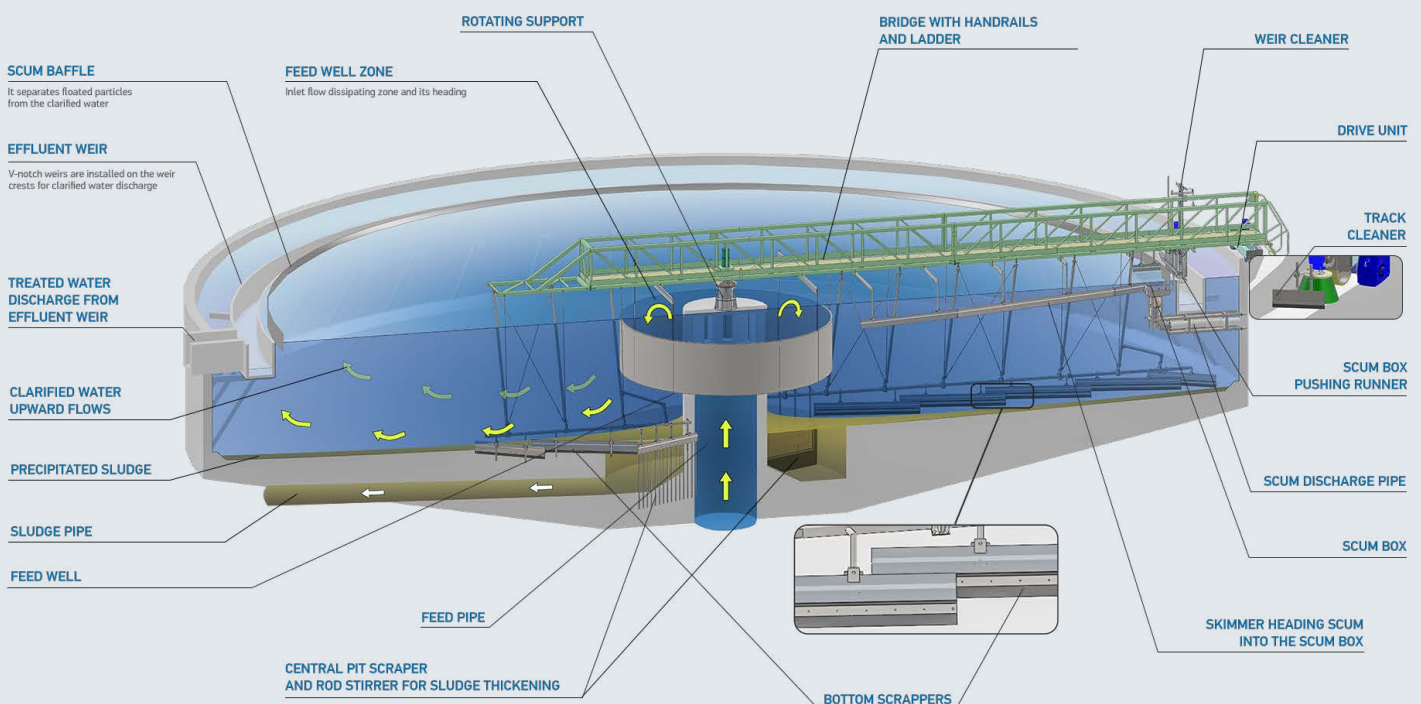
IRPO radial sludge scrapers represent a single functional complex of equipment and technological devices: a bridge truss, a platform, scraper vanes with scrapers, a geared trolley. The equipment provides continuous uninterrupted operation to achieve high level of water purification. High cleaning efficiency, careful collection of sludge and floating substances make ESMIL sludge scrapers an indispensable part of treatment facilities.

ESMIL Group produces settling tanks with internal diameters of 16, 18, 24, 28, 30, 40, 50 and 54 m. It is possible to manufacture equipment of non-standard diameters.



## ESMIL SLUDGE SCRAPERS ARE HIGHLY EFFICIENT DUE TO TECHNOLOGICAL SOLUTIONS AND EASE OF OPERATION

- » ESMIL Group offers sludge scrapers with a radial, one-and-a-half and diametric scraper, with a peripheral and central drive, which allows covering the settling tanks.
- » An individual approach to the selection of components for equipment.
- » Scrapers, which are the working parts that rake the sediment to the central pit, are located on the scraper vanes suspended by racks and rods to a rotating platform. The length and bending of the scrapers change as they approach the pit. The scrapers are equipped with rubber aprons to increase working efficiency.
- » The central rotation support is made in the form of a rotation bearing assembly. This design increases the reliability of the assembly during operation and simplifies installation.
- » The access to the central part of the sludge scraper is provided by a bridge truss. It has high strength due to a special construction shape, and it weighs significantly less than bridges of other manufacturers. The top of the bridge truss is covered with a metal or plastic floor and fenced with a railing.
- » A drive trolley equipped with an electric drive with frequency regulation of speed and threaded wheels made of polyurethane is installed at the outer end of the truss.
- » The bridge of the sludge scraper is the main supporting structure for scrapers and auxiliary equipment. It is designed specifically for heavy loads with a high solids content in the sediment and provides ease of access and maintenance of equipment items.



## ESMIL TECHNOLOGY BENEFITS

- » The structure is easy to install, and all working elements of the sludge scraper are available for routine maintenance.
- » When replacing obsolete equipment, IRPO type sludge scraper is mounted in the existing settling tanks without reworking the structural base of the concrete tank.
- » Energy consumption is significantly reduced due to the lightweight design.
- » ESMIL sludge scrapers are offered with both peripheral and central drive, which additionally allows covering the entire area of settling tanks.
- » Ergonomic bridge design provides easy access and maintenance of the sludge scraper elements.
- » The equipment uses an original device for the collection of floating substances. A static scraper skims the surface scum from the center to the periphery, and then the mechanism of the receiving hopper automatically removes the scum from the settling tank to the surface scum collection chamber.
- » The special design of the scrapers allows moving the sediment to the central pit evenly and without excessive stirring. At the same time, the scrapers do not wear out and do not erase the concrete bottom of the tank.
- » IRPO sludge scrapers are equipped with a tray edge cleaning device. The automatic brush can operate in trays with both one-sided and two-sided overflow. Its rigidity is selected in the way to ensure the removal of biofilm from the trays and provide the longest possible service life.
- » The design uses special studs that allow adjusting the position of the deflector relative to the water mirror in the settling tank.

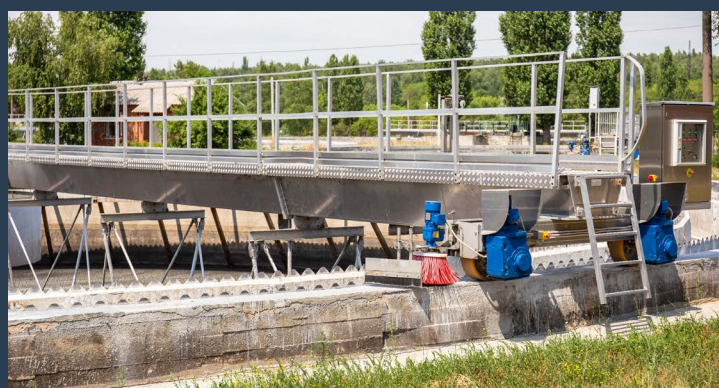
## ESMIL SLUDGE SCRAPERS ARE EQUIPPED WITH PERIPHERAL DRIVE SLIP PROTECTION DEVICES IN WINTER.

### WE USE:

- » electric wheels with a planetary gear reducer;
- » brush track cleaner;
- » a scraper to clean the track;
- » all-wheel drive for both wheels of the trolley.

## LONG OPERATING LIFE

- » The sludge scrapers are made entirely of AISI304 anticorrosive steel with the use of polymer materials. A combined version of AISI304 anticorrosive steel and aluminium alloys is possible at the request of the customer.
- » The long life of the components is due to the ease of their replacement. Due to the reduced weight of the materials, the load on the system components is significantly reduced. This provides an extended period of operation and allows for quick and easy maintenance.
- » The sludge scraper can be equipped with a frequency converter that allows adjusting the speed of movement in a wide range. It also allows for increasing the life of the equipment.
- » It is possible to manufacture individual elements of the sludge scraper in explosion-proof design.
- » The control system of the complex provides adjustment of the speed of movement of the scrapers, the rate of collection of sediment without impairing its properties, cleaning the side and trays of the settling tank, lighting the track of the bridge and protecting all major devices from overloads.



## Technical parameters

Parameter	Value
Diameter of settling tanks	from 6 to 60 m
Depth of settling tanks	up to 10 m
Standard bridge width	1000 mm
Standard rotation speed	1-2 rpm
Scrapers type	segmented or logarithmic
Wheel material	rubber/polyurethane
Drive	single wheel/both wheels
Gear reducer	planetary/worm



## ADVANCED OPTIONS

- » Production of receiving hoppers of various designs at the request of the customer.
- » In the standard version of the device for collection of floating substances, the scraper skims them from the center to the periphery, and the receiving hopper takes them out of the settling tank for further disposal. In the advanced version offered by our company, the collection of floating substances and surface scum and their movement from the center is carried out by a screw with an adjustable immersion depth.
- » Implementation of various options for auxiliary equipment: electric cleaners of the side track of the settling tank, mechanical cleaning devices for the edges of the tray, mechanisms for collecting and removing floating substances from the surface of the settling tank.
- » We produce purified water collection trays, stainless steel ridged overflows, support columns and flow reflectors.
- » Our range of equipment includes easy-to-use Stamford Baffles settling tank coverages. A traditional version with rollers and an inner ring rail is also possible.
- » Integration of equipment into a top-level automation system (SCADA).

**WE GUARANTEE HIGH PERFORMANCE AND TROUBLE-FREE OPERATION OF ESMIL RADIAL SLUDGE SCRAPERS**

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