



PASSAVANT® Gravity Thickener

TASK

The thickening process in circular tanks is particularly energy-efficient due to its use of the natural force of gravity – with a special focus on the continuous collection and removal of the thickened sludge.

SOLUTION

With the PASSAVANT® Gravity Thickener, Bilfinger Water Technologies offers a particularly economic solution for the mechanical thickening process. The robust, tried and tested gravity thickeners are designed for a maximum pressure of 4,000 N/m² on the bottom scraper blades which enables sludge thickening of up to 600 g/l, depending on the type of sludge.

FUNCTION

The raw, mixed or digested sludge flows into the circular tank through a centrally positioned, rotating distributor cylinder. The subsequent thickening process is intensified by means of the vertically mounted stirring members. The sludge in the bottom area, which has the highest thickness concentration, is conveyed by the echelon-type scraper blade assembly into the sludge hopper, from where it is drawn off by hydrostatic pressure or respectively pumped off to further treatment facilities.

Depending on the mode of operation, the supernatant is drawn, continuously or discontinuously, from the surface via overflow weir on an outlet channel or via height adjustable or floating supernatant outlets.

BENEFITS

- Energy efficient due to lower energy demand
- Low wear and tear as only slow-running components
- Low maintenance as no bearings below the waterline
- Reliable operation due to electronic overload protection with motor management
- Replacement of drive parts possible for operation without tank drainage
- Long service life of ball bearing slewing ring due to forced lubrication



BILFINGER

**WATER
TECHNOLOGIES**

DESIGN SIZES & PERFORMANCE

	municipal	industrial
Tank diameter	4–30 m	1.6–30 m
Drive torque	3,000–50,000 Nm	1,550–400,000 Nm
Drive power	0.12–0.18 kW	0.12–1.10 kW
Dry solids content, max.	5–8 % DS	60 % DS

MATERIALS

All components are manufactured in top quality materials:

- Steel with top quality surface coating through “airless hot spraying” with polyurethane
- Stainless steel, pickled and passivated

OPTIONS

- Driving power possible as control parameter for sludge removal
- Steel bridge
- Floating scum removal system
- Supernatant removal system
- Supply line

APPLICATIONS & FIELDS OF OPERATION

PASSAVANT® Gravity Thickeners are not only suitable for new installations but can be easily integrated into existing plants:

For preliminary or after-treatment thickening processes

In circular tanks in which the water content of sludge or suspensions is to be reduced in an energy-efficient manner

Flood protection and water pollution control

- Chemical and petrochemical industry
- Paper and textile industry
- Steelworks
- Power stations
- Sugar refineries
- Special cases

Water Technologies

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Stirring members



Gravity thickener in sludge treatment process