

**Leiblein**

world of liquids



# Lamella Separator

Technologies for solid/liquid separation

## The lamella separator

Our top product

The lamella separator (also lamella clarifier) separates settleable solids (particles) from liquids and is used for instance in the treatment of process water and waste water.

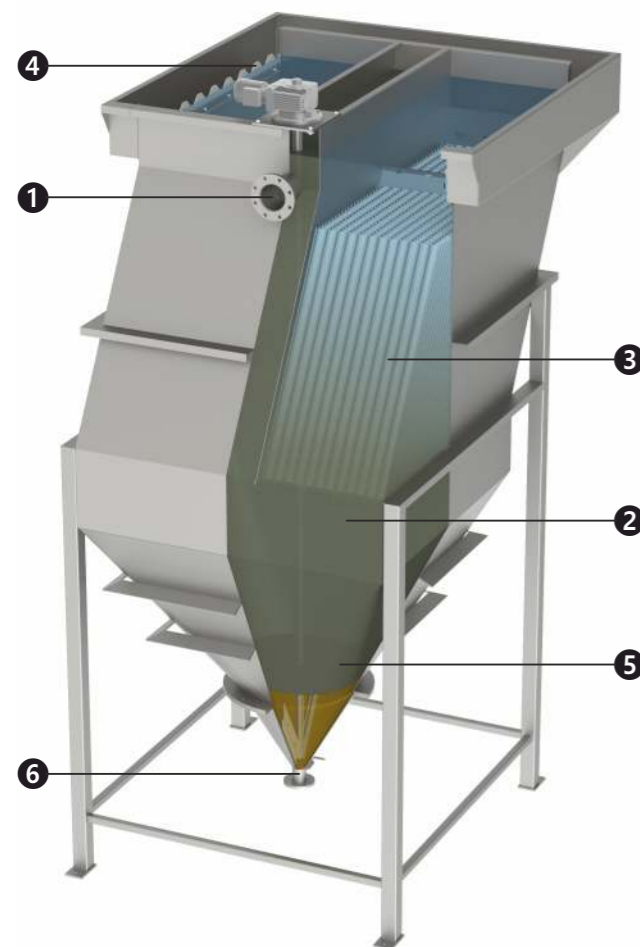
Basically all solids that sediment in a given time, can be separated easily and economically with the lamella separator. Depending on the density those are usually solids larger than approximately 50 µm in diameter. For separating smaller particles and turbid substances, flocculants are used in order to create settleable flakes.



Lamella clarifier in a gravel plant

## Functional principle of the lamella separator

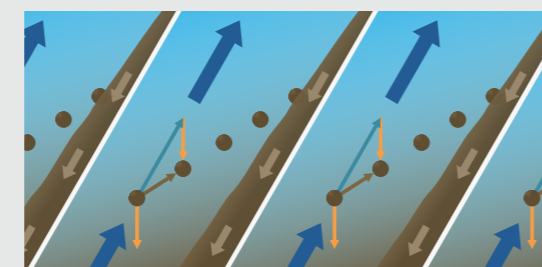
Technology made by Leiblein



### Efficient sedimentation

The lamella separator is a pressure-less system. The untreated water is pumped or flows by gravity into the inlet channel of the lamella clarifier where it flows downwards (1). Below the lamellae the flow is reversed and streams up through the lamellae (2). The solids settle down countercurrently on the lamellae (3).

### Cross section lamella packs



- flow direction of untreated water/clear water
- flow path of a solid particle
- vectors of flow velocity and sink speed
- flow direction of sludge

The clarified water flows further upwards and via a special overflow weir to the outlet (4). The solids slide down along the lamellae and accumulate in the sludge funnel (5). In order to keep the sludge flowable it is possible to add a scraper in the area of the funnel tip. Depending on the subsequent process steps the sludge is continuously or discontinuously removed (6).

## Areas of application of the lamella separator

Versatile application possibilities

Lamella separators can be used for the treatment of every liquid containing sedimentable particles or flakes

- **Gravel and sand industry**  
e.g. treatment and recirculation of washing water; recovery of fine sand; desludging of rinsing lakes
- **Recycling industry**  
e.g. treatment of washing water of car shedder systems; recycling of plastics; agricultural films
- **Glass, ceramic and natural stone industry**  
e.g. treatment of washing water (white water); removal of material remains; solid separation of cooling and grinding water
- **Food processing industry**  
Treatment of washing water for potatoes, fruits and vegetables (reduction of the COD value); treatment of washing water from dishwashers and canteen kitchens
- **Chemical industry**  
Cooling water treatment; river water treatment, separation of precipitates
- **Paper industry**  
River water treatment, secondary clarification; process water
- **Tunnelling / construction sites**  
Construction site water
- **Rehabilitation of inherited waste / heavy metal precipitation**  
Cleaning of contaminated soils; regeneration of dead zone waters (digested sludge removal)
- **Energy industry / cooling water**
- **Waste / landfill / street cleaning**
- **Heavy metal precipitation**
- **Preliminary and secondary clarification of municipal and industrial sewage plants**



Lamella clarifier with sand filter and flocculation tank



Clear water overflow



Lamella separator with enlarged buffer for sludge



Waste water recycling for tunnelling



Lamella clarifier clears twice the throughput of a settling tank

## High efficiency

Your benefits with our lamella separator

- Compact design: saves more than 85% of space compared to conventional sedimentation tanks
- As a result of the 60 degree slant of the funnel, a compact sludge is created which can be transported precisely e.g. via pumps. That is why no manual sludge handling is required.
- No moving parts. Only by the usage of a scraper there is a drive with a shaft.
  - > almost no maintenance
  - > low-energy system

## Design

### Types and materials

The lamella clarifier is offered as standard design and as special construction which can be designed, manufactured and delivered from laboratory size to industrial dimensions. Depending on the case of application they can be extended by different add-on parts.

- Scraper
- Floating sludge scraper
- Sludge level measurement
- Turbidity measurement
- Pre-treatment e.g. precipitation / flocculation
- Combination with other Leiblein products
  - > Rotary screen for coarse separation
  - > Vacuum belt filter for sludge dewatering
  - > FlowSand-Filter for post-filtration

**Materials:** coated steel  
stainless steel AISI 304 / AISI 316L

**Coatings:** special coating to rubber coating

**Lamellae:** polypropylene, stainless steel

Alternative materials on request.

Every lamella separator is designed for your special application. Furthermore we provide pilot plants and rental units in various sizes for all our products.



Special construction scraper belt separator



Lamella clarifier with rotary screen and vacuum belt filter



Lamella separator with a floating sludge scraper

You have questions about the treatment of your medium?  
Do not hesitate and contact us!  
**We would be pleased to advise you.**



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