SUPERIOR
FILTRATION

PRODUCT SHEET

GIROSAND MOVING BED SAND FILTERS

GiroSand Moving Bed Sand Filters are continuous backwash, up-flow sand filters. They are used for removal of fine suspended solids from water where higher solids loads are encountered and where continuous supply of uniform, high quality filtrate is required.

Applications

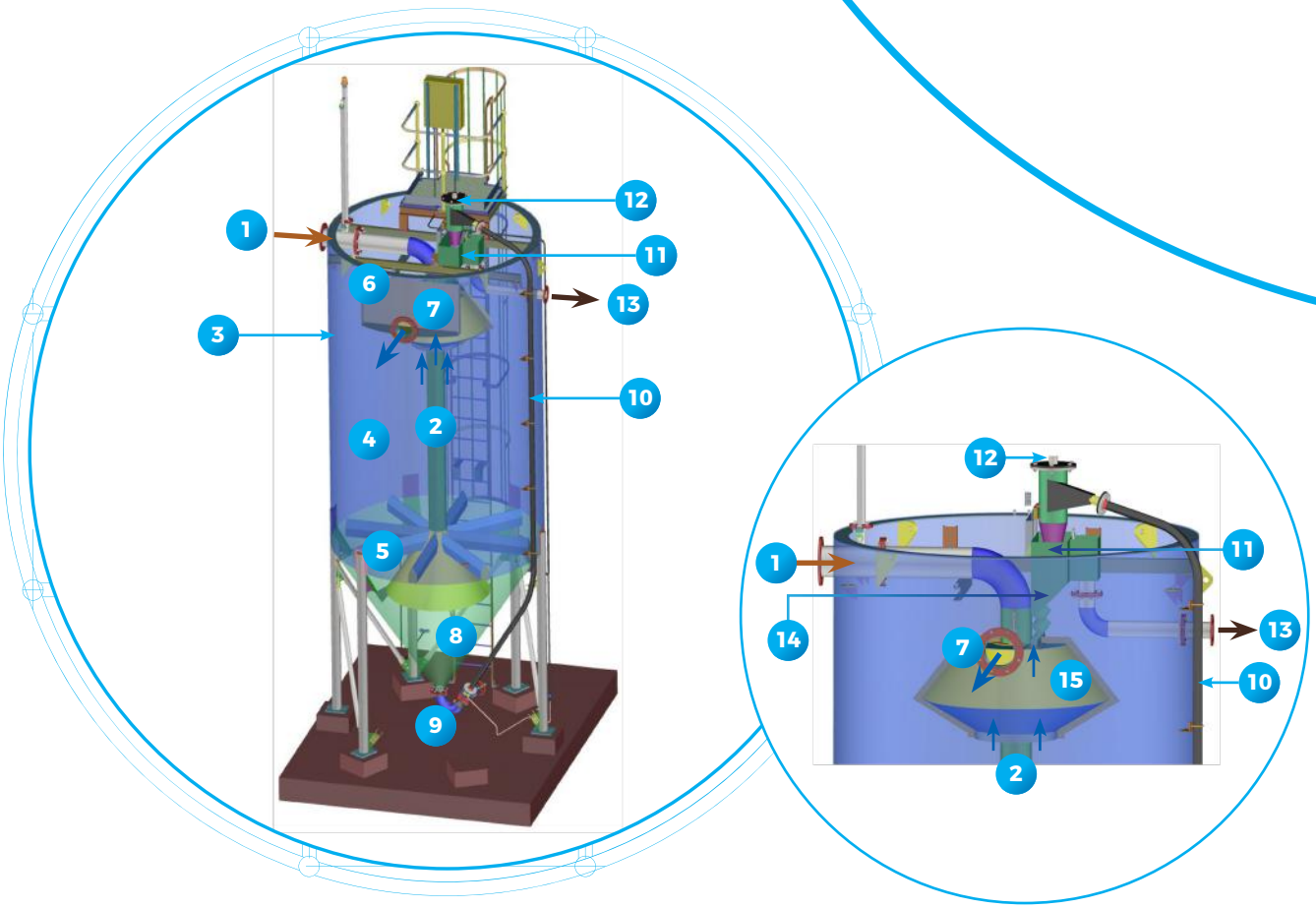
GiroSand Moving Bed Sand Filters are commonly installed as polishing filters to remove unsettled flocculant and micro solids from suspension. GiroSand applications include the following:

1. Tertiary treatment on wastewater treatment plants to remove residual suspended solids and phosphor
2. Polishing filter on potable water treatment plants to improve turbidity and remove residual suspended solids
3. Filter to process wastewater in a range of industrial plants. To improve turbidity and remove residual suspended matter.

Industries

GiroSand Filters are used extensively in industries where polishing of process water is required. These include:

- **Industrial Process Water**
  - Agricultural and Horticultural
  - Automotive
  - Brewing & Distilling
  - Food & Agri Processing
  - Nuclear
  - Pulp & Paper
  - Power Generation
  - Quarrying
  - Rubber Processing
  - Textiles
- **Mining**
- **Mineral Processing**
  - Steel Processing
- **Potable Water and Sewage Wastewater**
- **Petrochemicals**
  - Refining
  - Pharmaceutical
  - Plastics
- **Oil and Gas**



How it Works

GiroSand Moving Bed Sand Filters are continuous backwash, up-flow sand filters. They are used for removal of fine suspended solids from water where higher solids loads are encountered and where continuous supply of uniform, high quality filtrate is required.

Dirty water is introduced at the top of the filter via the dirty water inlet 1. The water runs down the centre feed pipe 2 in the main filtration chamber 3 where the media bed 4 is placed. The centre feed pipe leads to the distribution radials 5, low down in the media bed where the water is distributed evenly across the surface area.

The water then flows upwards through the media bed 4 where suspended solids are retained. Clean, filtered water continue to flow up and over the filtrate weir 6 and to service via the clean water outlet 7.

The media bed fills the coned bottom of the filter 8. From here an air lift mechanism 9 transfers the dirty sand to the wash box 11 at top of the filter via the airlift pipe 10. Dirty sand and water is pushed up the airlift pipe 10 where intense scouring takes place. This dislodges dirt. At the top of the airlift pipe, air is vented 12 and the sand and water mixture is deposited into the wash box 11.

The dirty water is directed to the waste outlet 13 whilst the sand continues to gravitate down into the counter current section of the wash box 14. The purpose of the wash box is to remove final traces of dirt.

Some of the up-flowing, clean, filtered water is guided into the counter current section of the wash box 14 via the sand distributor box 15. This counteraction of downward migrating sand and upward flowing filtrate provides the agitation required to remove the last traces of dirt.

At the top of the counter current section of the wash box 14 dirt is continuously carried away to waste 13 and at the bottom clean sand is continuously deposit back onto the top of the sand bed via the sand distributor box 15.

This continuous removal of dirty sand from the bottom of the sand bed and return of cleaned sand to the top of the sand bed ensures uninterrupted process flow.

Heineken Brewery – Sedibeng, Gauteng, South Africa

Heineken built a new brewery in Sedibeng, South Africa, in 2009. Waterleau was the technology partner for wastewater treatment. After the biological treatment processes, a final filtration process was required to ensure compliance with discharge standards. Final filtration removes fine suspended solids and improves turbidity, **polishing** the **treated industrial effluent.**

Waterleau selected Superior Filtration to supply 4 x **MBF50D GiroSand Moving Bed Sand Filters**, processing +/- 200m³/h @ 9m/h. Since commissioning the MBF50D filters have consistently produced high quality filtrate - reducing the suspended solids load and turbidity in the treated effluent and ensuring compliance with discharge standards.

SUPERIOR FILTRATION

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