

# DynaSand® Filter

*Continuous Up flow Sand Filtration*

## Cost-effective, Continuous Filtration with *Internal Washing System*

DynaSand® is a continuously operating sand filter with an internal washing system which eliminates the need for wash water storage tanks, backwash pumps and collecting tanks.

### Applications

- Drinking water treatment.
- Industrial effluent treatment and water supply.
- Recovery and reuse of water.
- Treatment of wastewater before discharge.

### Advantages

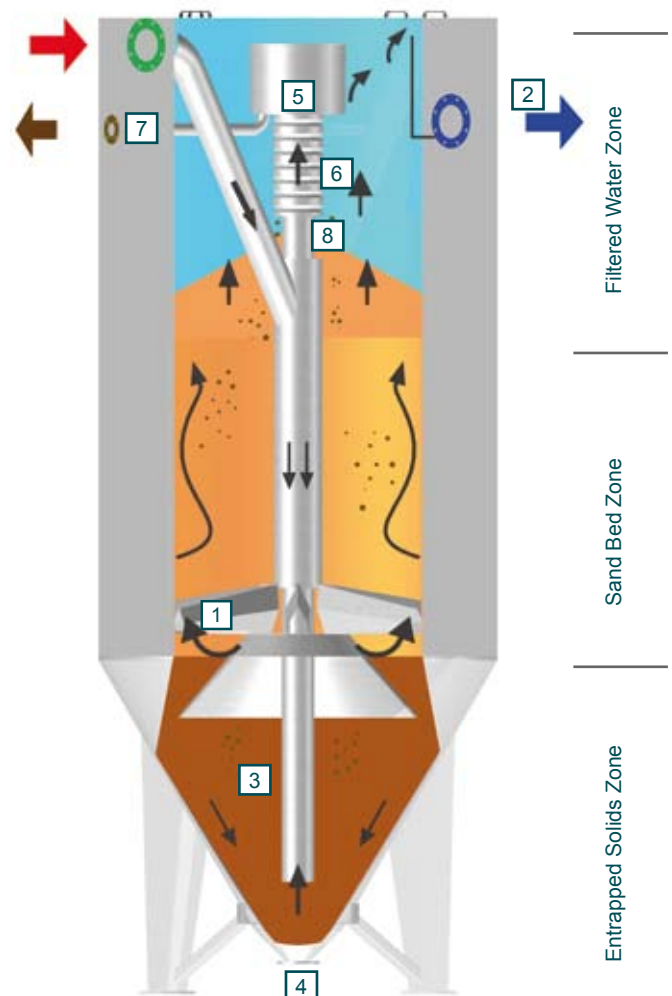
- No first filtrate. Always clean effluent.
- No shock loads on the wash water treatment system.
- Handles high suspended solids without the need for pretreatment.
- Low head loss.
- Low energy consumption.
- Low supervision and maintenance costs.
- No need for backwash pumps, wash water storage or wash water collecting tanks.
- No automatic valves or air scour blower.
- No clogging filter bottom nozzles.
- Single media filter bed.
- Available as a freestanding unit or as filter modules for installation into a concrete basin.

### How it Works

The DynaSand® filter is based on the counter flow principle. The water to be treated (red arrow) is admitted through the **inlet distributor (1)** in the lower section of the unit and is cleaned as it flows upwards through the sand bed, prior to discharge (blue arrow) through the **filtrate outlet (2)** at the top. The sand containing the entrapped solids is conveyed from the tapered bottom section of the unit (3), by means of an **airlift pump (4)**, to the **sand washer (5)** at the top.

Cleaning of the sand commences in the pump itself where impurities are separated from the sand grains by the turbulent mixing action. The contaminated sand spills from the pump outlet into the **washer labyrinth (6)** in which it is washed by a small counter current flow of clean water. The separated solids (brown arrow) are discharged through the **wash water outlet (7)**, while the grains of clean sand (which are heavier) are returned to the sand bed (8). As a result, the bed is in slow, constant downward motion through the unit. Compressed air for the sand pump is provided by via the control panel.

Thus, water purification and sand washing both take place continuously enabling the filter to remain in service without interruption.



**Continuous Contact Filtration**

Production of process water and drinking water from river or lake water. The process can also be used for certain wastewater applications. Flocculation chemicals are mixed into the feed stream of the DynaSand® filter(s). No flocculation tanks are required. Pre settling can be eliminated because of DynaSand®'s ability to handle high concentrations of suspended solids.

**Process Water Recycling**

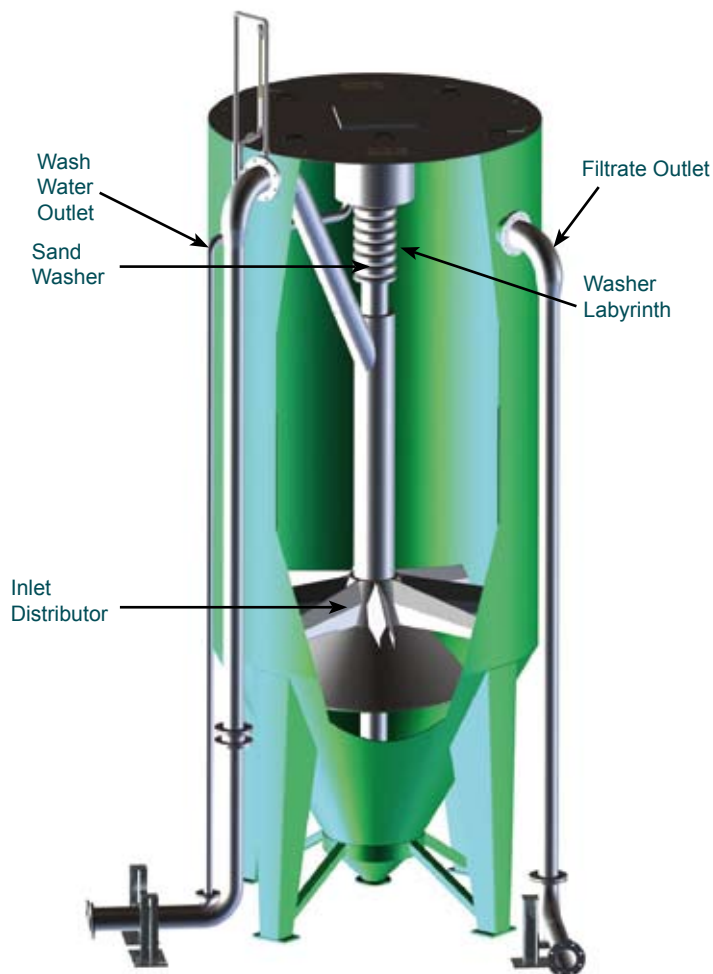
Reduces water consumption and permits full control of water quality. DynaSand® filters are installed after screening or primary settling. The filtered water is recycled and the wash water flocculated and thickened. The overflow from the thickener is returned back to the filters.

**Tertiary Filtration**

Final treatment of wastewater before discharge. Contact filtration with aluminium or iron salts as flocculation agents may be employed as required to precipitate phosphorous and enhance suspended solids removal. The end product meets the highest environmental standards applicable to municipal wastewater and industrial effluents.

**Metal-Bearing Industrial Effluents**

Includes precipitation of the metallic ions, followed by flocculation, sedimentation, and final filtration in a DynaSand® Filter. The process produces low residual metal contents and meets strict environmental standards.



*DynaSand® Filters continuously providing high quality process water to a box board manufacturing plant.*

turning water around ...®

Hydro International are the sole UK and Ireland distributor for Nordic Water Products AB

This information is for guidance only and not intended to form part of a contract. Hydro International pursues a policy of continual development and reserves the right to amend specifications without prior notice. Equipment is patented in countries throughout the world.



Hydro International  
 Prickwillow Road • Ely • Cambridgeshire • CB7 4TX  
 Tel: 01353 645700 • Fax: 01353 645702 • www.hydro-international.biz

