BELT FILTER
MP-BF

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Mechanical Solids Filtration

When treating process and wastewater, mechanical filtration represents a efficient, economical and environmentally friendly way of solids removal. The MP-BF Belt Filter has high applicability with some examples given below:

Municipal wastewater treatment plants
Filtering requirements for wastewater are dependant on the actual stage of the treatment process. The MP-BF Belt Filters are available with various sizes of belt openings, eg:
- Inlet screening (1000 – 5000 µm)
- Primary treatment (100 – 500 µm)
- Polishing (40 – 60 µm)

Removal of solids at wastewater treatment plants to enhance further treatment. Solids usually suitable for biogas.

Food industries
Removal of solids withinn the process line:

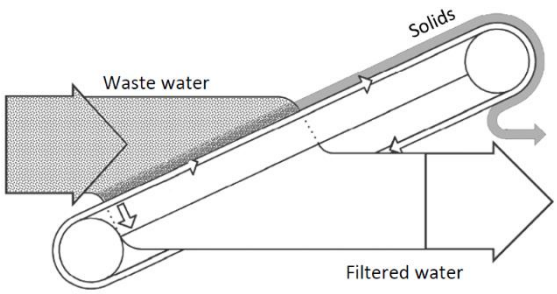
- slaughterhouses
- dairies
- fruits & vegetable processing
- ingredients
- malting

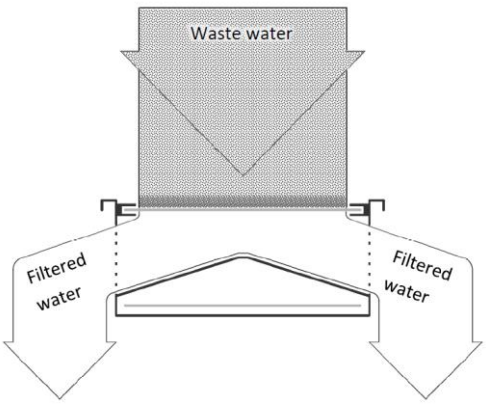
Industrial screening
Pre-treatment of surface water to prevent unintended discharge to sewer. Filtration of recirculated liquids for removal of solids.
Applications provided to:
- waste treatment stations and scrapyards
- ZOO and nature parks

Aquaculture
Onshore-/offshore fish farms and recirculated aquaculture systems use belt filters for:
- pre-treatment or primary filtration
- sludge thickening/dewatering
- concentration of backwash from drum filters

In some cases, using a MP-BF Belt Filter with combined chemical and mechanical filtration is required to achieve the discharge consent.

Concept of MP-BF Belt Filters





Standard models

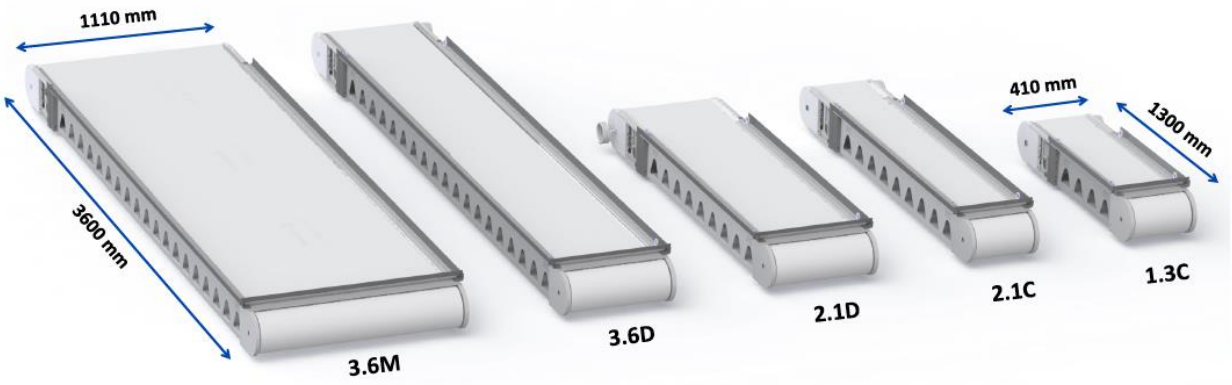
The MP-BF Belt Filters MP-BF are available in several standard models dependant on application, flow and available space. Multiple belt filters are installed for larger flows.

Compact design
All models are based on the same design, concept, this makes all models equal in terms of efficiency, reliability and applicability.

An internal drum motor ensures a compact design, long operational lifetime and low power consumption, available with two fixed speeds. Optionally, a frequency controlled belt filter with automatic start/stop gives better and more efficient solid filtrations.

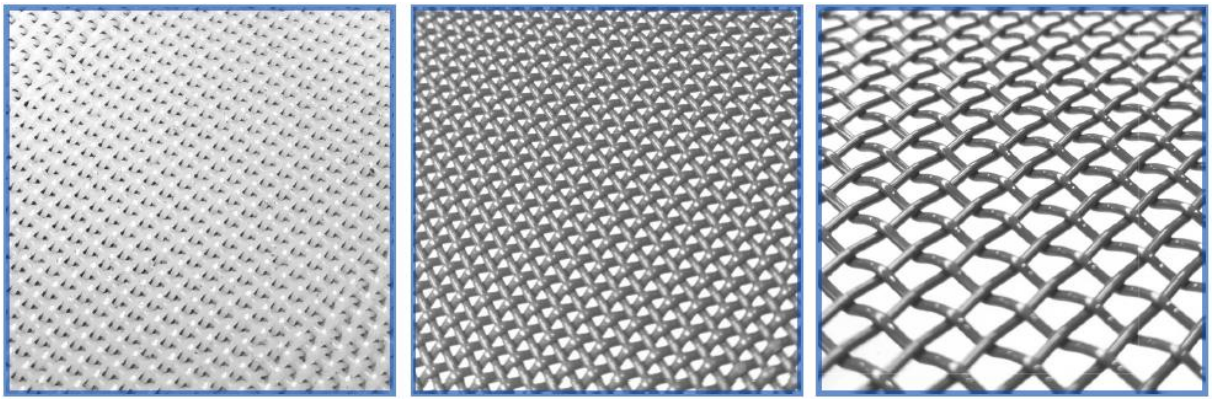
Flow capacity
The smallest model is designated 1.3C and the largest model 3.6M. The maximum flow per belt filter depends on application and choice of filter mesh openings. The length of the belt filter affects both flow capacity and dewatering efficiency.

The capacity also depends on the concentration of suspended solids. A preliminary estimation for MP-BF-3.6M with 150 µm filtration is maximum 80 m^3/h and with 5000 µm filtration maximum 800 m^3/h.



MP-BF Belt Filter		1.3C	2.1C	2.1D	3.6D	3.6M
Chassis length	[mm]	1300	2100	2100	3600	3600
Belt width	[mm]	300	300	500	500	1000
Build-in width	[mm]	410	410	610	610	1110
Available belt filter mesh openings	[µm]	40 - 5000	40 - 5000	40 - 5000	40 - 5000	60 - 5000
Max capacity for mechanical filtration	[m^3/h] *[US gal/min]*	2 - 35 *9 - 155*	6 - 100 *25 - 440*	10 - 170 *45 - 750*	20 - 400 *90 - 1760*	60 - 800 *260 - 3500*
Max capacity for chemical/ mechanical filtration	[m^3/h] *[US gal/min]*	0.5 - 1.5 *2 - 6*	1 - 2 *4 - 8*	2 - 4 *8 - 17*	3 - 6 *13 - 26*	6 - 12 *26 - 52*

Belt filter mesh is chosen based on filtering requirements. MP-BF Bent Filter mesh is available in range from 40 µm to 5000 µm. The high quality polyester fibres are used to produce filter belt mesh. The belts are woven with different patterns and openings which determines the filtering efficiency and flow capacity. The design gives important properties such as dimensional stability, anti-corrosion and a long service life.



Optional equipment

Belt Scraper
MP-BF Belt Filters are equipped with a static scraper or optional rotary scraper to ensure proper discharge of sludge and solids. Choice of scraper depends on belt filter application and belt filter mesh openings. The rotary scraper is designed with a drum motor to sustain the compact belt filter design.

Belt Spray Cleaning
Belt filter cleaning is crucial for continuous effcient filtering. Spray cleaning with filtered water and/or clean water are the most common setup. Nozzles are installed with quick-release functionality for easier maintenance. The belt filters are delivered with one spraying bar and is prepared for one extra optional spraying bar.
Separate outlet for spray water is the most common setup to avoid reduction in sludge dry matter. Belt cleaning using water is economical-friendly due to low cost on electricity, e.g. compared to cleaning with compressed air through air knifes. The spray water also contain the particles with provides a more healthy working environment compared to air cleaning.