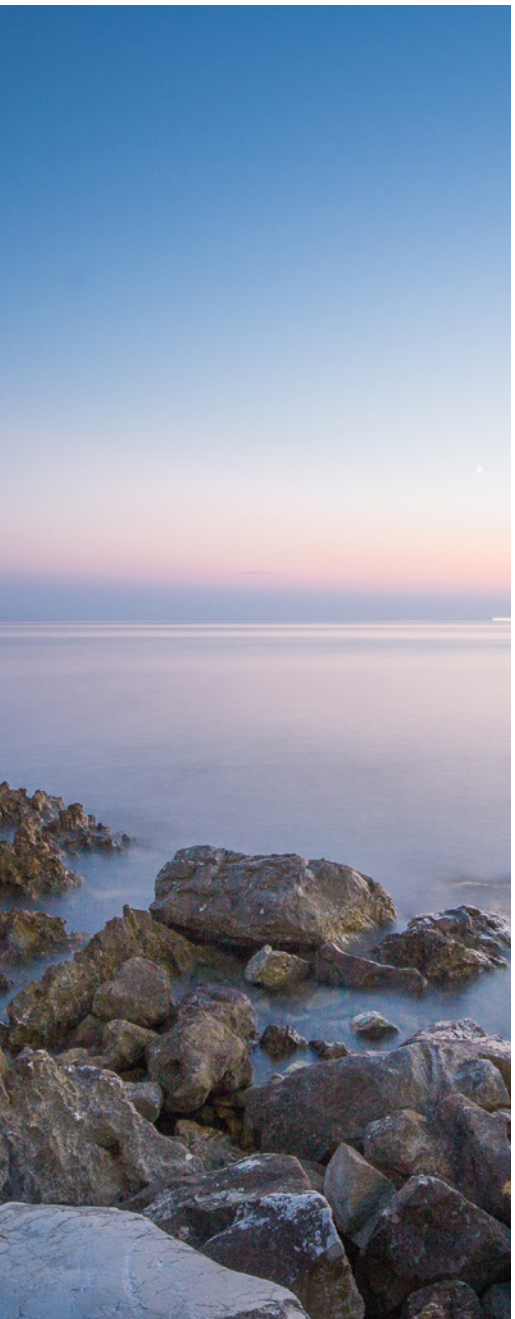
SULZER

Nordic Water

Water and wastewater solutions

DynaBelt

self-cleaning belt filter



Main industries and applications

DynaBelt is an automatic, self-cleaning belt filter developed to separate and thicken solids from wastewater in a cost-effective and space-efficient way. The DynaBelt filter is the next generation belt filter providing new benefits in terms of capacity, energy usage and ease of maintenance.

The DynaBelt normally replaces the traditional primary sedimentation process of municipal wastewater plants, but on a much smaller footprint. The system delivers a thickened, calorific sludge suitable for direct supply to the digestion process without the need for additional dewatering. Chemicals are normally not required, which facilitates the further treatment or processing of recoverable material.

DynaBelt is a versatile filter suitable for different solids removal applications, such as:

Municipal wastewater
- Primary filtration - without adding chemicals
- Increased primary or secondary capacity
- Combined Sewer Overflow (CSO)
- Storm water treatment

Industrial wastewater
- Pulp and paper
- Slaughterhouses
- Food processing
- Breweries
- Plastic recycling

Primary filtration

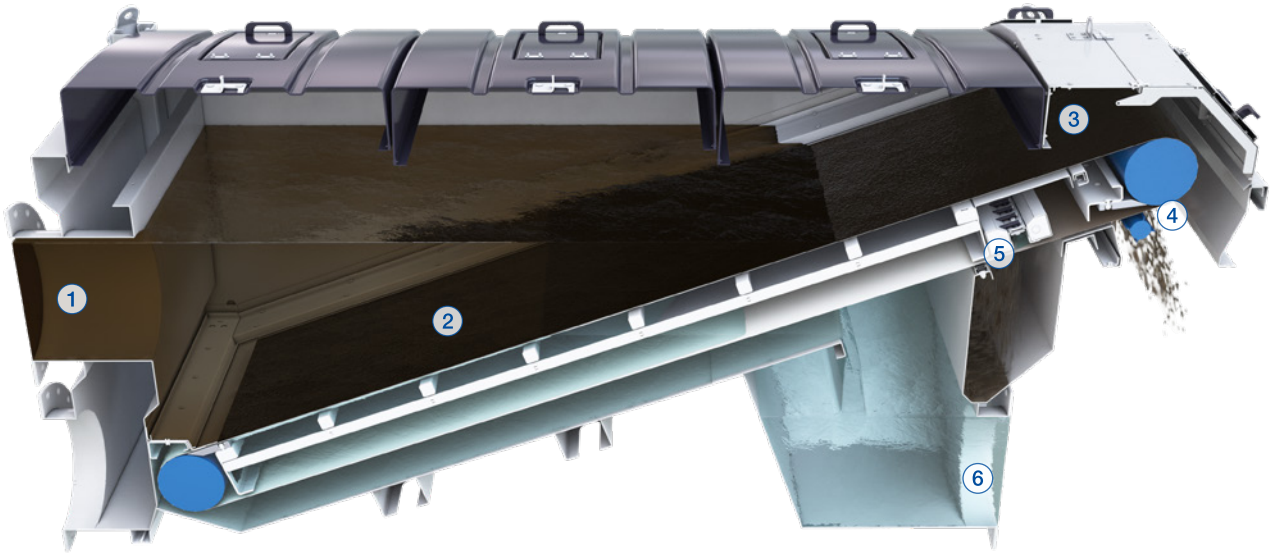
The DynaBelt is a very efficient solution to replace or extend the conventional primary treatment process, such as primary clarifiers, with a typical removal rate of 50% total suspended solids (TSS) and 20% biochemical oxygen demand (BOD) with a sludge dryness content at 4-8% dry matter (DM). The DynaBelt system gives the opportunities to:

- Reduce your footprint to 10% of conventional clarifiers
- Lower the total investment cost by reducing the cost of civil works
- Optimize the solids removal rate, achieving a more efficient downstream biological process
- Separate non settleable solids - perfect protection for membrane bioreactor (MBR) plants
- Increase biogas production from the high calorific sludge
- Eliminate the separate sludge thickening process
- Lower the overall energy consumption
- Lower the life cycle cost

How the DynaBelt works

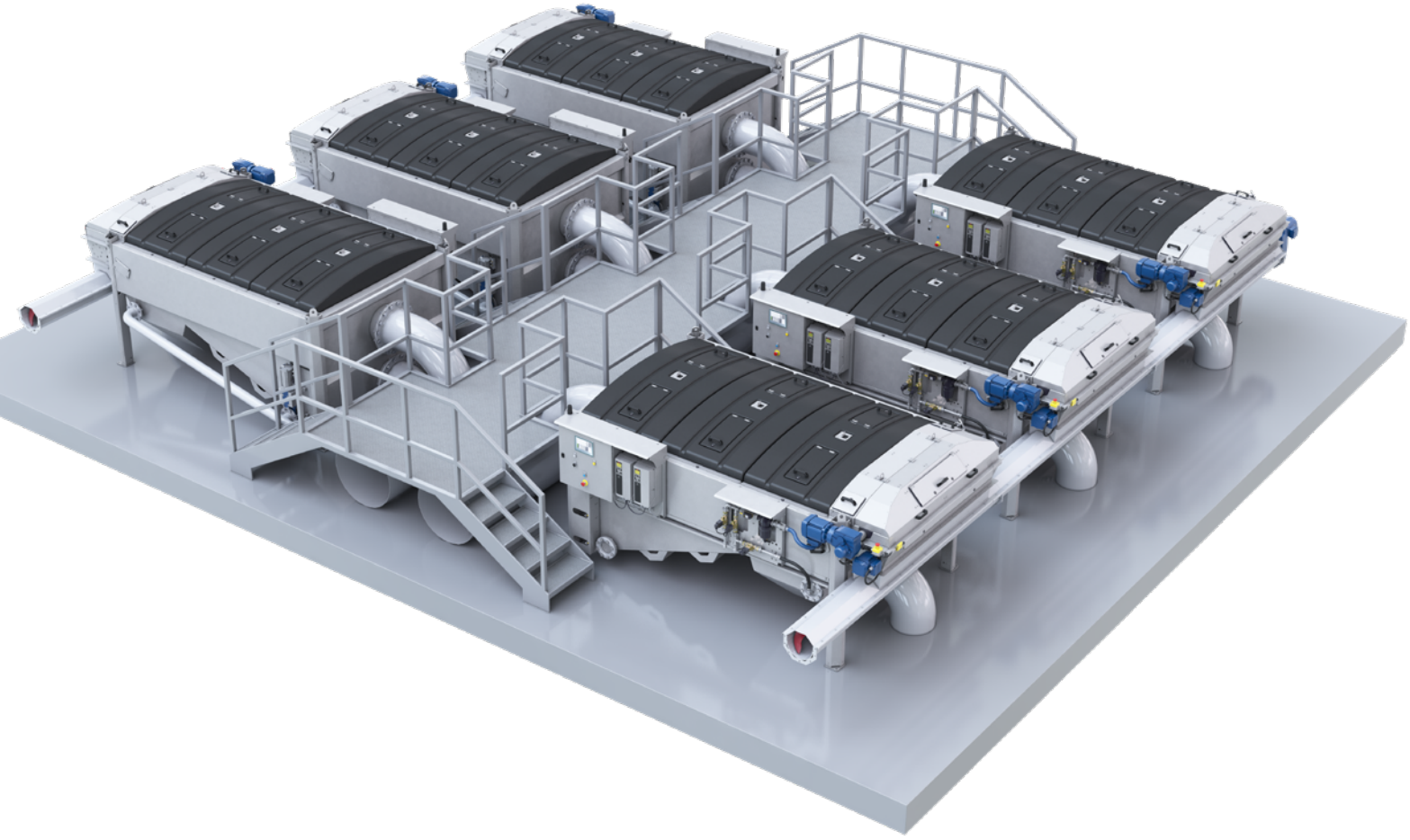
1. The untreated water is fed into the filter via the tank inlet.
2. The particles are distributed across the effective area and separated when the water passes through the endless filter belt. The particles create layer of sludge on the mesh, which gives the opportunity for even smaller particles to be separated and could be compared with a depth filtration technique.
3. When optimal head loss is achieved, the belt starts to rotate and transport the sludge towards the sludge outlet.
4. The sludge is discharged by the highly efficient, self-cleaning, non-contact sludge discharge solution, which provides a long service life. The system eliminates the need for high energy-consuming blowers or static scrapers in need of daily maintenance.
5. The filter belt is then back washed to provide a clean filter belt area for further filtration.
6. Filtered water exits via the tank outlet.

The system continuously operates at optimum levels and monitors effluent characteristics, evaluating internal and external factors affecting the operation and performance of the filter system. This creates a robust, informative and reliable system.



Modular capacity

Create the capacity needed with multiple filters. The predefined filter setup is designed with retrofit and new installations in mind. The DynaBelt filter is ideally combined with the Meva conveyor system and spiral presses or the Sulzer PC cake pump to create a complete, tailor-made system.



Dry sludge

The situation can vary from site to site and the need for dewatering depends on the overall treatment process. Installations without a digestion process often require further dewatering to decrease sludge disposal costs and save space. This can be achieved by combining DynaBelt with the MevaPress system to enable a higher sludge content at 20-40% DM.

Features and benefits

1 Exceptionally high filtering capacity in relation to the compact size

- Excellent for small spaces
- No need to build large structures and tanks
- Fits well into an existing facility

2 Unique sludge discharge mechanism, for low operating costs

- No blower or compressor is required to clean the filter belt, which lowers energy consumption (typically <0.3 kW in operation)
- The system creates no aerosols, which reduces the need for ventilation to a minimum and results in very low ventilation costs and minimized heating cost for the facility
- Low noise levels provide a good working environment

3 Flexible and robust construction

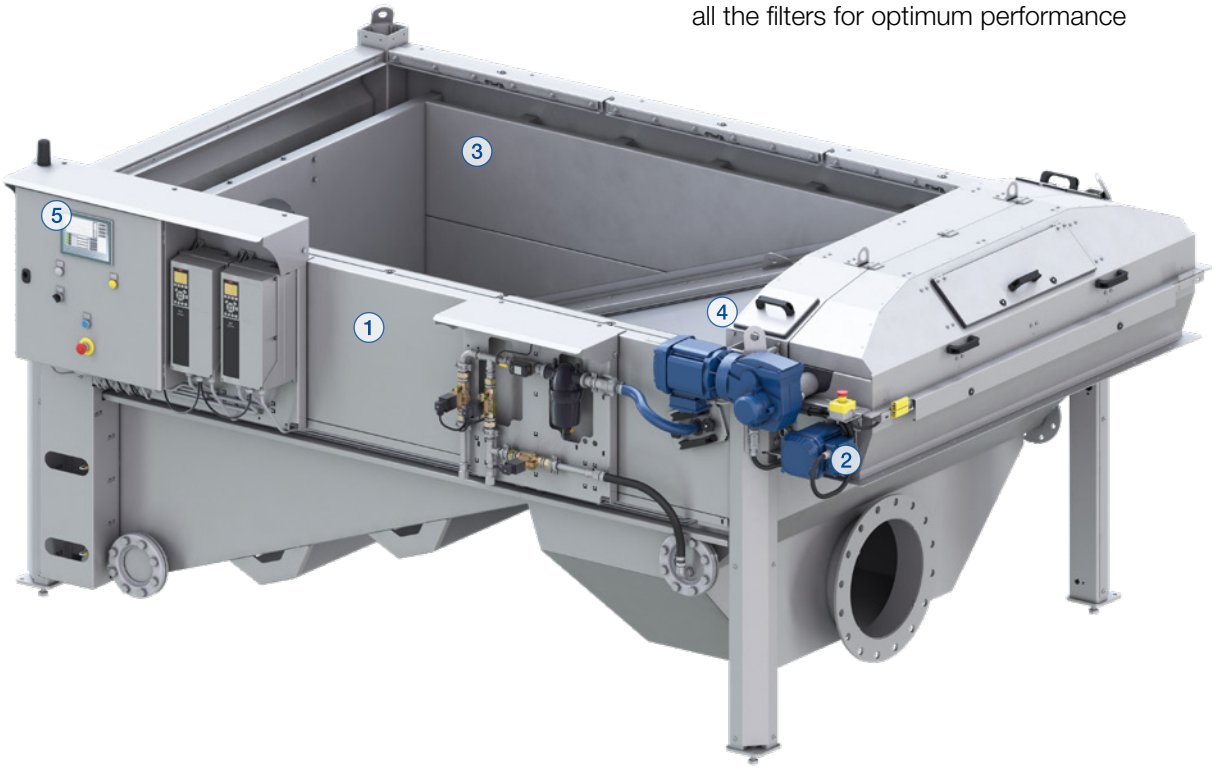
- Available in three standard versions with hydraulic capacity up to 660 m^3/h
- Longest emergency overflow weir on the market provides a low head loss in the event of an overflow
- Can be delivered as part of a complete filtration system

4 Smart filter, modular design – easy to maintain

- The filter belt is incorporated into a module that can be easily removed from the filter tank
- Automatic belt tension ensures the most efficient operation at all times
- Self-cleaning sludge discharge design, reduces the need for recurring maintenance
- Lightweight covers and hatches for simple maintenance

5 Smart functionality – easy operation

- Operational monitoring and feedback ensures continued reliability and efficiency
- Adaptive level control in an installation with multiple filters distributes the effluent load across all the filters for optimum performance



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Making water go around. Water and wastewater solutions by Sulzer.

Sulzer offers a broad range of pumps and related equipment for water production and transportation as well as wastewater collection and treatment for municipalities and industries. Our expertise also includes separation technologies, and services on rotating equipment.