

DynaDisc® Filters Remove Phosphorus and TSS in a single stage for Pietersaari WWTP, Finland

Project profile

Objective

The Pietersaari WWTP in Finland had been set a phosphorus discharge target of 0.25 mg/l and the current flotation process was struggling to meet this.

Solution

Two DynaDisc® filters were installed in the existing flotation basins to provide both TSS and phosphorus removal in a single step.

Product performance capabilities

Feature	DynaDisc®	DynaDisc® Floc
Effluent TSS removal	Down to 10 mg/l *	Down to 10 mg/l *
Effluent BOD removal	Down to 10 mg/l *	Down to 10 mg/l *
Effluent Phosphorus removal	Down to 1 mg/l **	Down to 0.25 mg/l **
Maximum flow-rate per filter	up to 588 l/s	294 l/s

* effluent standards quoted to 95%ile annual average
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Pietersaari WWTP in Finland was built in the 1970's and serves a population equivalent of approximately 5000. The plant additionally takes industrial flows from an abattoir, as well as surface water.

The plant includes conventional processes such as screening, sand/grease traps, primary sedimentation, activated sludge treatment and flotation. The flotation system was not able to meet the Total Suspended Solids (TSS) and phosphorus discharge limits.

Typical Flow and Discharge Limits	
Design Flow	2200 m ³ /h
P Discharge Limit	0.25 mg/l or less
TSS Discharge Limit	5 mg/l

DynaDisc® technology was chosen to replace the flotation system because, as well as meeting the TSS and phosphorus removal targets, it is compact and fits within the existing flotation basins. Typical TSS and phosphorus levels in the inflow, and removal levels at outflow are showing in the table, right.



Results of Sampling	
TSS at inlet	15-25 mg/l
Total P at inlet	0.75 mg/l
TSS at outlet	6-7 mg/l
Total P at outlet	0.06 - 0.08 mg/l

Two CDC2435/35 DynaDisc® filters were installed within the flotation basis. These units provide TSS and phosphorus removal in one step.

The design flow to the DynaDisc® filters is 2200 m³/h and contains a maximum phosphorus content of 0.75 mg/l. The target for total phosphorus removal is to 0.25 mg/l or less and a sample taken at the outflow to the filters is showing phosphorus at only 0.063 mg/l.



Learn more

To learn more about how the DynaDisc® can help you to remove phosphorus and TSS more effectively, visit hydro-int.com, search **Hydro DynaDisc** online or contact us:

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