



A Solution for Primary  
Treatment and Wet  
Weather Applications





# Pile Cloth Media Primary Filtration

## Featuring OptiFiber PF-14® media

The Pile Cloth Media Primary Filtration cloth media filtration system is designed as an economical and efficient solution for the treatment of primary wastewater and wet weather applications. This system utilizes a disk configuration and the exclusive OptiFiber PF-14® pile cloth filtration media to effectively filter high solids waste streams **without the use of chemicals**. This system is ideal for primary wastewater treatment and wet weather applications due to its proven removal efficiencies and high quality effluent, even under varying influent conditions.

The Primary Filtration system is designed to handle a wide range of flows in a fraction of space compared to conventional primary clarifiers. The system's high solids removal in comparison to conventional treatment provides more energy and operational savings within the wastewater treatment plant due to reduced loads to the secondary process and the increase of organic solids for anaerobic digestion, in order to produce more energy.

**Pile Cloth Media Primary Filtration contributes to the positive energy balance of WWTPs.**

### Applications

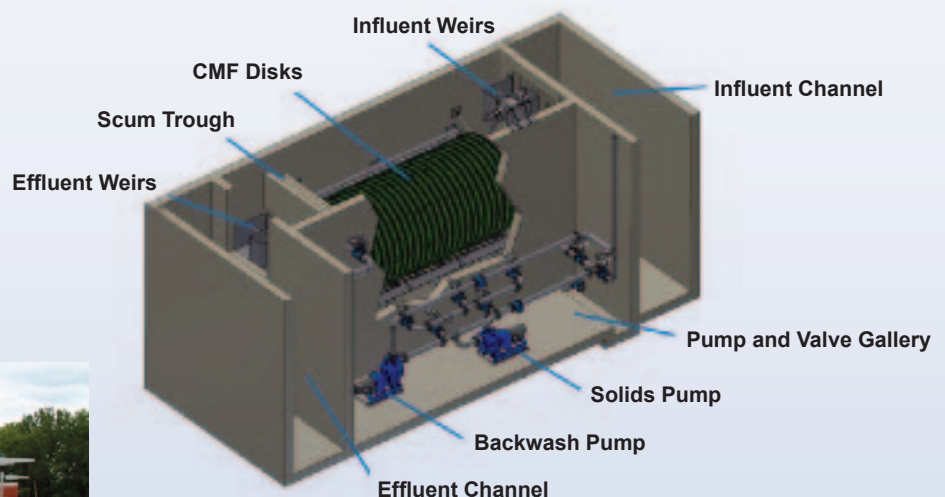
- Primary Filtration
- Stormwater
- Sanitary Sewer Overflow (SSO)
- Combined Sewer Overflow (CSO)
- High Solids Applications (Municipal and Industrial)



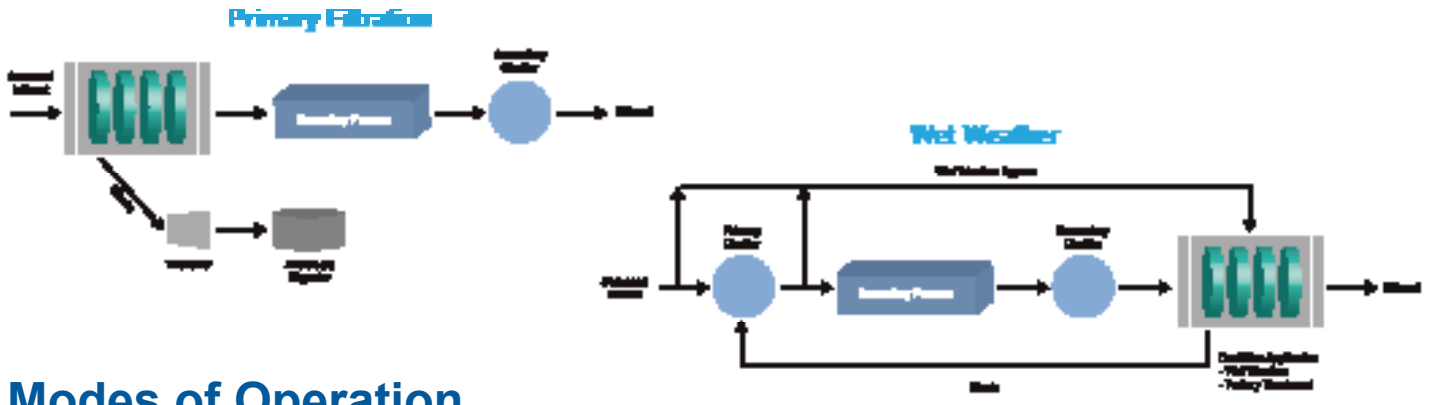
A concrete built Pile Cloth Media Primary Filtration system operating at a municipality for primary treatment.

### Features and Advantages

- Vertically oriented cloth media disks reduce required footprint
- Each disk is lightweight, with removable segments for ease of maintenance
- Effective backwash system that fluidizes cloth fibers to release stored solids
- Specifically designed floatable and solids removal zones
- Available in several configurations
- Reduced energy costs in the secondary process due to a reduction in organic loading
- Can be configured for dual use application for tertiary and wet weather operation
- Simple start-up with unattended operation for remote locations
- More organic solids for increased gas production in anaerobic digesters for primary applications



# Typical Locations for the Pile Cloth Media Primary Filtration Treatment



## Modes of Operation

The AquaPrime cloth media filtration system operates on four (4) modes of operation: FILTRATION, BACKWASH, SOLIDS WASTING and FLOATABLE WASTING. For graphical representation, the Primary Filtration modes of operation are described below:



### Filtration Mode:

- Influent wastewater/wet weather flow enters the filter by gravity
- Stationary cloth media disks are completely submerged
- Solids deposit on the outside of the cloth media forming a mat as filtrate flows through the media
- Tank liquid level rises as headloss builds due to the collection of solids
- Filtrate is collected in the hollow center tube and discharged over an effluent weir
- Heavier solids settle to the specifically designed hoppers tank bottom



### Backwash Mode:

- Solids are backwashed at a predetermined liquid level or time
- Backwash shoes directly contact the cloth media and solids are removed by vacuum pressure using a backwash pump
- Disks rotate slowly and two disks are backwashed at a time (unless a single disk is utilized)
- Filtration is not interrupted
- Backwash water is directed to waste handling facilities (thickening, digester, etc.)



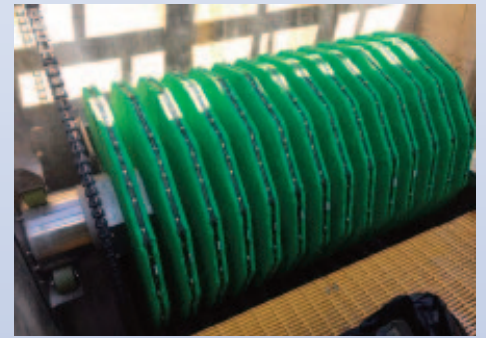
### Solids Wasting Mode

- Heavier solids in the collection hopper are removed on an intermittent basis
- Backwash/Solids Pump provides suction to the solids collection manifold for wasting of settled solids
- Solids are pumped back to the waste handling facilities (thickening, digesters, etc.)



### Floatable Wasting Mode

- Floatable scum is allowed to collect on the water surface
- After a preset number of backwashes, the water level is allowed to rise above the preset high level
- As the water level increases, floating scum is removed by flowing over the scum removal weir
- Scum wasting water is directed to the plant's waste handling facility





## Over 50 years of experience

Altogether there are today over 3000 cloth media filters totalling over 100'000 m<sup>2</sup> of filtration area, operating in more than 1500 different treatment plants worldwide!

Suitable installation and reference list are available on request.

### Mecana offers:

- Field Trials
- Engineering
- Installation supervision
- Spares in stock for rapid response
- Service, Repair, Maintenance
- 10 years spare parts delivery guaranteed



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**OptiFiber**<sup>®</sup>  
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