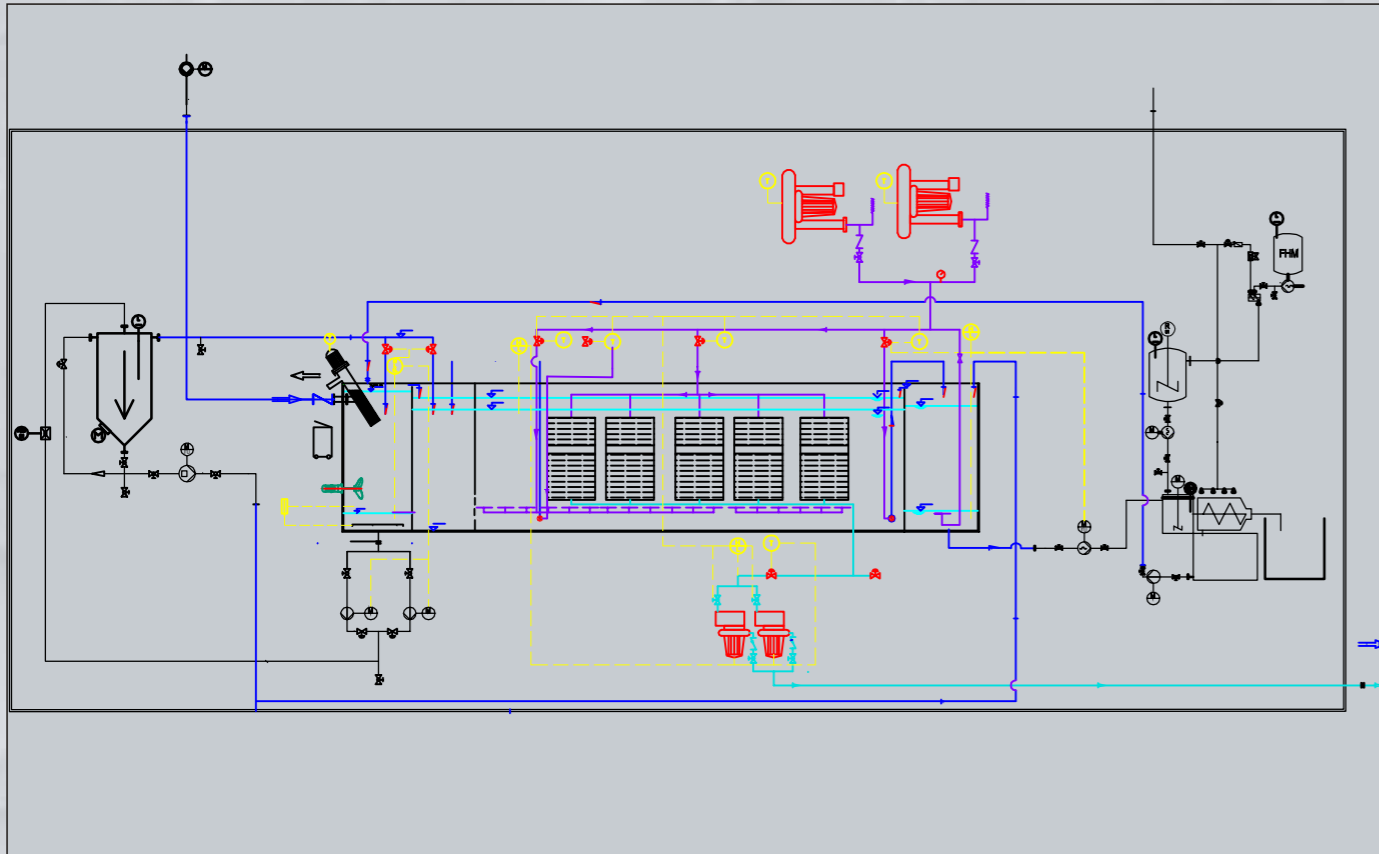


MARTI MS MEMBRANE SOLUTIONS



WORKING PRINCIPLE

Coarse Screening-Equalization Tank

The wastewater passes through a bar screen or basket screen which separates the particles bigger than 20 mm in the wastewater to protect the inlet pumps. Sewage is collected in a customer provided equalization tank which is sufficient to hold the daily peak flow for two hours. After coarse screening, wastewater passes through a flow control unit and then screw screen which is submerged inside water. While wastewater passes through screw screen bigger particles 2 mm are sieved from the waste water.

Denitrification

Wastewater enters the anoxic zone of the plant where it mixes with return sludge and recycled wastewater to convert nitrate to nitrogen gas (nitrogen removal). Suspended, free floating high efficiency bio Medias are placed inside the anoxic zone to improving denitrifying bacteria population by allocating more area over a unit of volume. While bacteria are growing, they form a layer on the specially shaped free floating Bio-Media so that the system is protected against wash-out (biomass loss) problems.

Bioreactor

The wastewater then passes to the aeration zone where dissolved organic matters and Kjeldahl nitrogen degrades by oxidation into carbon dioxide and nitrate, respectively. Oxygen is supplied to the bacteria by air blowers and very high efficiency fine bubble plate diffuser at the bottom of the aeration zone. Wastewater is then filtrated via hollow fibre membranes through which wastewater are sucked by self-priming pumps. Installation of membrane over diffusers protects also membrane by creating a mixing zone around filter via movement of air bubbles upward. Air is used for backwashing of the membranes additionally. The backwashing time is determined by pressure loss through filter automatically. Membrane system needs smaller tank volumes compared to conventional wastewater treatment systems. Additionally, since the system does not include any sedimentation process, sedimentation related problems like sludge escaping; sludge bulking or scum removal is eliminated. Less sludge production is another advantage of the system in terms of financial and environmental respects. One of the biggest advantages of the systems is the opportunity to reuse of treated wastewater.

BOD<10 mg/l and TSS<10 mg/l is almost guaranteed as the effluent criteria.

Disinfection

Optionally, wastewater can be disinfected by chlorine pump before discharging into the receiving environment.



APPLICATIONS

- Villages and small communities
- Hotels and resort areas
- Construction sites
- Gas stations
- Service stations
- Camping sites

LOW COST HIGH EFFICIENCY