



iWATER UF

Packaged Plants based on Ultra Filtration (UF) Technology



Skid Mounted UF Plant



Feed Pumps to UF System

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Ultra Filtration Plants
Compact yet Complete and Affordable

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Possible Application

- RO Pre-Treatment
- Drinking Water Treatment
- Industrial Wash Water Recovery
- Tertiary Treatment

Earthcad Environment Packaged iWater Ultra Filtration (UF) Plants are designed keeping in mind the increasing need to recycle and reuse water for various purposes so that there can be a saving in cost.

UF is a pressure driven membrane separation procedure that removes suspended or particulate matter from water. They block suspended particulates that are bigger in size while water and solutes with a lower molecular weight are allowed to flow through the membrane.

UF is more reliable than conventional filters, which removes 10 micron or larger material as compared to a UF membrane pore which can range between 0.01 to 0.10 micron along with the added benefit of lower turbidity levels and virus free effluent.

UF Plants Process Description

Ultra Filtration (UF) Plants are designed keeping into considering the following cycles:

- 1) Feed and Pre-filtration Cycle: Feed Pump in SS with VFD feeds the UF Modules and is filtered with a strainer
- 2) Production Cycle of UF: This cycle lasts for about 30 minutes and makes sure controlled flow enters the UF Modules with respect to membrane flux rate
- 3) Backwash Cycle of UF: The cycle happens after the production cycle where the membranes are back-flushed with treated water and some chemicals to remove the particles and organic matter accumulated on the surface of membrane modules.
- 4) CIP Cycle of UF: After every 20 to 30 days, a chemical intensive cleaning process is carried out to enhance the UF Membrane Flux Rate which takes about 2 to 3 hours.
- 5) All cycles are fully automated with PLC Operation and Hardware Control Panel

UF Plant Requirement

- Turbidity < 50 Max. 250 NTU
- TSS < 50 Max. < 100 mg/L
- TOC < 10 Max. < 35 mg/L
- COD Max. < 50 mg/L
- pH 6-9
- Temperature 25°C (max. 40°C)

- Feed Water Tank
- Feed water pumps with VFD
- Pre-filtration using Strainer
- Ultra Filtration Membrane Modules
- Air Compressor for UF Module
- CIP Pump and Tank Heater with Temperature Switch
- Chemical Dosing Systems for CIP
- Backwash Pump
- Chemical Dosing Systems for Backwash
- Ph Dosing System
- Instrumentation for Turbidity, Pressure, Flow, ORP, pH
- Electrical Control Panel with HMI
- Product Water Tank
- Skid Mounted or 20/40 Feet container



UF Module inside a 40 feet container in Duqm