



## UF-PACK™ WATER

### Ultra-Filtration Package Systems for Potable Water Treatment

The UF-PACK™ is a system used for all types of Water Treatment applications. It is based on the ultrafiltration (UF) technology using low-fouling hollow fiber membranes “outside-in” type and can produce high quality potable water. It is unique due to its compactness, effectiveness, and ease of installation.

DEWISE ENGINEERING offers a number of standard models ranging from 100 to 5,000 m<sup>3</sup>/day, which can be supplied in standard ISO freight containers. Multiple containers or skid-mounted units can produce plants with capacities up to 50,000 m<sup>3</sup>/day.

#### Reliable and Efficient System

UF-PACK™ is suitable for either indoor or outdoor installation (containerized system) and can operate under any weather conditions, such as extreme heat (desert conditions) or freezing temperatures, as it incorporates special features to support harsh operating environments.

The design of each UF-PACK™ plant is based on actual quality and volumetric data of the feed water to be filtered. The UF membranes used can handle waters with high turbidities and pollution.

macromolecules and viruses. This technology has been proved effective in numerous potable water installations worldwide. The resulting filtered water quality is characterized by low turbidity, absence of viruses and bacteriological contaminants and low SDI values. The filtered water can be safely used as potable water as well as a feed to other desalination applications.

The UF-PACK™ is highly stable pressure-driven membrane separation unit operating in dead-end mode. During normal operation, the water is allowed to permeate through the membrane fibers in an “outside-in” fashion whereas almost all suspended and colloidal solids are retained on the membrane surface. This leads to a significant turbidity reduction in the filtrate stream.

#### Typical raw water quality values are:

Parameter	Value	Unit
Average Turbidity	10	NTU
Max Turbidity	30	NTU
Upset Turbidity	50	NTU
TSS average	20	mg/l
TSS max	30	mg/l

The expected treated water quality from UF-PACK™ Units is shown in the table below:

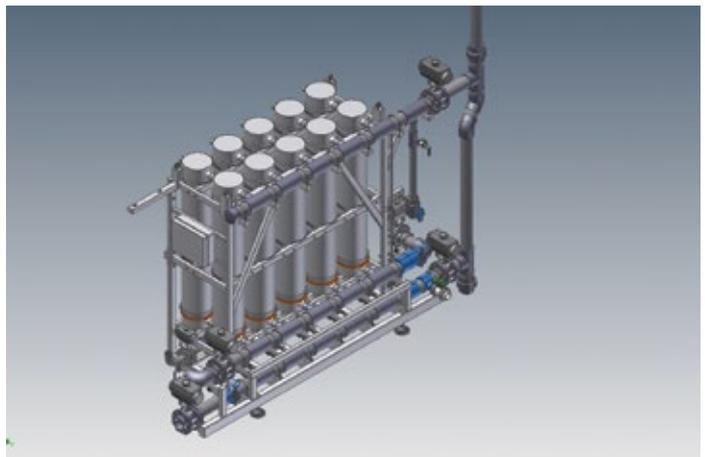
Parameter	Value	Unit
Turbidity	< 0.1	NTU
Total Suspended Solids (TSS)	< 2	mg/l
Total Coliforms removal	>6 log	CFU/ml

Membrane cleaning is performed by periodic back flushing, using filtered water, at fixed time intervals, during which the flow direction through the membranes is reversed (i.e. inside-out). This is used to effectively remove most of the suspended solids layer gradually built-up on the feed side of the membrane fibers.

Further membrane cleaning is provided by an automatic “build-in” CIP (Cleaning in Place) system using chemical solutions such as hypochlorite, acid and/or caustic soda. These chemical cleaning procedures are performed whenever required based on the Trans Membrane Pressure or on a prescheduled time plan.

#### Ultrafiltration Technology

The hollow fiber UF membranes provide a physical barrier that rejects micro solids, bacteria cells, colloidal turbidity,



# Advantages

## Smart Solution

- State-of-the-art technology
- High applied flux values and obtainable recoveries
- Fully tested before dispatch
- Ready to plug & play
- Modular design
- Easy transportation, deployment and installation
- Space saving - Small foot print
- Low energy demand

## Easy Operation

- Fully automatic
- Controlled by PLC and/or SCADA
- User friendly interface (touch screen HMI)
- Remote monitoring
- Excellent performance with process stability
- Low chemical demand

## High Performance and Quality

- Hydrophilic low-fouling membranes
- Durable and long life guarantee
- Reliable operation at high solids content
- Effective retention of bacteria cells & colloids
- High-quality & consistent permeate production
- High & reliable system performance
- Easy & low maintenance

## Plant design

The DEVISE UF-PACK™ containerized or skid-mounted unit constitutes a complete Water Treatment Plant which would only need basic "in-take" and residual disinfection works before potable water is fed directly to public water supply.

The produced treated water from a DEVISE UF-PACK™ system is the safest way to produce drinking water as the effluent water is always free of suspended solids, bacteria and other common contaminants found in raw water sources.



*UF treatment Skids*



Advanced Engineering



Easy to Transport



Plug & Play



Modular Design



Prefabricated Units



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