UF Plant

Ultrafiltration plants for clear, low-turbidity water

Overview

Ultrafiltration (UF) uses thousands of hollow fibres with tiny pores to remove suspended solids, bacteria and many viruses. It gives clear water with steady quality, even when the raw water changes.

A UF plant is often used ahead of RO to protect the membranes, or to make safe drinking water and reuse water from treated sewage. Arukal supplies UF skids with modules, pumps, valves, backwash and cleaning systems and controls.

0.01 – 0.04 µm	< 0.1 NTU	1 – 100 m³/h	up to 95 %
Pore size	Filtrate turbidity	Capacity	Recovery

Key features

Consistent clear water Turbidity below 0.1 NTU whatever the raw water.	**Automatic cleaning** Timer-controlled backwash and chemical cleaning.
Bacteria barrier Pores far smaller than bacteria give a dependable barrier.	**Small footprint** Compact skids compared with sand and media filters.
Protects RO Keeps SDI low, which extends membrane life.	**Support** Design, commissioning and service from Arukal.

Applications

RO pre-treatment • Drinking water plants • Treated sewage reuse • Process water • Swimming pools • Surface and river water

How it works

1. Feed	2. Filtration	3. Filtrate	4. Backwash and CEB
Pre-filtered water is pumped to the UF module.	Water passes through the pores of the hollow fibres from outside to inside, or inside to outside. Solids and bacteria stay behind.	Clean water collects and goes to the filtrate tank.	Regular backwash and chemical enhanced backwash clear the fibres.

Care and handling

Pre-filter. Always fit a strainer ahead of the UF so the fibres are not clogged by coarse particles.
Backwash. Keep backwash timers and flows as designed. Do not skip cycles.
Clean. Run CEB and, when needed, a full chemical clean. Use chemicals approved for the membrane.

Typical values. Values are typical for the product family and given for guidance. Exact figures depend on the make and model supplied; ask us for the data sheet of the specific model.

Plant (typical)

Membrane type	Hollow fibre, PVDF / PES / PAN
Nominal pore size	0.01 – 0.04 µm
Design flux	approx. 40 – 80 L/m²/h (LMH)
Operating pressure (TMP)	0.2 – 1.5 bar, up to 2.1 bar max
Filtrate quality	Turbidity < 0.1 NTU, SDI < 2 (typical)
Recovery	90 – 95 %
Backwash	Every 30 – 60 minutes, 30 – 60 seconds

Skid

Feed water limits	Turbidity up to 50 NTU, TSS below 50 mg/L (with strainer)
Strainer	100 – 200 micron
Materials	UPVC / SS 304 / FRP module housing
Controls	PLC with automatic backwash and CEB

Typical skid sizes

Model	Capacity	Modules	Typical use
UF 1	1 m³/h	1 small module	Drinking water, small site
UF 5	5 m³/h	2 – 4 modules	Commercial, institutional
UF 10	10 m³/h	4 – 8 modules	RO pre-treatment
UF 25	25 m³/h	10 – 14 modules	Industrial plants
UF 50	50 m³/h	20+ modules	Reuse and large plants

Capacity depends on water quality and design flux. Ask us for a design.

To receive a recommendation, send us:

- Source of water (borewell, river, treated sewage) and analysis (turbidity, TSS, iron, COD)
- Required filtrate flow (m³/h) and hours of operation
- What the filtrate will be used for (RO feed, drinking, reuse)
- Chemicals and power available