

PRODUCT DATASHEET

Packaged Water Treatment Systems

Potable-water and wastewater process trains | factory-integrated, automated and scalable

DATASHEET NO.

DS-YS-PWT-R03

ENGINEERING BASIS

PWT-C

CONVENTIONAL POTABLE WATER

Coagulation, clarification, gravity filtration and disinfection for suitable surface-water duties.

PWT-UF

SUBMERGED ULTRAFILTRATION

Fine screening and a submerged membrane barrier where feed conditions suit the selected module.

PWT-MBR

PACKAGED MBR WASTEWATER

Biological treatment and membrane separation with aeration, sludge control and disinfection as required.

1,000-30,000

PUBLISHED POTABLE RANGE

Capacity in m3/day; larger duties use parallel modules and project-specific site systems.

CATEGORY OVERVIEW

YORA packaged water-treatment systems combine the principal process stages, equipment, piping, instruments and controls within a coordinated plant boundary. They support faster site installation, clear interface management and repeatable factory assembly. The appropriate platform is selected from raw-water quality, discharge or reuse target, flow profile, temperature, chemical availability, operating philosophy and lifecycle objectives.



CONVENTIONAL POTABLE WATER

Coagulation, clarification and V-type rapid gravity filtration



SUBMERGED-UF POTABLE WATER

Fine screening and a nominal 0.1-micron membrane barrier



PACKAGED MBR WASTEWATER TREATMENT

Anoxic/oxic biological treatment, membrane bioreactor separation and disinfection

Representative unbranded system views. Final arrangement, enclosure, materials, connections and access provisions are project specific.

PRODUCT DATASHEET

Packaged Potable-Water Systems

Conventional clarification and membrane-barrier alternatives



PWT-C

Conventional Clarification and Filtration

A multi-stage treatment train for surface water and other sources that require chemical conditioning, solids separation and granular-media filtration before final disinfection or storage.

- Grid coagulation/flocculation and inclined-plate sedimentation
- V-type rapid gravity filtration with air-water backwash
- Sludge collection, thickening and dewatering can be integrated
- Listed standard capacities: 1,000-30,000 m3/day

RAW WATER	CHEMICAL MIXING	GRID FLOCCULATION	INCLINED-PLATE SETTLING	V-TYPE FILTRATION	DISINFECTION / STORAGE
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PWT-UF

Submerged Ultrafiltration

A compact membrane-based potable-water system using negative-pressure permeation through submerged UF modules after protective fine screening.

- Nominal membrane pore size approximately 0.1 micron
- Typical protective self-cleaning screen: 100-300 micron
- Listed typical air-scour / backwash interval: 60 minutes; final interval is selected by membrane and feed duty
- Listed standard capacities: 1,000-30,000 m3/day

RAW WATER	100-300 MICRON SCREEN	SUBMERGED UF	AIR SCOUR / BACKWASH	DISINFECTION	STORAGE / DISTRIBUTION
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PRELIMINARY PLATFORM COMPARISON

SELECTION POINT	CONVENTIONAL PWT	SUBMERGED-UF PWT
Principal barrier	Coagulation, settling and granular media	Approximately 0.1-micron UF membrane
Listed capacity	1,000-30,000 m3/day	1,000-30,000 m3/day
Listed quality indicator	Turbidity <=1 NTU	Physical retention of solids and colloids; microbial credit requires the applicable validation basis
Routine cleaning	Air-water filter backwash	Listed typical air scour plus water backwash interval: 60 minutes; final frequency by duty
Chemical maintenance	Coagulant, flocculant and disinfectant as required	Listed typical maintenance-clean interval: 24-48 hours; final frequency by condition
Application basis	Variable-turbidity source water and conventional treatment preference	Compact high-quality barrier and robust response to feed variation

Cleaning frequency, chemical regime, recovery and guaranteed output are finalized from membrane selection and site-specific feed-water testing.

PRODUCT DATASHEET

Packaged MBR Wastewater Treatment

Biological nutrient removal with membrane bioreactor separation



PWT-MBR

Membrane Bioreactor Wastewater Treatment

A compact wastewater-treatment train integrating preliminary screening, equalization, biological removal of organics and nutrients, membrane solids separation and final disinfection.

- Listed hydraulic range: 0.5-30 m³/h, equivalent to 12-720 m³/day
- Membrane retention supports high mixed-liquor solids; sludge yield depends on SRT and operating conditions
- Shock-load resilience is configured through equalization, loading, aeration and operating redundancy
- Effluent can be configured for discharge or reuse subject to the required standard

PROCESS TRAIN

SCREEN	EQUALIZATION	ANOXIC	OXIC	MBR	DISINFECTION	DISCHARGE / REUSE
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A/O means anoxic/oxic biological treatment. The anoxic zone supports denitrification; the oxic zone supplies aeration for carbon removal and nitrification. The MBR membrane then separates treated water from biological solids.

LISTED PRELIMINARY OPERATING BASIS

PARAMETER	INDICATIVE RANGE / FUNCTION	DESIGN NOTE
Hydraulic capacity	0.5, 1, 3, 5, 10, 20 or 30 m ³ /h	Additional sizes and parallel trains available on request
Daily equivalent	12-720 m ³ /day	Based on 24-hour continuous operation
Influent BOD₅	150-400 mg/L listed	Confirm average, peak and minimum temperature
Effluent BOD₅	Listed project-selection range: 10-60 mg/L	Final target, including more stringent duty where required, is selected from the actual influent and applicable discharge / reuse standard
Biological duty	Organic removal, nitrification and denitrification	Requires nutrient balance, alkalinity and dissolved-oxygen control
Solid-liquid separation	Submerged membrane bioreactor	Flux, recovery, air scour and cleaning depend on selected membrane
Disinfection	Project-selected final barrier	UV or chemical system selected to microbial target and reuse duty
Controls	Automatic package sequencing and alarms	Remote interface and SCADA integration available

TYPICAL APPLICATIONS AND DESIGN SAFEGUARDS

TYPICAL APPLICATIONS	DESIGN SAFEGUARDS
› Residential and commercial developments › Remote camps and infrastructure sites › Industrial domestic-wastewater streams › Decentralized municipal treatment › Treated-effluent reuse after project-specific polishing	› Peak-flow equalization and upstream screening › Duty / standby aeration and transfer equipment › Foam, level and overflow management › Membrane clean-in-place and chemical containment › Bypass, emergency storage and alarm philosophy

The values above are listed preliminary ranges, not a universal performance guarantee. Final effluent limits and package configuration are established from the confirmed influent envelope and governing standard.

PRODUCT DATASHEET

Selection, Configuration and Scope

Turning the water-quality objective into a complete packaged plant

SYSTEM SELECTION BASIS

DESIGN FACTOR	INFLUENCE ON CONFIGURATION	PROJECT INPUT REQUIRED
Water source and variability	Determines pretreatment, equalization and process resilience	Full analysis, seasonal variation, contaminants and upset conditions
Required outlet quality	Sets process train, membrane barrier, disinfection and polishing	Potable, discharge, reuse and downstream process limits
Hydraulic duty	Sets number of trains, storage, recovery and peak handling	Average, peak and minimum flow plus operating hours
Residuals route	Defines backwash recovery and sludge handling	Drainage, thickening, dewatering and disposal constraints
Site and climate	Controls enclosure, ventilation, insulation and access	Ambient range, wind, dust, humidity, flood level and plot limits
Operating philosophy	Sets redundancy, automation and remote support	Staffing, allowable downtime, SCADA standard and maintenance strategy

TYPICAL MATERIALS AND CONFIGURATION

ITEM	AVAILABLE PROJECT CONFIGURATION
Package structure / tanks	Coated carbon steel or SS304 as typical; SS316 and project-specific lining or coating available according to water chemistry
Process piping	uPVC, HDPE, coated carbon steel, SS304 or SS316 selected by pressure, chemical and corrosion duty
Membrane systems	Submerged UF or MBR modules with air scour, backwash, maintenance clean and clean-in-place provisions
Chemical systems	Coagulant, flocculant, pH correction, disinfectant, carbon source and membrane-cleaning chemicals as required
Enclosure and climate	Thermal insulation, ventilation, air extraction, heating or air conditioning selected for process and operator needs
Protection and monitoring	Flood detection, leak containment, gas detection where applicable, online water-quality instruments and remote alarms
Controls	Local PLC/HMI, automatic sequencing, duty/standby logic, data logging and SCADA interface

STANDARD SUPPLY SCOPE	EXTRA OPTIONS
› Selected process equipment and package tanks › Interconnecting package piping and valves › Core instruments, local panel and automatic sequence › Access provisions within the agreed package boundary › General arrangement and equipment documentation	› Feed, product, backwash and sludge tanks › Sludge thickening, dewatering and backwash recovery › Containerized enclosure, HVAC, insulation and lighting › Online analyzers, remote SCADA and telemetry › Commissioning, training and service support

INFORMATION REQUIRED FOR FINAL SELECTION

1 WATER QUALITY	2 PERFORMANCE	3 SITE BASIS	4 OPERATIONS
Complete raw-water or wastewater analysis, variability and design temperature	Required capacity, outlet standard, recovery, reuse duty and guarantee conditions	Plot, utilities, climate, drainage, civil interfaces and installation constraints	Redundancy, automation, staffing, chemical availability and residuals route

Published configurations and values provide the preliminary selection basis. Final process train, number of modules, dimensions, materials, power, chemical use, sludge production, membrane flux, cleaning frequency, water recovery, microbial validation, applicable standards and guaranteed performance are confirmed from actual conditions and client technical specifications. Non-standard additions are identified as Extra Options.