

# Redefining ultrafiltration

Advanced hollow fiber ultrafiltration technical specifications.

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WATER TECHNOLOGIES PVT. LTD.

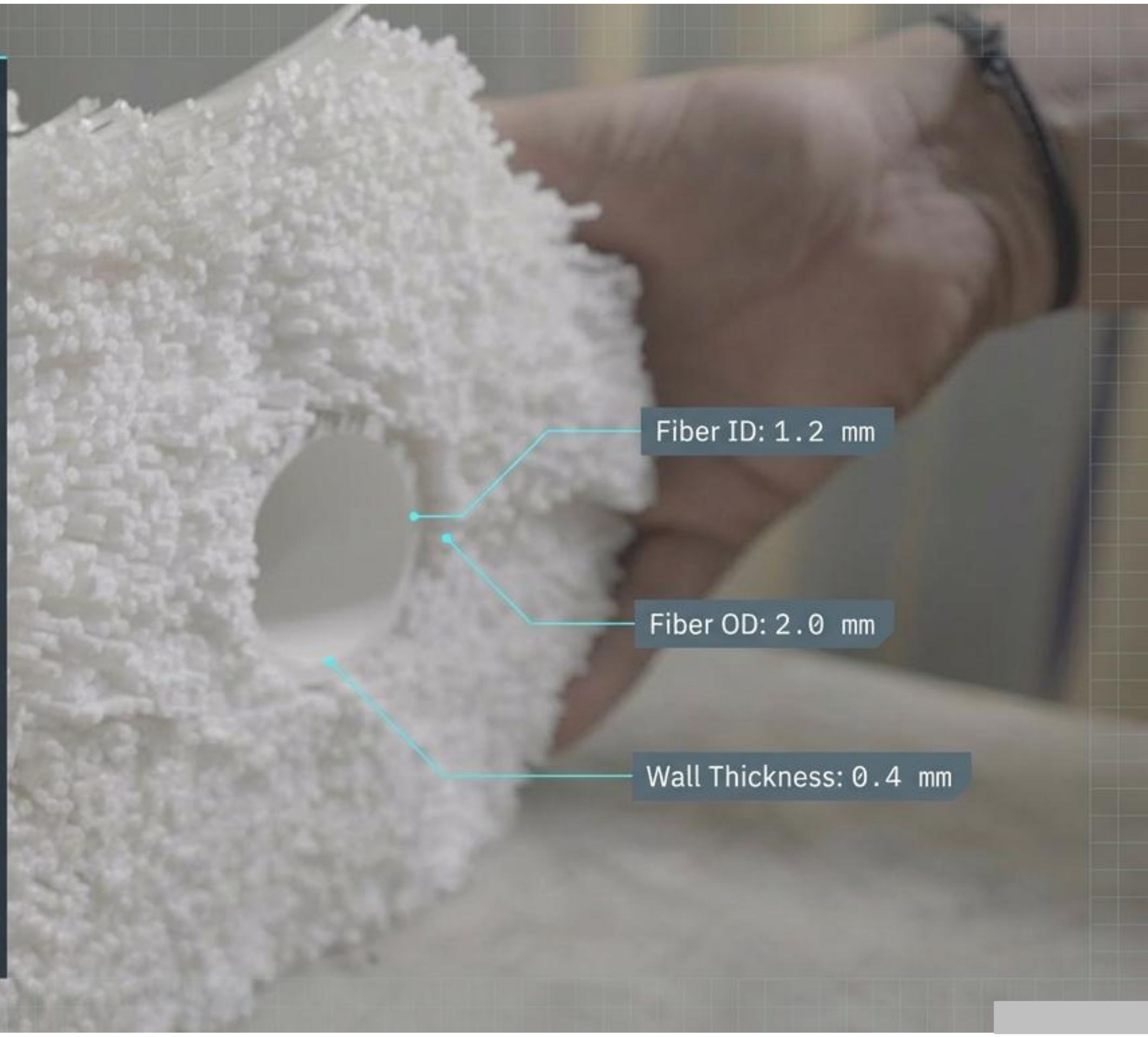
## Precision Structure. Dry-Jet Wet Spinning.

Aquabrane manufactures advanced hollow fiber ultrafiltration membranes using dry-jet wet spinning phase inversion technology, ensuring high precision and consistent membrane structure.

Produced with premium-quality polymers and chemicals.



Operating Flow Path: Outside to In



Fiber ID: 1.2 mm

Fiber OD: 2.0 mm

Wall Thickness: 0.4 mm

# Rigorous Validation Protocol

Ensuring uniform pore size distribution, accurate specifications, and structural integrity.



## Independent Testing

Membranes are tested by leading government and private institutes to ensure consistent performance, specifications, and uniform pore size distribution.



## Research Collaborations

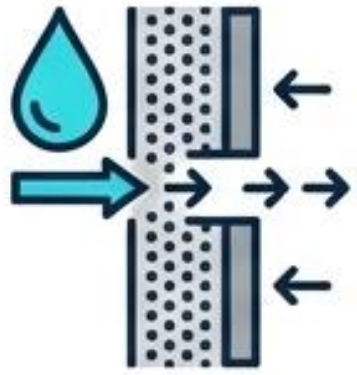
Long-term partnerships with universities and research institutions enable continuous technological improvements in design and manufacturing.



## Advanced Quality Audits

Scanning Electron Microscope (SEM) images are periodically evaluated by external institutes to verify structural integrity and quality consistency.

# The Objective: Low Transmembrane Pressure



High-Performance  
Out-to-In Flow  
Design.

Extremely Low TMP  
**0.55–0.83 Bar**  
(8–12 psi)



Efficient Filtration  
& Reduced Energy  
Consumption.

Every dimension, material choice, and validation protocol is engineered to maintain stable flux at minimal operating pressures, lowering long-term operational expenditure.

# Module Characteristics



<b>Housing Material</b>	UPVC	CPVC	UPVC	CPVC
<b>End Cap Material</b>	Glass Filled ABS			
<b>Nozzle Size</b>	1.5" NPT			
<b>Potting Material</b>	Aquabrane Proprietary Compound			
<b>Weight (Empty/Filled)</b>	23 / 27 kg			

# Selection Matrix: Environmental Tolerances

Isolating material and housing configurations for high-temperature or high-fouling applications.

Parameter	S-830 Normal (Non-Coated)	S-830 Normal (Coated)	S-830 HT (Non-Coated)	S-830 HT (Coated)
Membrane Material	Modified PES	Modified PES with Graphene Coating	Modified PES	Modified PES with Graphene Coating
Housing Material	UPVC	UPVC	CPVC	CPVC
Max Temperature	5-45°C	5-45°C	5-65°C	5-65°C
Max Oil & Grease	<1 ppm	25 ppm	<1 ppm	25 ppm

Diagnostic Key	HT Designation = CPVC Housing for 65°C continuous operation. Coated Designation = Graphene coating for enhanced 25 ppm Oil & Grease tolerance.
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# Technical Specification: Physical Characteristics

## Fiber Dimensions

Surface Properties	Fiber ID (mm)	Fiber OD (mm)	Wall Thickness
Hydrophilic	1.2 mm	2.0 mm	0.4 mm

## Universal Module Specs

Membrane Area	20 m <sup>2</sup>
Flow Path	Outside to In
Operating Mode	Dead End / Cross Flow
End Cap Material	Glass Filled ABS
Nozzle Size	1.5" NPT
Potting Material	Aquabrane Proprietary Compound
Weight (Empty/Filled)	23 / 27 kg

# Technical Specification: Operating Parameters



## Hydraulics & Pressure

Clean Water Flux @20°C ... 125–150 LMH

UF Inlet Pressure ..... 0.8–1 Bar  
(Max 1.5 Bar)

Transmembrane ..... 0.55–0.83 Bar  
Pressure (TMP) (8–12 psi)



## Feed Water Limits

pH (Continuous) ..... 3–9

Max Feed TSS ..... 100 mg/L

Max Feed Turbidity ..... 150 NTU

Max NaOCl (Continuous) ..... 20 ppm

Chlorine Tolerance .... 100,000 ppm·hrs

# Technical Specification: Backwash & Air Scouring

## Backwash Parameters



Backwash Flux Range	Greater of $1.5 \times$ flux or $1.5 \text{ m}^3/\text{hr}$
Backwash Feed Pressure	1-1.4 Bar (14-20 psi)
Frequency & Duration	20-60 min OR 20% TMP rise; 30-60 sec
Forward Flush	60 sec (6-12 hrs) OR 30-45 sec post BW

## Air Scouring



Air Scouring Pressure	0.55-1 Bar (8-15 psi)
Air Scouring Flow	$3.6 \text{ Nm}^3/\text{hr}$
Air Scouring Duration	30 sec + Backwash time

# Technical Specification: Chemical Cleaning Protocols

## Chemical Dosing Limits



pH (Cleaning Range)	2-11
Standard Dosing	20 ppm NaOCl dosing
Enhanced Backwash (EBW)	200 ppm NaOCl daily
Maximum NaOCl (Cleaning)	1000 ppm (100 ppm free Cl <sub>2</sub> )
Corrective pH Cleaning	HCl / NaOH as required

Strict adherence to these chemical cleaning parameters guarantees optimal membrane performance up to the 100,000 ppm·hrs chlorine tolerance threshold.