

Ceramic MBR and UF

Silicon carbide and alumina in flat sheet and tubular forms. A backwash path for hard feeds, oil, acids, and aggressive cleaning.

100 nm SiC flat sheet filtration precision	40 to 150 LMH SiC flat sheet design flux by duty	1.2 bar backwash 17 psi max backwash, CEB maintenance, CIP recovery	75 m² towers Up to 10 modules stacked per tower
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CLASS SELECTION

Choose material and geometry against the stream

CLASS	FLAT SHEET	TUBULAR
SILICON CARBIDE	Very high flux, compact, backwashable. Strong fit for industrial wastewater and submerged ceramic MBR duty.	Pressurized, compact, oil tolerant, and suited to high flux cross flow duty.
ALUMINA	Workhorse oxide ceramic with a broad pore range and aggressive cleaning tolerance.	More affordable ceramic path for pressurized UF, product recovery, and tighter separations.

Standard SiC flat sheet module published below. Tubular and alumina quoted against the stream.

STANDARD SiC FLAT SHEET MODULE

Module and sheet data

PARAMETER	PUBLISHED BASIS	PROJECT OUTPUT
MODULE	746 × 715 × 160 mm (29.4 × 28.1 × 6.3 in). 44.8 kg (99 lb) dry. 42 sheets, 7.5 m². Glass fiber reinforced NORYL housing.	Skid, connections, and envelope on quotation.
SHEET	600 × 145 × 6 mm (23.6 × 5.7 × 0.24 in). 0.177 m² per sheet. 100 nm. Spacing 8 to 36 mm (0.31 to 1.42 in).	Spacing set against solids.
LIMITS	Max suction -0.6 bar (-8.7 psi). Max backwash 1.2 bar (17 psi). 5 to 45 °C.	Operating point set at commissioning.
DESIGN FLUX	60 municipal MBR, 40 industrial MBR, 150 submerged UF, 100 to 120 oily or high hardness LMH.	Final flux confirmed at commissioning against feed and cleaning regime.
AIR SCOUR AND CLEANING	0.7 to 0.9 Nm³/(h·m²) (0.41 to 0.53 scfm per m²). 50 to 70 Nm³/h (29 to 41 scfm) per 75 m² tower. 20 to 90 min cycles, backwash to 1.2 bar (17 psi). CEB maintenance, CIP recovery.	Intermittent air for MBR. Cleaning cycles only for UF and drinking water.
TOWER AND ORIGIN	Up to 10 modules stacked, 75 m² per tower, base and header manifold, no external frame. Zyramic standard product; tubular and alumina built from sourced elements.	Tower count and layout on quotation.

CLEANING

Real backwash plus CEB and CIP

Both SiC and alumina, in flat sheet or tubular geometry, can be configured for backwash and chemical cleaning. Periodic backwash, CEB maintenance, CIP recovery. Strong acid and alkali cleaning tolerance.

Flux stated in LMH only

DUTY	DESIGN FLUX
MUNICIPAL MBR	60 LMH
INDUSTRIAL MBR	40 LMH
SUBMERGED UF	150 LMH
OILY OR HIGH HARDNESS FEED	100 to 120 LMH
SIC FLAT SHEET, BY DUTY	40 to 150 LMH
PRESSURIZED TUBULAR, DESIGN CEILING	Up to 170 LMH on suitable streams

SIZING BASIS

Feed first

- Ceramic selection starts with particle size, oil, pH, temperature, solids, viscosity, recovery, and cleaning constraints.
- Module sizing: flow divided by validated net flux gives active area. Recovery, cross flow velocity, redundancy, and cleaning sequence then set the module count.
- Typical use: MBR trains, industrial wastewater, municipal reuse, and feeds that need backwash. Oil and chemicals, food and beverage, brine, catalyst recovery, and process water.

Zyramic manufactures the modules.

Choose ceramic when the feed or cleaning regime exceeds polymer comfort. Silicon carbide leads on oil tolerance, extreme chemistry, and high flux. Alumina is the lower cost workhorse with a wider tight pore range. Duty: MBR, UF, and MF for harsh industrial and municipal feeds.