Ceramic Filtration Equipment and Components

Product brochure

Ceramic filters, filter plates, membrane systems and replacement components for solid-liquid separation.



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1. SDW Technical Consulting

Equipment and replacement components

SDW Technical Consulting (PTY) LTD supports enquiries for industrial equipment and replacement components for mining and mineral processing applications. This brochure presents ceramic filtration equipment, filter media and related components for technical assessment and quotation.

Filtration product range

The featured range includes double-pressure nano ceramic filters, ceramic disc filters, ceramic filter plates and accessories, dynamic crossflow membrane filtration systems and ceramic tubular membranes.

Application led selection

Provide slurry characteristics, operating duty, target cake moisture or filtrate quality, and installed equipment details. Equipment sizing, materials, compatibility and performance must be reviewed against the intended application before an order is finalised.

Technical information

Product photographs, model designations and technical data originate from the manufacturer brochure. Manufacturing photographs show supplier facilities. Supply scope, availability, specifications, performance and delivery terms are subject to written confirmation by SDW Technical Consulting.

2. Supplier manufacturing facilities

Supplier workshop and production reference photographs.








Supplier manufacturing facilities

Supplier workshop and production reference photographs.













3. Double pressure nano ceramic filters

Features

The dual-pressure design uses nano-ceramic technology to reduce cake moisture and improve filtration efficiency. The stated material range is -300 to -2000 mesh.

Applications

Chemical, mining, pharmaceutical and food processing applications, including concentrate extraction, thickener replacement and tailings dewatering.

Technical advantages

Manufacturer figures indicate moisture reductions of 3-8% compared with conventional filters, fine particle separation at 5-20 µm, and final moisture as low as approximately 10%. Actual performance depends on the application and requires confirmation.



Nano ceramic filter equipment









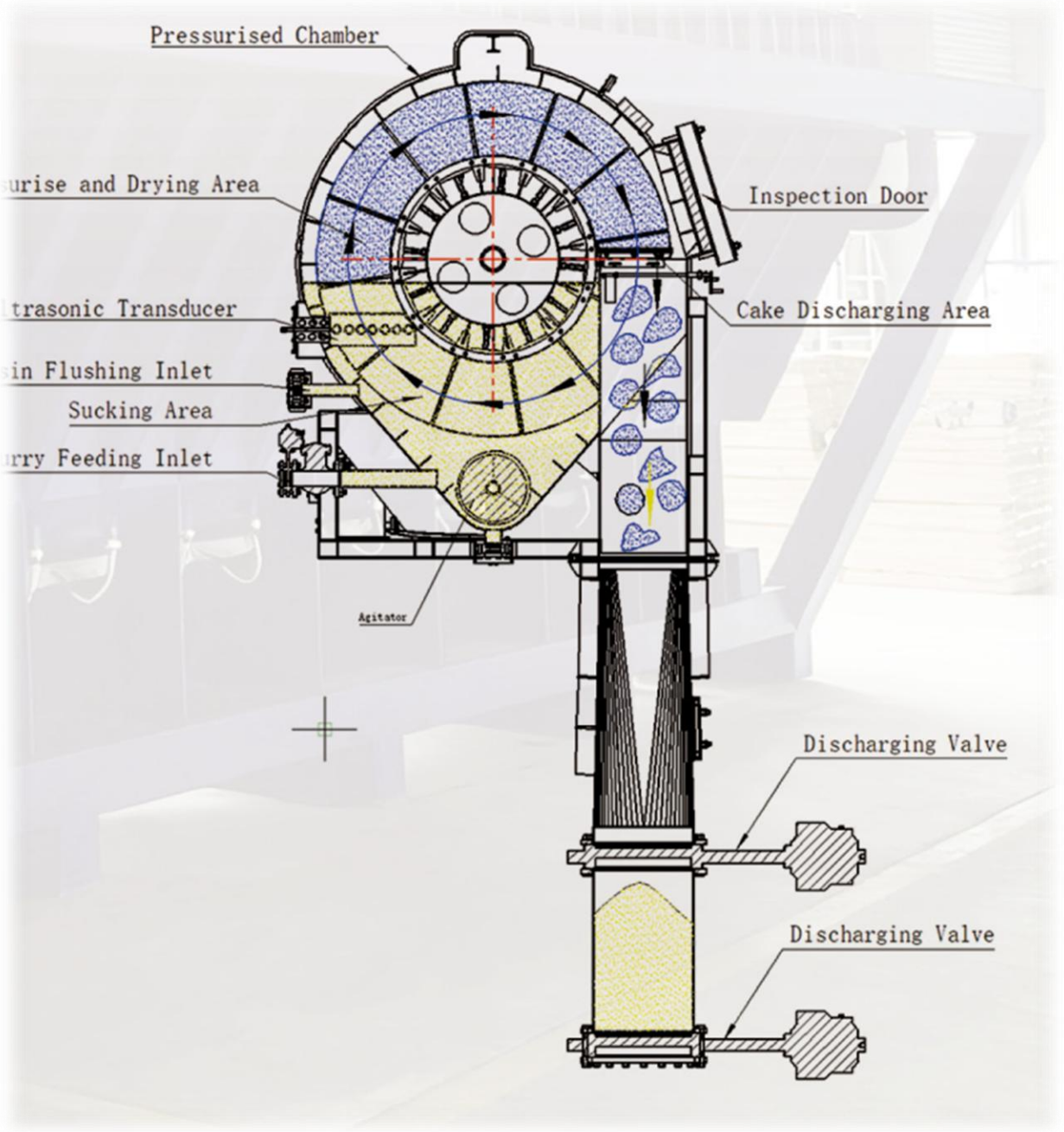


4. ZTST 30 5 working principle

The double-pressure nano ceramic filter improves on conventional vacuum filtration through the following features.

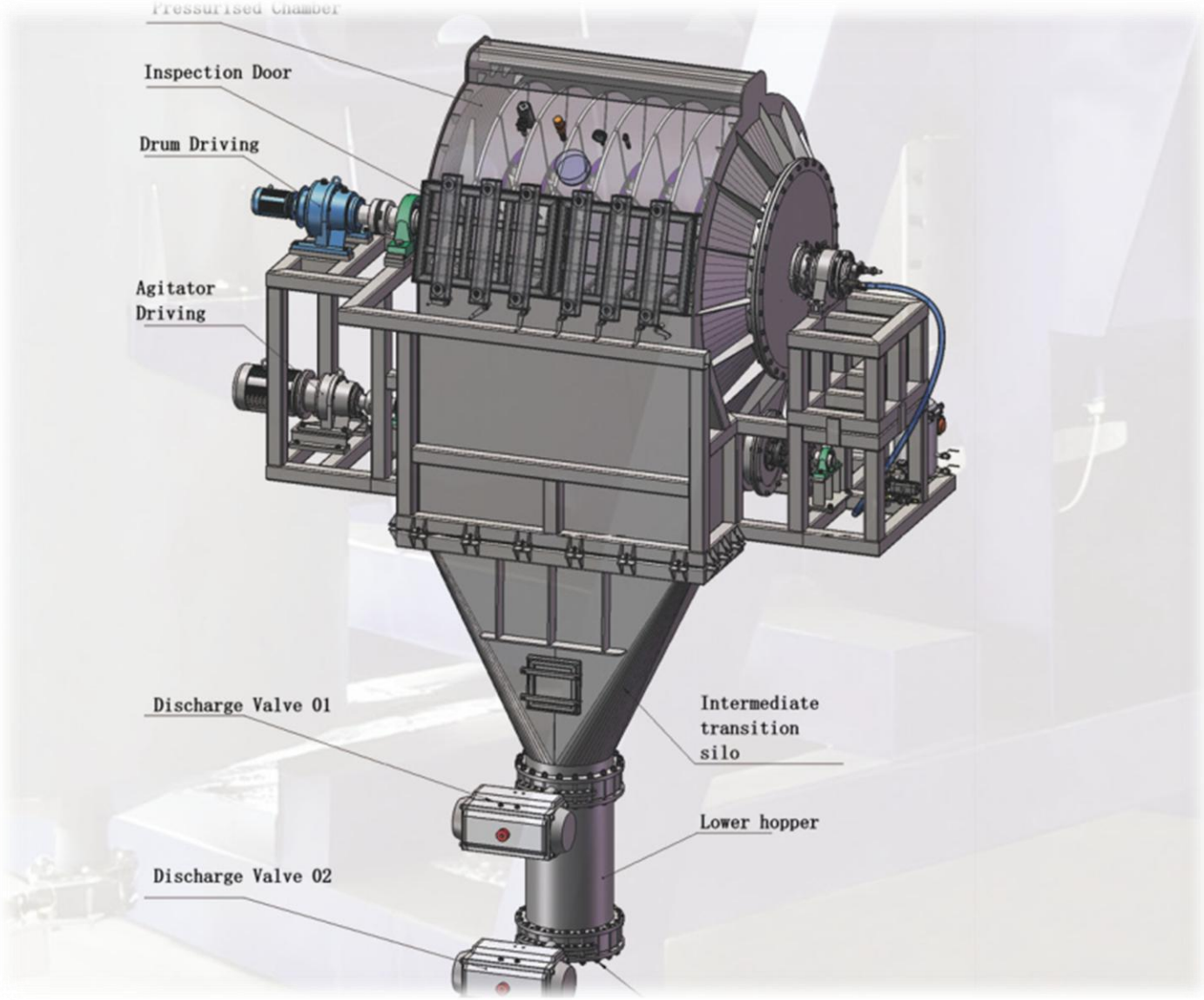
1. Nano-scale ceramic membranes with smaller, uniform pores to resist clogging.
2. An external pressurised chamber at 1-2 bar, with a stated pressure differential up to 3 bar, to reduce moisture and increase output.
3. A pressure-retaining discharge arrangement.

The process combines capillary action and pressure for fine, sticky and difficult-to-dewater materials, including high-altitude applications.



ZTST 30 5 technical parameters

Parameter	Value
Filter area	30 m²
Filter plate area	5 m²
Quantity of plates	72
Length	5200 mm
Width	2860 mm
Height	3285 mm main unit + 3250 mm discharge hopper
Net weight	12013 kg
Installed power	28.5 kW
Average operating power consumption	20 kW



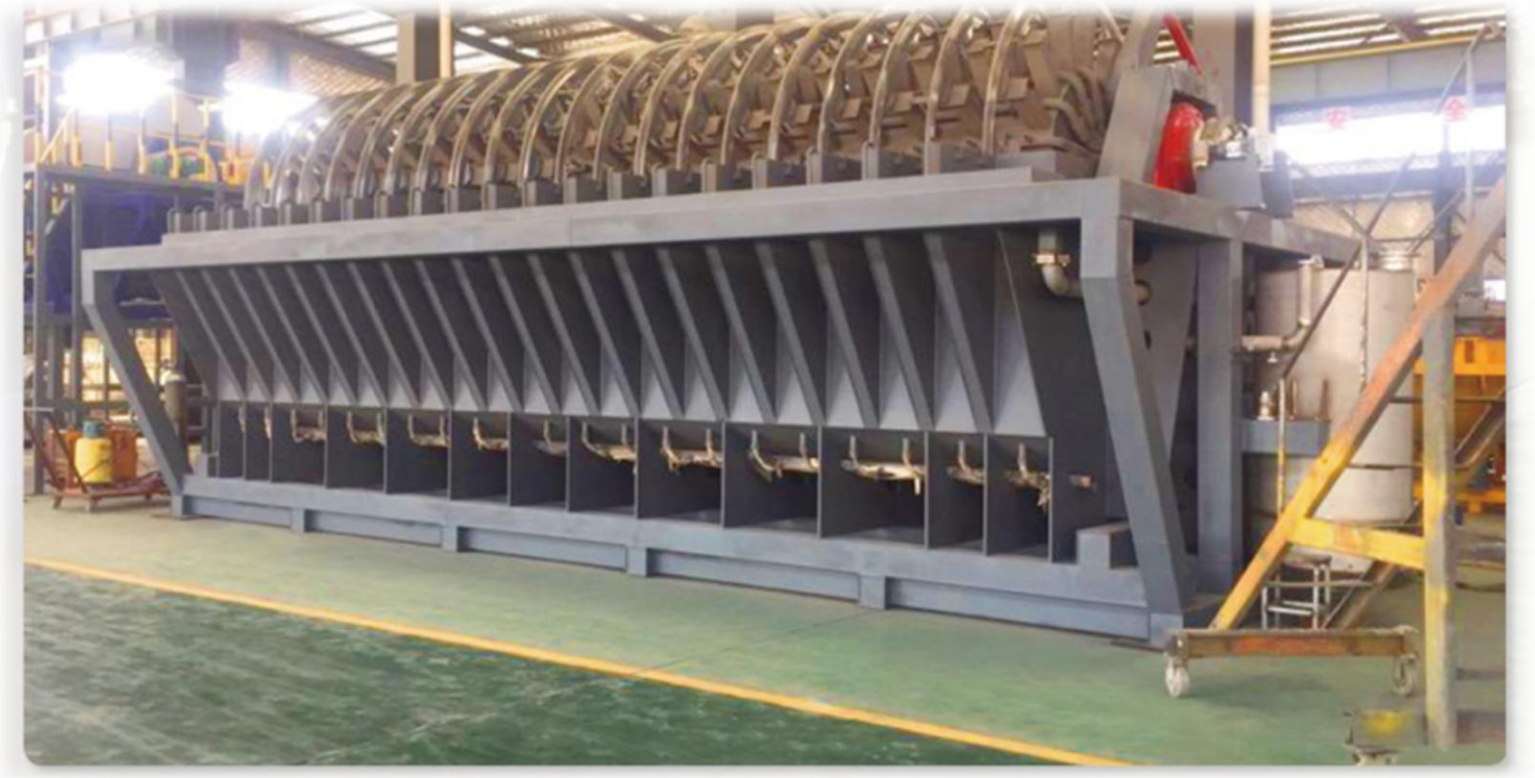
5. Ceramic filters

Features
Ceramic filters combine mechanical systems, micro-ceramics and ultrasonic technology. Vacuum suction and capillary action provide solid-liquid separation. The stated filter area range is 1-240 m² for materials at -200 to -400 mesh.

Applications
Slurry, chemical raw material and metal powder filtration in mining, chemical and metallurgical operations.

Technical advantages
Corrosion-resistant and wear-resistant ceramic media, a compact arrangement, a small footprint and accessible maintenance. Selection and service life depend on operating conditions.

RX-240 ceramic filter



6. RX 204 ceramic filter









6.Ceramic filter plates and accessories

Features

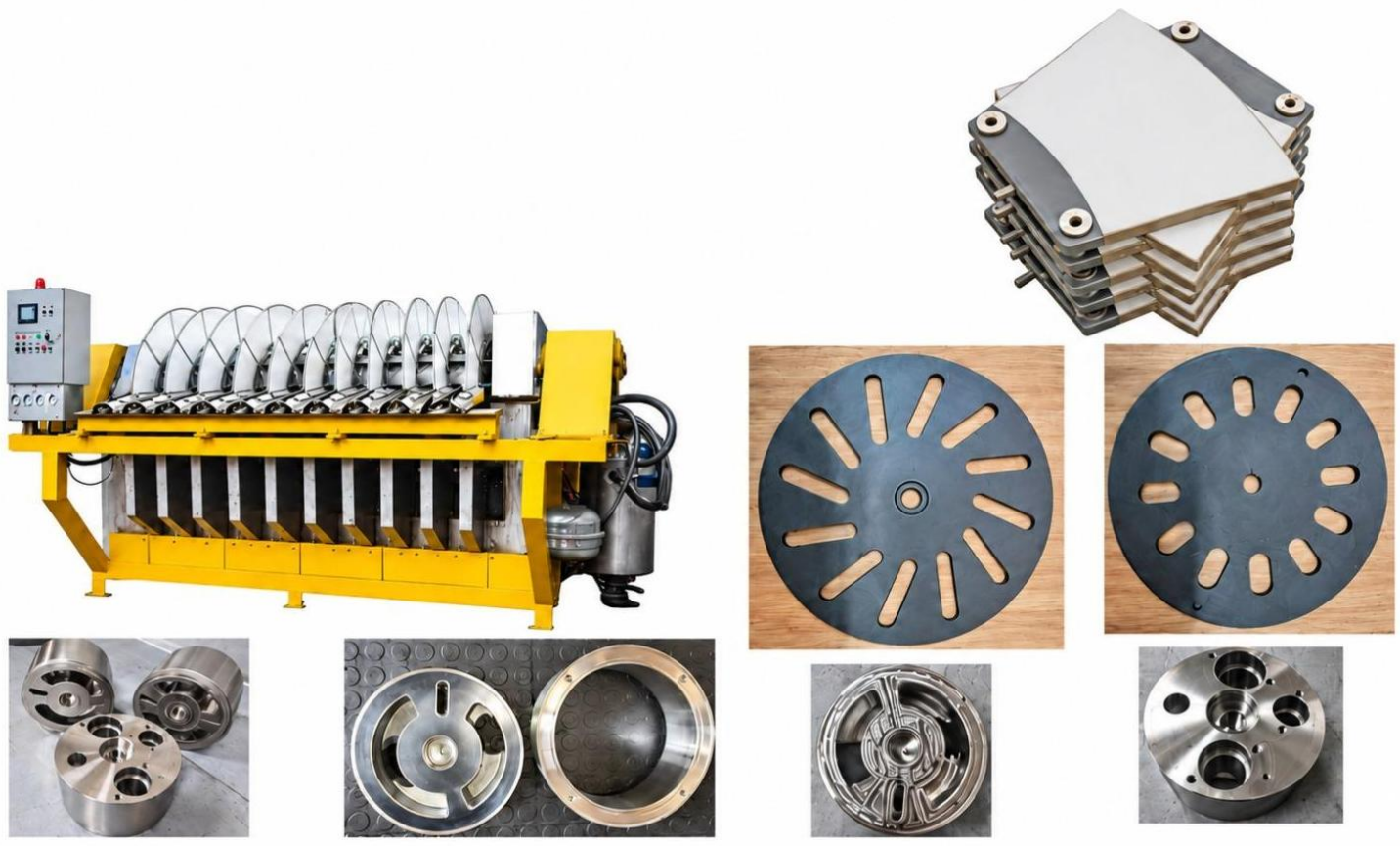
Porous ceramic elements provide filtration precision and mechanical strength for -200 to -400 mesh materials.

Plate sizes and filtration grades

The stated membrane surface pore size range is 0.1-20 µm, including a 0.1 µm nano-membrane version. Plate areas per disc include 1, 2, 3, 4, 5, 6 and 12 m². Replacement plates for CC-144 and CC-240 ceramic filters are subject to confirmation of dimensions and compatibility.

Integral forming

Conventional bonded plates can be vulnerable to breakage. The supplier describes an integral mould casting process intended to avoid adhesive-related pore blockage, uneven absorption and reduced strength.



7. Integral forming technology





RX Ceramic Plate >>>

RX-12 Ceramic Plate >>>







RX-5/10 Ceramic Plate >>>

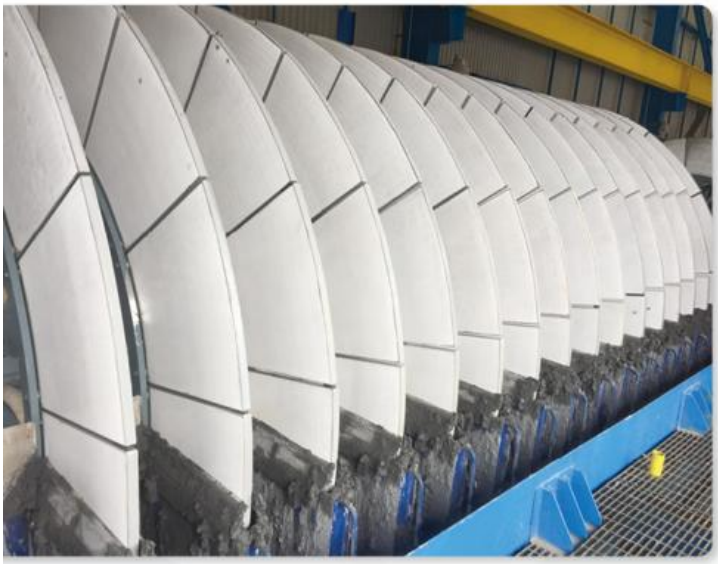


Application scenarios and performance







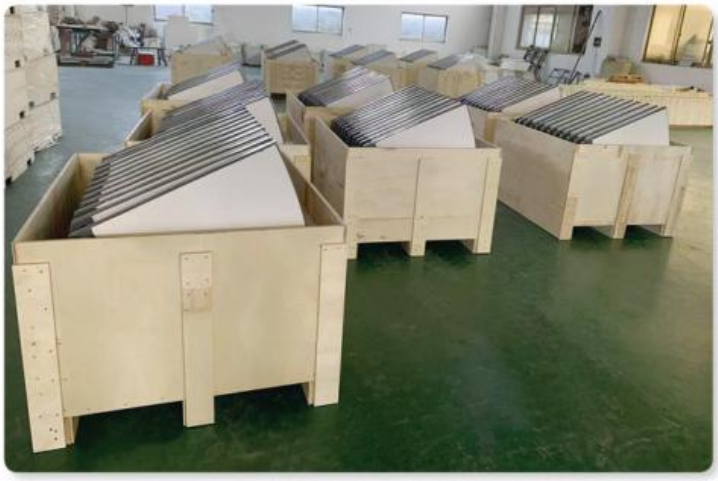


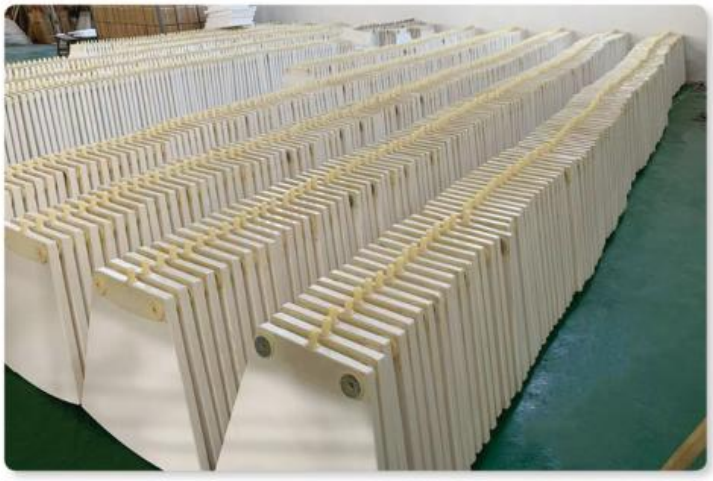


8. Ceramic plate product gallery













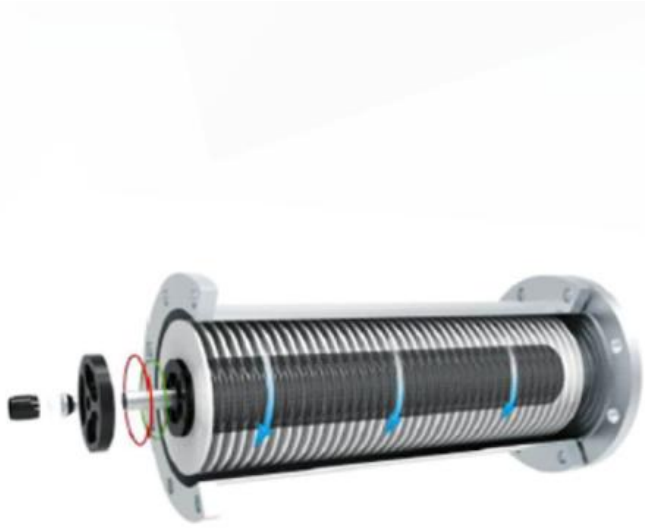
9.Dynamic crossflow filtration

The rotating membrane system supports continuous filtration. Membrane rotation generates dynamic crossflow intended to reduce fouling. Applications include suspensions, colloids and polymers in biotechnology, food and beverage, pharmaceuticals, chemicals and industrial wastewater treatment.

Model	Membranes	Capacity L/h	Power kW	Disc cm
ZT152-200	10	150-1000	1.5	15/20
ZT-312	10-100	750-15000	1.5-7.5	31
ZT-374	10-100	1000-20000	1.5-7.5	37.4
ZT-374	50	10000-25000	7.5	60
ZT-800	50	20000-50000	12.5	80

Membrane disc filtration grades: 2.0, 1.0, 0.5, 0.2, 0.1, 0.08 and 0.05 µm. The source lists ZT-374 twice with different disc diameters; confirm the exact model on quotation.



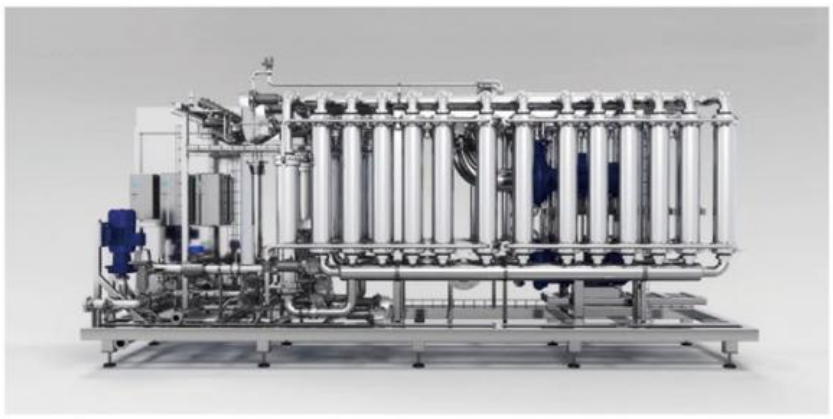


10.Ceramic tubular membranes

Porous ceramic tubular membranes provide selective separation and filtration of liquids or gases. Applications include water treatment, chemicals, food and beverage, and biopharmaceutical processes. Chemical resistance, operating pressure and temperature, cleaning and regeneration requirements must be matched to the selected membrane.

Outside diameter mm	Length mm	Channels	Channel diameter mm	Area m²
25	250	19	3.5	0.05
25	250	23	3.5	0.07
25	1178	7	6	0.16
25	1178	8	6	0.20
25	1178	19	3.5	0.25
25	1178	23	3.5	0.35
25	1178	49	2.5	0.50
41	1000	19	6	0.35
41	1000	25	5.5	0.47
41	1000	37	3.6	0.42

Manufacturer stated membrane tube burst pressure: 90 bar. This is a burst figure and must not be used as a system operating pressure. Membrane support: TiO2. Membrane layer: TiO2/ZrO2.





Ceramic membrane filtration grades

Filtration class	Grades
Microfiltration	0.14, 0.2, 0.45, 0.8 and 1.4 µm
Ultrafiltration	15, 50, 150 and 300 kDa
Fine ultrafiltration	1, 3, 5 and 8 kDa

Confirm the membrane grade, channel arrangement, dimensions and cleaning requirements before ordering.

11. Request a quotation

Complete filtration equipment
Send required throughput, slurry solids concentration, particle size distribution, chemistry, temperature, target cake moisture and filtrate quality. Include utilities and installation constraints.

Replacement plates and components
Provide manufacturer, model, serial number, equipment tag, part numbers or drawings, plate dimensions and connections, material or filtration grade, quantities, and photographs or samples.

Project and delivery requirements
State delivery destination requires a delivery date, shutdown schedule and inspection or certification requirements. Final scope and performance commitments will be confirmed in writing.

Contact SDW Technical Consulting
Stephen de Wet
Email: info@sdwconsult.co.za
Address: 26 Skurweberg Street, Aerorand, Middelburg, 1050

Manufacturer model references identify the equipment shown. They do not imply that SDW Technical Consulting manufactures the equipment or owns the facilities illustrated.