



The way Membranes



SURGE

Submerged Membrane Bio Reactor (MBR) Series



MAKE IN INDIA

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Definition

Membrane Bio Reactor (MBR) is a suction pressure membrane-based separation process designed to remove Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Turbidity, suspended solids (TSS), Sludge, bacteria, viruses, endotoxins, and other pathogens. This process produces water with very high purity and a low silt density index (SDI)

Applications

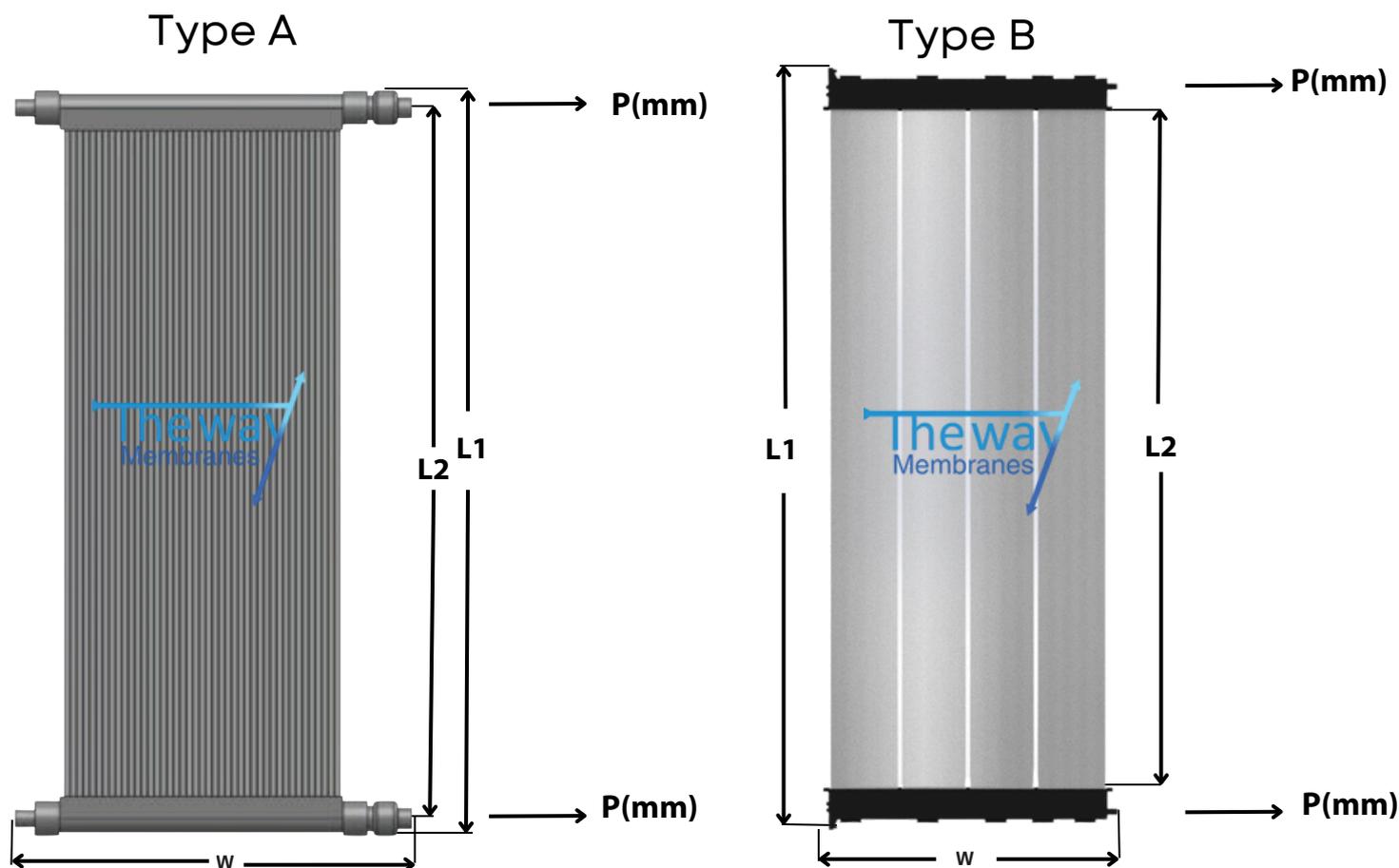
- Industrial Effluent Treatment
- Beverage & Food Processing Industry
- Oil & Gas/Petroleum/Refinery/Petrochemical Industry
- Chemical & Pharmaceutical industries
- Pulp & Paper Industry
- Automobile & Metal Finishing Industry
- Tannery & Leather Processing
- Landfill Leachate & Hazardous Waste Treatment
- Textile/Dye & Textile Fiber/Synthetic Polymer Production
- Municipal & Institutional Sewage
- Mining & Mineral Processing
- Fertilizer & Agrochemical Industry

Features

- Integrated Biological & Membrane Treatment
- High - Quality Effluent & High tensile strength
- Compact & Space - Saving Design
- Flexible & Modular System
- High Sludge Retention & Biomass Concentration
- Efficient Removal of Organics & Contaminants
- Low Chemical & Energy Consumption
- Resistant to Shock Loads & Fluctuating Wastewater
- Sustainable & Eco-Friendly
- Reliable Long - Term Operation
- Increased flux
- Aligned Fiber

Advantages

- Simple Cassettes Type Modular Design
- No External Frame
- Proprietary Air Diffuser System
- Ready availability
- Excellent after sales service and support
- Existing membranes (One-to-one replacement possible)
- Over 300 existing satisfied customers
- Unrivalled pricing



Model No	Membrane Area (m ²)	Type	L1 (mm)	L2 (mm)	W (mm)	Permeate Port Size (mm)
TW-MBR-10	10	Type A	1070	1030	625	24
TW-MBR-13	13		1070	1030	625	24
TW-MBR-20	20		2025	2000	625	24
TW-MBR-34	34	Type B	2198	1940	844	27
TW-MBR-40	40		2198	1940	844	27

*For more information, please refer to our standard datasheet
P - Permeate



Membrane MOC

Potting Material	Epoxy Resin
Module Preservation	Wet
MOC of CAP	ABS

Module information

Membrane Type	Hollow Fiber
Membrane Polymer	Reinforced PVDF
Pore Size	~ 0.04 μm
Tensile Strength (N)	>600 N

Operation philosophy

Filtration time, min (Typical)	7 - 12
Relaxation, sec (Typical)	45 - 120
Backwash time, sec (Typical)	30 - 60
Chemical cleaning interval, week (Typical)	2
Chemical cleaning time, Hrs (Typical)	<ul style="list-style-type: none"> • Maintenance Cleaning (1-1.5) • Recovery Cleaning (10-12)

Backwash & Airscouring

Backwash (Typical)	1.25 times of Feed flow
Air scouring (Typical)	0.3 - 0.5 $\text{m}^3/\text{hr}/\text{m}^2$ membrane area

*For more information refer our specific datasheet.
All above parameters are subject to change as per site conditions



Operating Specification

- > Backwash water should be free of particulates and should be permeate quality or better.
- > Backwash pumps should be preferably be made of non -corroding materials e.g., plastic or stainless steel. If compressed air is used to pressurize the backwash water, do not allow a two-phase air/water mixture to enter the element.
- > To avoid mechanical damage, do not subject the membrane module or element to sudden temperature changes, particularly decreasing. Do not exceed 45°C process temperature. Bring the module or element back to ambient operating temperature slowly (Typical value 1°C/min). Failure to adhere to this guideline can result in irreparable damage.

Important Guidelines

Proper start-up of an MBR system is Important to prepare the membranes for operating service and to prevent membrane damage. Following the proper start-up sequence also helps ensure that system operating parameters conform to design specifications so that system water quality and productivity goals can be achieved. Before initiating system start-up procedures, membrane pretreatment, of the membrane modules, instrument calibration and other system checks should be completed.

Operation instruction

Avoid any abnormal pressure difference during start-up, shutdown, cleaning or other sequences to prevent possible membrane damage. Remove residual air from the MBR system prior to start-up. Manually start the equipment. Depending on the purpose, filtrate obtained from initial operations should be discarded.

General Notes

- If operating limits and guidelines given in this bulletin are not strictly followed, the limited warranty will be null and void.
- To control biological growth during extended system shutdowns, it is recommended that storage solution be injected into the membrane modules.

Product Stewardship

Theway Membranes has a fundamental concern for all who manufacture, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee, public health and our environment. The success of our product stewardship program rests with each and every individual involved with us – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Theway Membranes strongly encourages its customers to review both their manufacturing processes and their applications of Theway Membranes from the standpoint of human health and environmental quality to ensure that Theway Membranes are not used in ways for which they are not intended or tested. Theway Membranes personnel are available to answer your questions and to provide reasonable technical support. Theway Membranes literature, including safety data sheets, should be consulted prior to use of Theway Membranes



Located in Chennai, one of the largest cities in India. Being a Port City, Chennai offers seamless international shipping

Facilities



R&D Facility



Fiber Manufacturing



Module manufacturing



Quality testing



Dispatch

Glimpses of Manufacturing Process



Fiber Extrude



Potting



Testing



Secure Packing



Dispatch

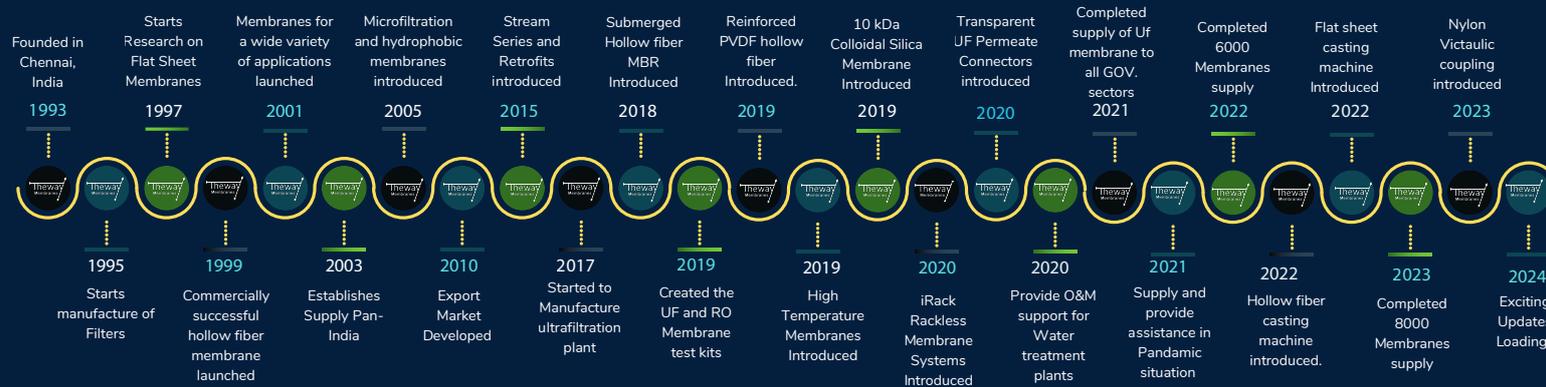
Packaged Fiber & MBR Systems



Glimpses of RO Manufacturing Process



Timeline



THEWAY'S UF MANUFACTURING PROCESS

1
Step 1 - Raw Material



2
Step 2 - Casting Method



3
Step 3 - Fiber Potting



4
Step 4 - Testing & Finished UF



5
Step 5 - Custom Safe Packing



THEWAY'S MBR MANUFACTURING PROCESS

1

Step 1 - Raw Material



Membrane Polymer



Potting Materials



Hollow Fiber Reinforcement Support

2

Step 2 - Extrusion



3

Step 3 - Drying of Fibers



4

Step 4 - Fiber Insertion for Potting & Potting of MBR



5

Step 5 - Finished MBR



THEWAY'S QUALITY CONTROLS

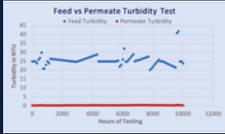


Molecular Weight Cut Off Measurement studying removal of known size protein molecules from feed



Pore Size Distribution Measurement using Capillary Flow Porometry based on ASTM F316

Long term Turbidity Reduction Measurement and Ageing Test



Membrane Quality Controls

Tensile Strength Measurement of Fibers



Manufacturing for other brands



2 American companies



3 European companies



1 Australian company



'Make in India' award, 2016



Approved raw materials



EC Regulation 10/2011



CFR Title 21

Compliance to above

Users of SURGE MBRs

Automotive Users



Government of India Users



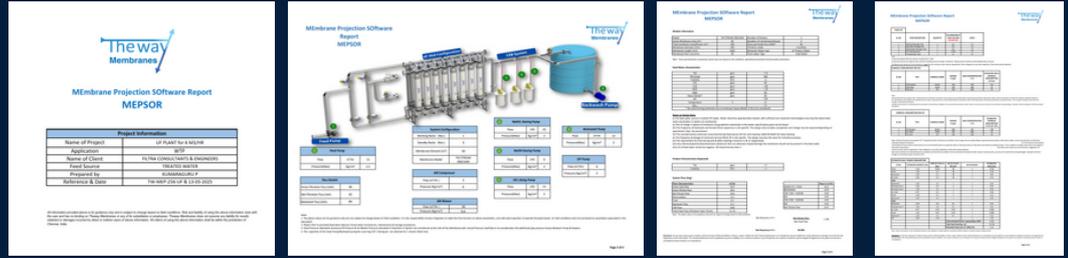
Health care & Food and Beverage Users



Popular Users

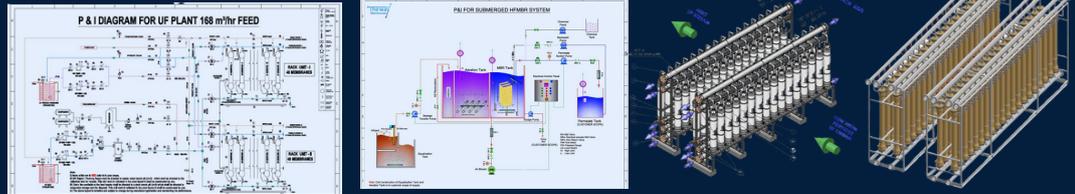


Projection & Equipment Selection



P & I and Skid Drawing Validation

P&I Design and Vetting Support



Plant Startup



Plant Control Logic Development



PLC, SCADA, HMI, Mimic Panel Development support

App development, Alarm logging and Custom Data Acquisition support

Site Troubleshooting



Replacement



Dow / Dupont

Koch

Hydranautics

Pentair / Norit / IMT

INGE / Dupont

Hyflux

Suez / Veolia

UF MEMBRANES & SYSTEMS



RO MEMBRANES & SYSTEMS



MBR MEMBRANES & SYSTEMS



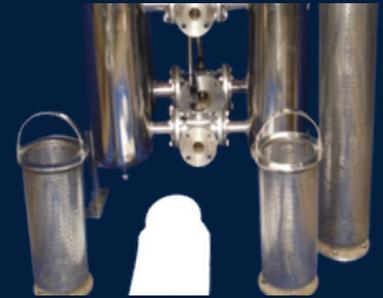
Pre Treatment



Strainers



Bag Filters Housing



Bag Filters



Cartridge Filters Housing



Cartridge Filters



Grooved End Coupling



Auto SDI kit



UV System



Containerized Plant

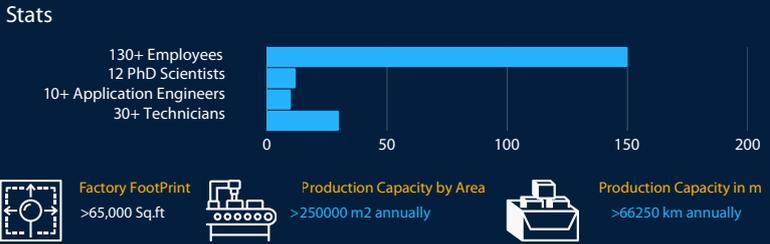




MEMBRANES MADE IN INDIA FOR THE WORLD



Technologies



Product Knowledge Chart

Hollow Fiber Membranes

Hydrophilic Membranes

- MicroFiltration **MF**
- UltraFiltration **UF**
- NanoFiltration **NF**
- Forward Osmosis **FO**

Hydrophobic Membranes

- Membrane Distillation **MD**
- CO2 Sequestration **CO2**

COUNTRIES OF INSTALLATION



Why choose Indian Theway membranes?



Manufactured in

Improved

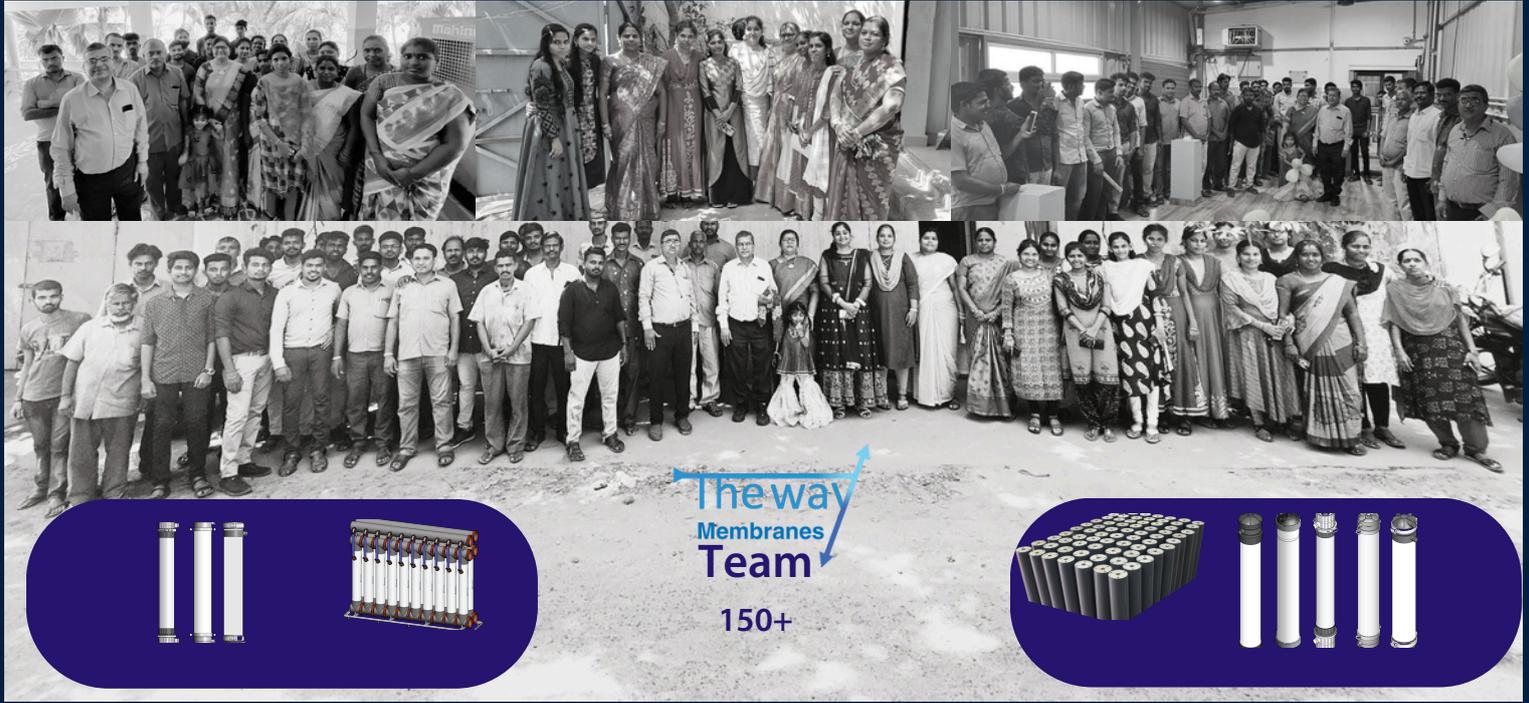
- Manufacturer support
- Trusted Sales Channel
- Availability

₹ Savings on

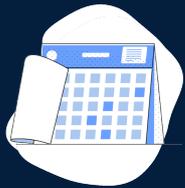
- Currency conversion
- Wage Disparity
- Freight
- Customs, Duties and Taxes
- International pricing strategy.
- Sales Network Hierarchy

OUR WATER TREATMENT PRODUCTS

Ultrafiltration	STREAM Out - In UF Membranes 8 to 145 m ²	STREAM In-Out UF Membranes 5 to 110 m ²	STREAM Septabore Membranes 10 to 120 m ²			
UF Retrofits	DUPONT Integra & SFP/SFD Equivalent	HYFLUX Kristal Equivalent	PENTAIR Aquaflex Equivalent	HYDRANAUTICS Hydracap Equivalent	TORAY HFU & HFUG Equivalent	KOCH TARGA Equivalent
RO	TAPWATER RO 8040 & 4040 Equivalent	BRACKISH WATER - RO 8040 & 4040 Equivalent	SEA WATER RO 8040 & 4040 Equivalent	SEA WATER High Salt Rejection RO 8040 & 4040 Equivalent	SEA WATER High Flow / Productivity RO 8040 & 4040 Equivalent	SEA WATER Low Energy RO 8040 & 4040 Equivalent
MBR	HOLLOW FIBER MBR 10 m ²	HOLLOW FIBER MBR 13 m ²	HOLLOW FIBER MBR 34.4 m ²	HOLLOW FIBER MBR 40 m ²	ZEEWEED 500D Module	MITSUBISHI Module
Grooved Couplings	<p>Made from Nylon (Non-Metallic)</p>					
Filter Cartridges	PP WOUND Cartridge	PP SPUN Cartridge				



CORE VALUES



Constant innovation to lead the market



Honesty and Transparency



Constant customer empowerment and contact



Make in India



Cost Saving Products Value for Money

CERTIFICATIONS AND COMPLIANCE

ISO 9001



ISO 14001



ISO 45001



CE



UKAS

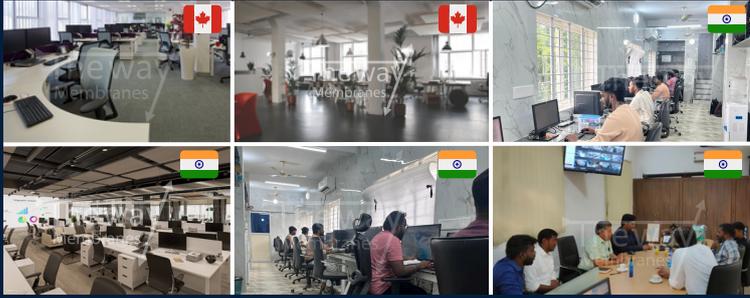


AS 9100



CUSTOMER VALIDATION





Office Photographs



Lab Photographs



Factory Photographs



Transportation



Transportation Services



Payment Methods

Worldwide Usage
of The way
Membranes



Direct Replacement Without Altering the Existing System

Brand	Model	THEWAY Retrofit
DOW / DUPONT	IntegraFlo DW/IW 74 1100	Sierra TWD/TWI 74 1100
	IntegraFlo DW/IW 102 1101	Sierra TWD/TWI 102 1102
	IntegraPac IP 51/77	Sierra IP 51/77
	IntegraPac IPD 51/77	Sierra IPD 51/77
	SFD 2660/2860/2880	Sierra TID 2660/2860/2880
	SFP 2660/2860/2880	Sierra TIP 2660/2860/2880
	Omexell SFP-2660/2680/2860	Sierra Max TIP 2660/2680/2860
	IntegraFlux SFD-2860/2880 XP	Sierra TID XP 60/80
	IntegraFlux SFP-2860/2880 XP	Sierra TIP XP 60/80
	IntegraTec MB 40/55 HP	Sierra TIS 40/55
	IntegraTec MB Pro 64	Sierra TIS Max 64
	IntegraTec MB 25/38/40 OP	Sierra TIS Pro 25/38/40
	IntegraTec MB 40/50 TR	Sierra TIS Plus 40/50
	IntegraTec MB 55/95	Sierra TIS 55/95
	IntegraTec MB 60/80 OP	Sierra TIS Pro 60/80
	IntegraTec MB 60/80 TR	Sierra TIS Plus 60/80
	IntegraTec XP 51/77	Sierra TIS XP 51/77
	IntegraTec XP 51/77 FPG	Sierra TIS XP Pro 51/77
IntegraTec XP 51/77 IG	Sierra TIS XP Max 51/77	
IntegraTec XP 51/77 IG FPG	Sierra TIS XP Plus 51/77	
IntegraFlux SFP-2880XP	Sierra TIP XP 80	

Brand	Model	THEWAY Retrofit
SUEZ / VEOLIA	ZW700B 125	VATTEN TW700 125
	ZW700B 225	VATTEN TW700 225
	ZW700B 250	VATTEN TW700 250
	ZW700B 450	VATTEN TW700 450
	ZW700B 4100	VATTEN TW700 4100
	ZW700B 4150	VATTEN TW700 4150
	ZW700B 8060A	VATTEN TW700 8060T
	ZW700B 8060Bev Horz	VATTEN TW700 8060 HM
	ZW700B Horz	VATTEN TW700 8060 H
	ZW700B 9060	VATTEN TW700 9060
	ZW700B 9060 Standard	VATTEN TW700 9060 GEN
	ZW700B 10060 SB 1.5	VATTEN TW700 10060 V
	ZW700B 10060 SB 2.2	VATTEN TW700 10060 V2
	ZW700B 10060 With Caps	VATTEN TW700 10060 C
	ZW700B 10060 Without Caps	VATTEN TW700 10060 W
	ZW700B	VATTEN TW700
	ZW700B RMS	VATTEN TW700 FOX
	ZW1500 Junior	VATTEN 1500D Mini
ZW1500 RMS	VATTEN 1500D FOX	
ZW1500X	VATTEN 1500D	

Brand	Model	THEWAY Retrofit
PENTAIR	Aquaflex 20	AGUA 20
	Aquaflex 40	AGUA 40
	Aquaflex 55	AGUA 55
	Aquaflex 64	AGUA 64
	XIGA 40	TWIGA 40
	XIGA 55	TWIGA 55
	XIGA 64	TWIGA 64
	Sea guard	Poseidon
	Sea guard	Poseidon
	Sea guard	Poseidon

Brand	Model	THEWAY Retrofit - TWT
IMT	125 UF-MB-TAP	TN 125
	225 UF-MB-TAP	TN 225
	250 UF-MB-TAP	TN 250
	350 UF-MB-TAP	TN 350
	475 UF-MB-TAP	TN 475
	4100 UF-MB-TAP	TN 4100
	4150 UF-MB-TAP	TN 4150
	6100 UF-MB-TAP	TN 6100
	8060 UF-MB-RX	TN 8060
	10060 UF-SB-0.2	TN 10060 SB
	10060 UF-MB-G	TN 10060 V
	10060 UF-MB	TN 10060
	10060 UF-SB-2.2	TN 10060 SBM

Brand	Model	THEWAY Retrofit PURAN
HYDRANAUTICS	HYDRAcap-40	TP 40
	HYDRAcap-40-LD	TP 40 Pro
	HYDRAcap-MAX-40	TP MAX 40
	HYDRcap-60	TP 60
	HYDRcap-60-LD	TP 60 Pro
	HYDRcap-MAX-60	TP MAX 60
	HYDRcap-80	TP 80
	HYDRcap-MAX-80	TP MAX 80

Brand	Model	THEWAY Retrofit - VOLGA
KOVALUS / KOCH	TARGA 8072-742-20PM10	V8072
	TARGA 8072-367-43-PM10	V8072 A
	TARGA 8048-238-43-PM100	V8048
	TARGA 8072-367-43-PM100	V8072 B
	TARGA II 8048-35	V8048 II
	TARGA II 8072-35	V8072 II
	TARGA II 8H072-35	V8H072 II
	TARGA II 10048-35	V10048 II
TARGA II 10072-35	V10072 II	

Brand	Model	THEWAY Retrofit - MIZU
TORAY	HFUG-2020AN	TW90
	HFU-2020AN	TW 72
	HFU-1020AN	TW29
	HFUG-2020HN	TW90A
	HFUG-B2315AN	TW75
	HFU-1010N	TW7

Brand	Model	THEWAY Retrofit - WATEMAX
3M Liqui-Flux	MF PP B21 LF	WM21
	MF PP B27 LF	WM27
	MF PP B32 LF	WM32
	MF PP B41 LF	WM41
	MF PP B42 LF	WM42
	MF PP B43 LF	WM43
	MF PP B46 LF	WM46
	MF PP B47 LF	WM47
	MF PP B171 LF	WM171
	MF PP B221 LF	WM221

Brand	Model	THEWAY Retrofit - NEPTUNE
MEMCOR/ DUPONT	L10V	NEP 10
	L10V	NEP 10 Z
	L20V	NEP 20

THEWAY MEMBRANES



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FLATSHEET & RO RETROFIT TABLE



Brand	Model	THEWAY Retrofit
Veolia/Zeeweed	Zeeweed 500D	TW-MBR-40
	Zeeweed 500D	TW-MBR-34
	Zeeweed 500D	TW-MBR-30

Brand	Model	THEWAY Retrofit
Kubota	DFFSMBRPVDF080	TW-0.8-FS
	DFFSMBRPVDF150	TW-1.5-FS

Brand	Model	THEWAY Retrofit
Mitsubishi	5600 Series	TW-MBR56-40

Brand	Model	THEWAY Retrofit
HYDRAU NITICS	ESPA2	OSMOFLUX LE TW 400
	CPA2	OSMOFLUX HSR TW 365
	CPA3	OSMOFLUX HSR TW 400
	SWC3-LD	OSMOFLUX MR TW 400-LF
	SWC3-LD	OSMOFLUX MR TW 400-LF
	SWC3-LD	OSMOFLUX MR TW 400-LF

Brand	Model	THEWAY Retrofit
LG	LG SW 440 R	OSMOFLUX MR TW 440

Brand	Model	THEWAY Retrofit
DOW / DUPONT	BW30-365	OSMOFLUX BR TW 365
	BW30-400	OSMOFLUX BR TW 400
	SW30-8040	OSMOFLUX MR TW 300
	CR200	OSMOFLUX BFR TW 400

Brand	Model	THEWAY Retrofit
TORAY	TM820V-400	OSMOFLUX MR TW 400
	TM820V-440	OSMOFLUX MR TW 440

THEWAY MEMBRANES

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