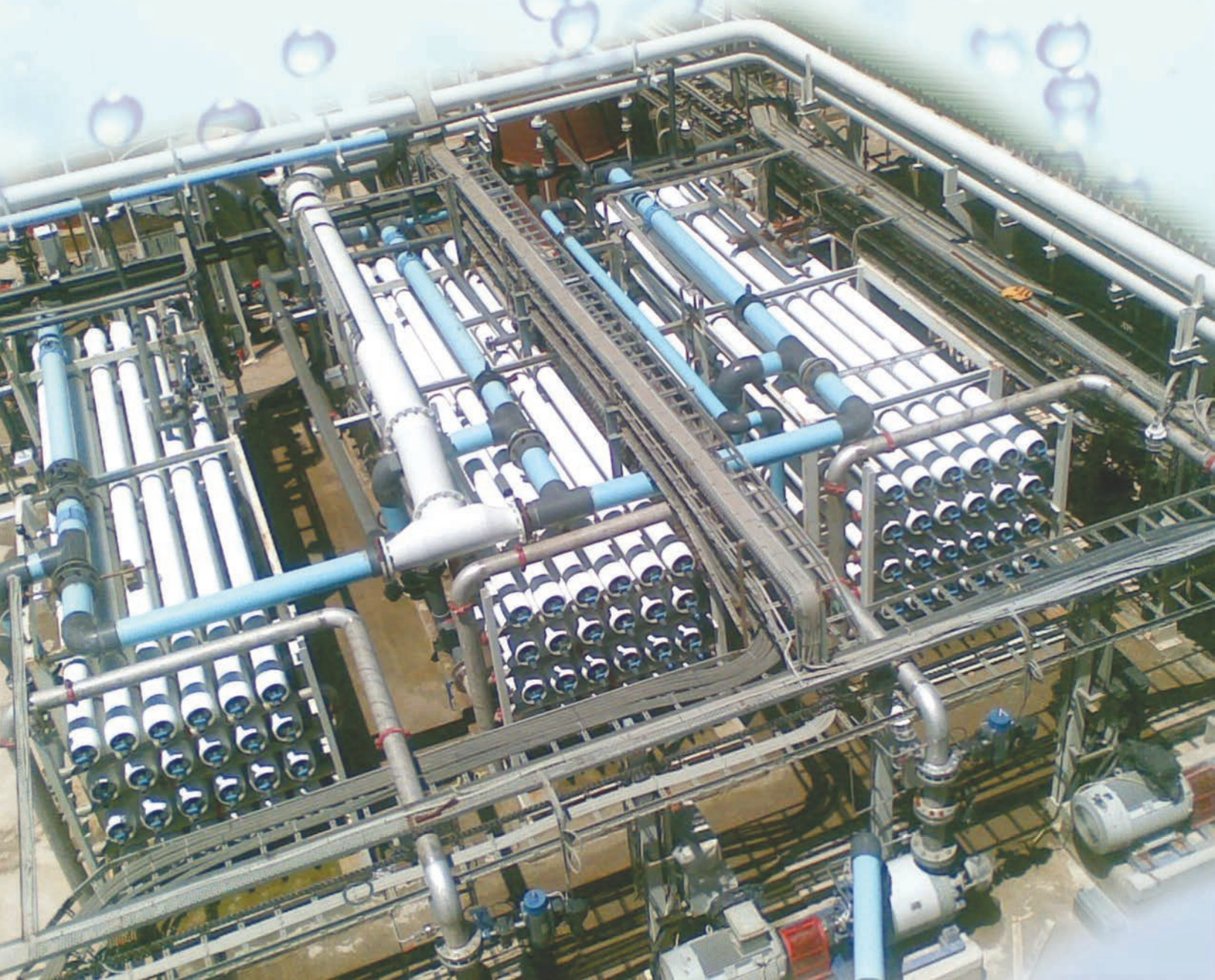
Sedifilt®

Filter Cartridges for Reverse Osmosis Plants

Patented media string wound filter cartridges for effective and efficient removal of impurities such as silt, sand, rust and other suspended particles from RO feed water

Minimizes fouling and membrane degredation

Results in improved process economics, reduced operation and maintenance issues



Fouling can seriously reduce performance by lowering productivity and salt rejection, and increasing pressure differential across the system.

In the reverse osmosis (RO) process, water passes through a semi-permeable membrane, separating dissolved contaminates and giving pure water. This membrane is highly sensitive to fouling or damage from incorrectly treated feed water. To increase the efficiency and life of RO systems, effective pretreatment of the feed water is required.

Pretreatment

Dependent on the characteristics of the raw water, a myriad of pretreatment steps are required to prepare the feed water for the RO process. These include straining, chlorination, coagulation/flocculation, clarifiers, pH adjustment, softening, ion exchange, scale inhibitors, multi-media filtration, oxidation, de-chlorination, biocidal treatment, activated carbon filtration, UV sterilization, and cartridge filtration.

Proper pretreatment will maximize efficiency and membrane life by minimizing fouling, scaling and membrane degradation. Pretreatment optimizes product flow, product quality (salt rejection) and product recovery. This results in improved process economics, and reduced operation and maintenance issues.

Fouling

Fouling is the most significant factor affecting the performance of RO systems. Fouling results from the accumulation of foreign materials from feed water on the membrane surface. Fouling can be from (1) **scaling** by precipitation and deposition of salts, (2) **colloidal or silt fouling** from entrapment of particulate or colloidal matter such as clay, silica and iron corrosion products (iron flocs), (3) **biofouling** from the growth of a biofilm from microorganisms such as bacteria, algae, fungi, viruses, and higher organisms, and (4) **organic fouling** from the adsorption of organic compounds such as humic substance and oil on the membrane surface.

Guidelines for feed water quality

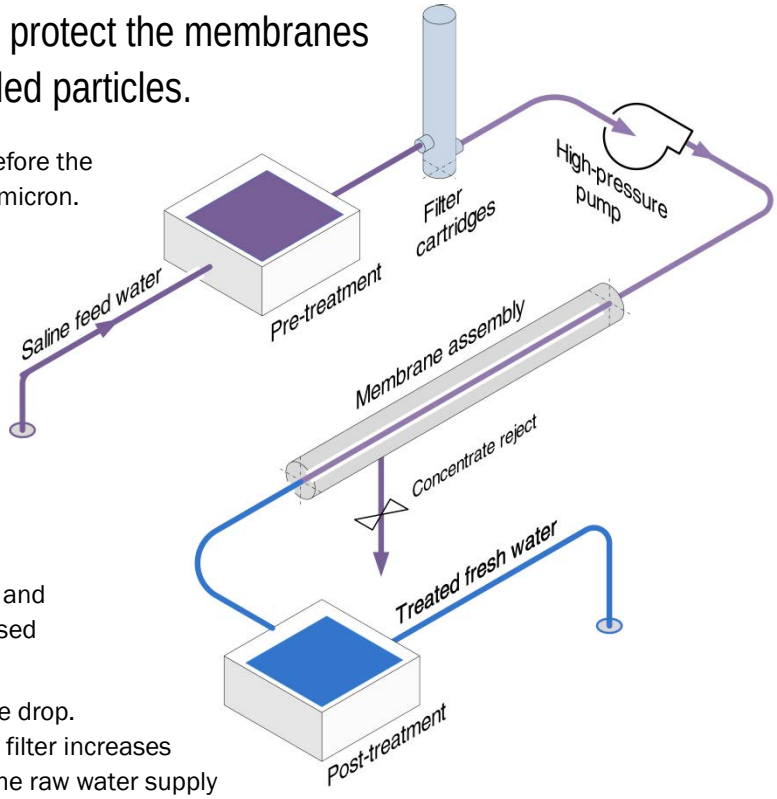
The common indicators of suspended particles used in the RO industry are silt density index and turbidity.

Component	Max. level	Remarks
SDI Silt Density Index	4	Indicates the quantity of particulate matter in water and correlates with the fouling tendency of RO systems.
NTU Turbidity	1	Turbidity is an expression of the optical property of water that causes light to be scattered and absorbed rather than transmitted in straight lines through the sample. Turbidity is caused by suspended and colloidal particulate matter.

Filter Cartridges for Reverse Osmosis Plants

Cartridge filtration is the final safety step to protect the membranes and high pressure pump from any suspended particles.

RO system manufacturers recommend final pre-filtration before the pressure pump and membrane with filter cartridges of ≤ 5 micron. Properly selected cartridge filtration as the final safety step has a number of benefits:



- Protects membranes and high pressure pump
- Removes any remaining suspended particles
- Reduces membrane cleaning requirements
- Reduces risk of fouling
- Removes residual flocks and particles after multimedia
- Provides useful information regarding fouling risks and cleaning requirements (by regular inspections of used cartridges)
- Indicates extent of fouling with increase in pressure drop. For example, if the differential pressure across the filter increases rapidly, it is an indication of possible problems in the raw water supply or in the pretreatment process
- Provides short-term protection for the membranes while corrective action is taking place

Customers can count on our continued commitment to research and development.

We provide active support to customers towards the development and improvement of filter cartridges to meet process requirements. Our research and development efforts are to continuously improve our products.

We conduct testing at our own in-house testing laboratory. This is equipped with a filter cartridge test rig, laser particle counter, digital microscope, turbidity measuring instrument, SDI measurement instruments, and microbiology and chemistry equipment, etc.

Our test laboratory enables us to provide customers with tailor made cartridges.

Superior Filtration Technology

Sedifilt Filters for Reverse Osmosis plants have proven exceptional performance. A wide chemical compatibility and customization possibilities result in improved economics tailored to the individual application. Sedifilt Filters improve water quality, process efficiency and also provide process protection by removing suspended solids such as dirt, iron particulates and deformable gel type contaminants.

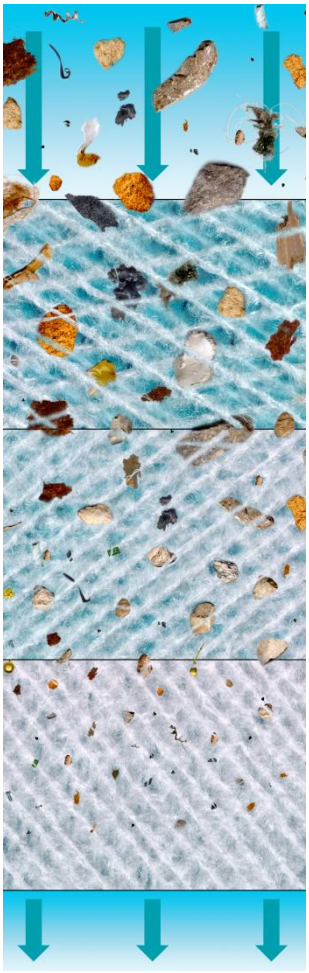


Illustration: Sedifilt graded density structure

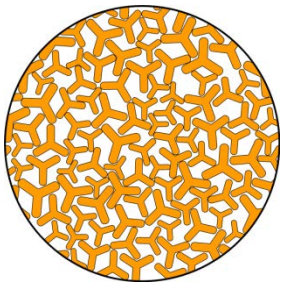
True graded density structure of Sedifilt cartridges ensure higher dirt holding capacity, longer service life, and fewer change outs.

Features

- 100% polypropylene – inert material, excellent micro-organism resistance.
- No chemicals to leach-out with new melt spinning and yarn forming process.
- No media migration because the yarn consists of continuous filaments.
- True graded density – new winding technology gives denser winding in inner layers and coarser winding in outer layers.
- High dirt holding capacity and longer life as particles are trapped throughout the entire cross section of the filter.
- Better performance – multi-lobal cross section filaments with random 3-dimensional media structure captures more particles compared to conventional filters.
- High bulk media having improved void to solid ratio gives higher flow rates with low pressure drop.
- High structural stability, i.e., no shifting of media, excellent knife-edge sealing.
- Structural firmness results in greater resistance to particle unloading and hence more consistent performance.
- Incinerates to trace ash with no hazardous volatiles for environmentally friendly disposal.

Sedifilt Media

Sedifilt media has high bulk, stable, three-dimensional random structure comprising continuous filaments.



The multi-lobal cross section of individual filaments has more micro-voids giving higher dirt holding capacity and lower resistance to flow.

SRO Filter Cartridges

Pure polypropylene Sedifilt RO series filter cartridges are free from any extractables and contain no lubricants, wetting agents, emulsifiers, antioxidants or anti-static agents, etc. The standard pure polypropylene cartridge is engineered for superior filtration performance. Available in up to 80 inch (2032 mm) length and up to 6 inch (152 mm) diameter.

End Adapters

Polypropylene end adapters are thermally-welded to the pure polypropylene Sedifilt filter. The positive weld assures bypass-proof performance and structural integrity without adhesives or additives, maintaining cartridge purity. All adapters are molded of the same polypropylene as the cartridge for chemical compatibility and ease of disposal.

EC

EF

ER

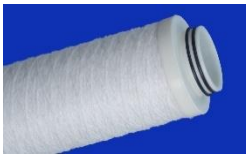
EA

ECH105

E222

E231

E226

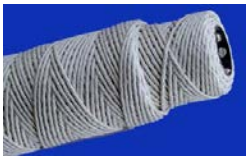


E229

EX

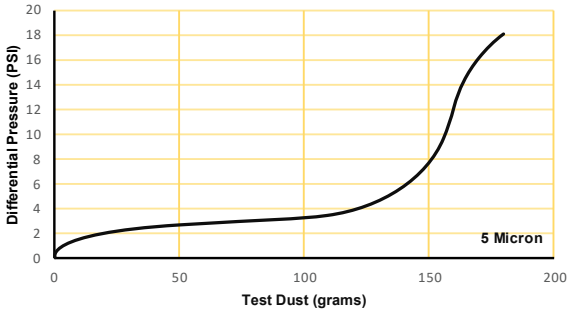
EXT

EXT-S

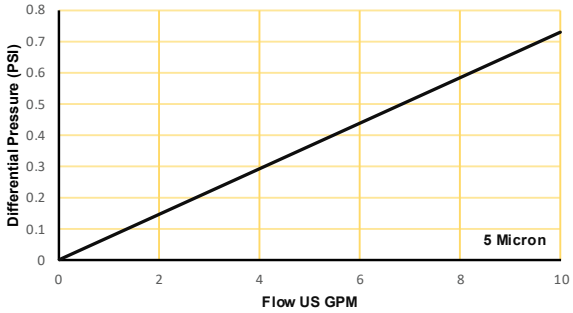


ES

SRO Dirt Holding Capacity



SRO Flow VS DP

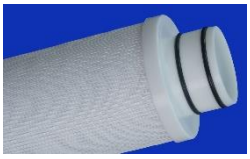


Ratings are based on 85% and above efficiency laboratory tests for 10 inch cartridges as per ASTM F795 standard using ISO A2 Fine test dust. Flow rate vs. pressure drop data is based on clean water at an ambient temperature of 25 °C. Results in actual use will be influenced by the type of fluid and contaminant as well as flow rate and temperature.

High flow filter cartridges

Designed for High Flow housings and applications like large RO plants, produced water filtration, amine and glycol filtration. The Sedifilt High Flow filter cartridge has a 6-inch diameter, giving four times higher dirt holding capacity together with lower differential pressure and higher flow rates.

Available in standard Polypropylene and Polyester media with Polypropylene and steel core, cotton or polypropylene socks covering.



E341

E226

E434

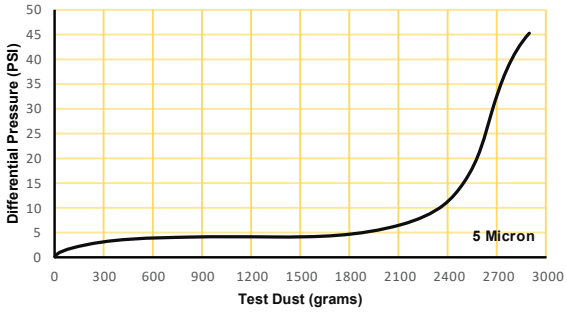
E245

ECH1

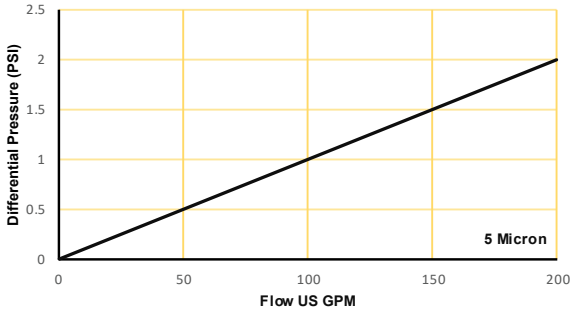
ECH2

ECH3

High Flow Dirt Holding Capacity



High Flow VS DP



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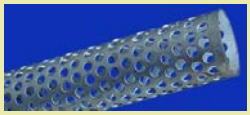
Filter Cores

Filter cores are available in polypropylene, stainless steel (304), carbon steel, and Tin, in regular, extended and tapered configurations.

PP molded core available in 28, 35 and 79 mm inner diameters.

Stainless Steel core

Tin Core



Carbon Steel core

Ordering information

Sedifilt filter cartridges can be made to order in custom sizes (custom lengths, inner diameter and outer diameter) in various filter media and core material, and tailored density gradings.

Length	Outer diameter	Number per box (standard packing)	Gross weight per box (kg)	Quantity in 20 ft. container load (without pallets)	Quantity in 20 ft. container load (on pallets)
10”	2 ½“	30	6	25,200	17,280
20”	2 ½“	30	11	12,600	8,640
30”	2 ½“	30	16	8,400	5,760
40”	2 ½“	20	14.5	6,600	5,120
50”	2 ½“	20	18	5,040	3,840
70”	2 ½“	20	23	3,780	2,880
80”	2 ½“	20	25	3,300	2,400

NSF/ANSI/CAN Standard 61 Certification

Sedifilt filter cartridges are certified by NSF International to NSF/ANSI/CAN Standard 61 for Drinking Water System Components and Health Effects.

ISO 9001

Sedifilt cartridges are manufactured by Syntech Fibres (Pvt) Ltd., an ISO 9001 certified company.

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SRO 40 A 5 A E222/C

Length			Variation in Length	Outer Diameter (mm)	End Adapter	
Nominal	Actual					
(inch)	(inch)	(mm)	**A** = Specified length	**A** = 63.5	**E222/C** = Two end caps, one with double 222 O-rings (**E222**), other end flat closed (**EC**)	**ECH** = Closed with Handle
10	9 7/8	250.8	None = Nominal length	**E** = 60	**E222** = Double 222 O-rings	**ES** = Stepped end
20	19 ¾	501.7		**D** = 100	**E226** = Double 226 O-rings	**ER** = Reusable stainless steel spring
30	29 5/8	752.5		**J** = 114.5	**E229** = Double 229 O-rings	**EA** = PP molded spring
40	39 1/2	1003.3			**E231** = Double 231 O-rings	**EF** = PP molded fin
50	49 1/4	1251.0			**E245** = Single 245 O-ring	**X** = Extended core
70	70	1778.0			**E341** = Double 341 O-rings	**XT** = Tapered extended core (all core media)
80	80	2032.0			**E434** = Single 434 O-ring	None = No end adapters (double open end – DOE)
					EC = Flat Closed	
Custom lengths are available up to full 72 inches. Length does not include end adapter length, in any.			Actual length of standard nominal lengths is specified on the left. For custom length in inches followed by an A for variation in length from standard.	Customized outer diameters are available up to 152 mm.		

Please specify all details while ordering. For a standard Sedifilt RO 5 micron 40 inch long (nominal) filter cartridge, the product code will be SRO40-5A. An example of a RO cartridge with all options specified is SRO40A-5AE222/C.

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Sedifilt® *Superior filtration technology*

The information given in this publication is based on the present state of our knowledge. Any conclusions and recommendations are made without liability on our part. Buyers and users should make their own assessment of our products under their own conditions and for their own requirements.

NSF Certified by NSF International to NSF/ANSI/CAN Standard 61

MEMBER Water Quality ASSOCIATION

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