

# FRP MEMBRANE HOUSING

**Snøwate**

Hengshui Snowate Environmental  
Technology Co., Ltd.

EDITION FOR  
SNOWATE CATALOG



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# HENGSHUI SNOWATE ENVIRONMENTAL TECHNOLOGY CO., LTD.

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## A TRUSTWORTHY SOURCING EXPERT ON WATER TREATMENT FACILITIES

As a senior sourcing expert on water treatment facilities and accessories, Hengshui Snowate Environmental Technology Co., Ltd. has extensive water treatment expertise, profound water treatment industry experience and a deep understanding of the water treatment industry purchasing demands. As a consequence, we are capable of providing one-stop purchase and technical support on water treatment facilities and accessories according to our customers' applications, thereby helping our customers to shorten the procurement cycle, reduce procurement costs and maximize economic benefits.

We integrate upstream supply chain products of the water treatment industry. In addition, we work with renowned suppliers and manufacturers. As a result, we can continuously supply high-quality water treatment components and systems for customers across the world to meet the needs of a Wide Range of Applications, Thereby Optimizing Water Resources and Promoting The Sustainable Development of The Global Environment.

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**Snowate**





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# FRP Membrane Housing

FRP membrane housings are mainly made of epoxy resin and fiber materials after special processing by automatic winding molding through computer-control. It often works with RO membranes and is used in RO systems to remove pigments, hardness, high valence ions and other impurities, so that water after treatment can meet pure water standards.

Compared with traditional steel or plastic products, FRP membrane housings have excellent insulation properties, good corrosion resistance performance, optimized structural design, and have passed many official certificates such as ISO 9001, ISO 14001, OHSAS 18001, ASME, and CE.

FRP membrane housings play a protective role for RO membranes in the water treatment process and are often used in industries such as electronics, food & beverage, metallurgy, pharmaceuticals, seawater desalination, and drinking water treatment.

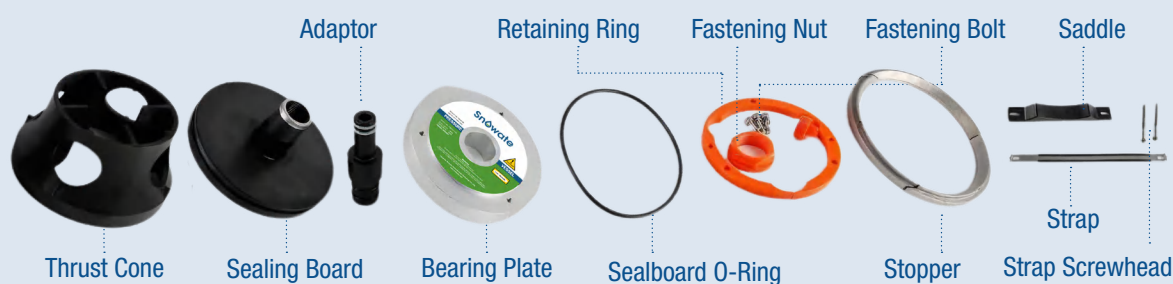


# Snowate FRP Membrane Housing

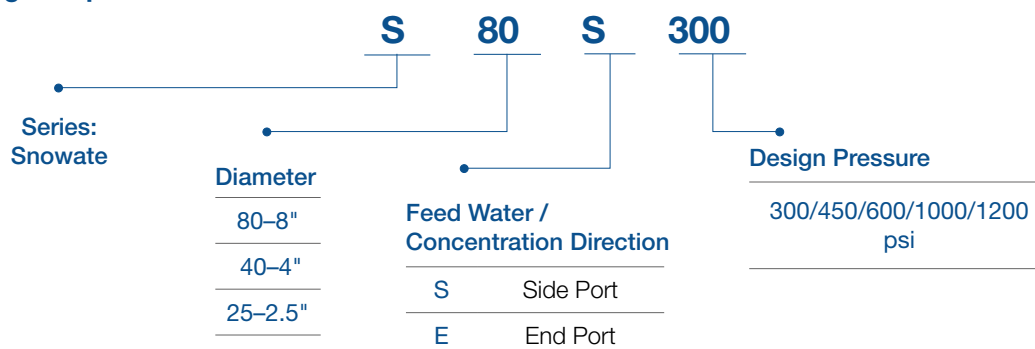
Snowate series FRP membrane housings are widely used in RO water treatment systems. It has a working pressure ranging from 300 psi to 1200 psi. All our membrane housings have gone through burst pressure test at 6 times of design pressure and 100,000 times of cycle tests and are often used in industries such as electronics, food & beverage, metallurgy, pharmaceuticals, seawater desalination, and drinking water treatment.

Model	Pressure	End Cap	Fixing	Retaining Ring
8" End Port /Side Port	300-600 psi	Space aluminum, small thickness	Stopper	No
	1000-1200 psi	Space aluminium, large thickness	Stopper	Yes
4" End Port /Side Port	300-450 psi	ABS	Crescent film	No
	600-1200 psi	Space aluminium	Stopper	No
2.5" End Port	300 psi	PP+30%PG	Crescent film	No
	1000 psi	SS2205	Crescent film	No

Let's take 8" side port FRP membrane housing as an example.



## Coding Interpretation: S80S300



## 8" Side Port FRP Membrane Housing

## 8" Side Port/300-600 psi



Specification: S80S300/450/600

Design Pressure: 300/450/600 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1–7

Operating pH Range: pH 3–10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1.5"/2"/2.5"/3"

Water Purification Port: 1"

## 8" Side Port/1000-1200 psi



Specification: S80S1000/1200

Design Pressure: 1000/1200 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1–7

Operating pH Range: pH 3–10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1.5"/2"/2.5"/3"

Water Purification Port: 1"

## 8" End Port FRP Membrane Housing

**8" End Port/300-600 psi**



Specification: S80E300/450/600

Design Pressure: 300/450/600 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1–7

Operating pH Range: pH 3–10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1.5"

Water Purification Port: 1"

**8" End Port/1000-1200 psi**



Specification: S80E1000/1200

Design Pressure: 1000/1200 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1–7

Operating pH Range: pH 3–10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1.5"

Water Purification Port: 1"



## 4" Side Port FRP Membrane Housing

### 4" Side Port/300-450 psi



Specification: S40S300/450

Design Pressure: 300/450 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1-4

Operating pH Range: pH 3-11

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1"

Water Purification Port: 3/4"

### 4" Side Port/600-1200 psi



Specification: S40S600/1000/1200

Design Pressure: 600/1000/1200 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Elements Quantity: 1-4

Operating pH Range: pH 3-10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1"

Water Purification Port: 1/2"



## 4" End Port FRP Membrane Housing

### 4" End Port/300-450 psi



Specification: S40E300/450  
Design Pressure: 300/450 psi  
Fatigue Testing: 100,000 times

Burst Pressure: 6 times  
Elements Quantity: 1-4  
Operating pH Range: pH 3-11

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)  
Feed/Concentration Port: 3/4"  
Water Purification Port: 1/2"

### 4" End Port/600-1200 psi



Specification: S40E600/1000/1200  
Design Pressure: 600/1000/1200 psi  
Fatigue Testing: 100,000 times

Burst Pressure: 6 times  
Elements Quantity: 1-4  
Operating pH Range: pH 3-10

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)  
Feed/Concentration Port: 3/4"  
Water Purification Port: 1/2"

## 2.5" End Port FRP Membrane Housing

### 2.5" End Port/300 psi



Specification: S25E300

Design Pressure: 300 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Element Model: 2514, 2521, 2540

Operating pH Range: pH 3–11

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1/4"

Water Purification Port: 1/4"

### 2.5" End Port/1000 psi



Specification: S25E1000

Design Pressure: 1000 psi

Fatigue Testing: 100,000 times

Burst Pressure: 6 times

Element Model: 2514, 2521, 2540

Operating pH Range: pH 3–11

Design Temperature Range: -10 °C to 66 °C (14 °F to 150 °F)

Feed/Concentration Port: 1/4"

Water Purification Port: 1/4"

## 8" FRP RO membrane cleaning housing

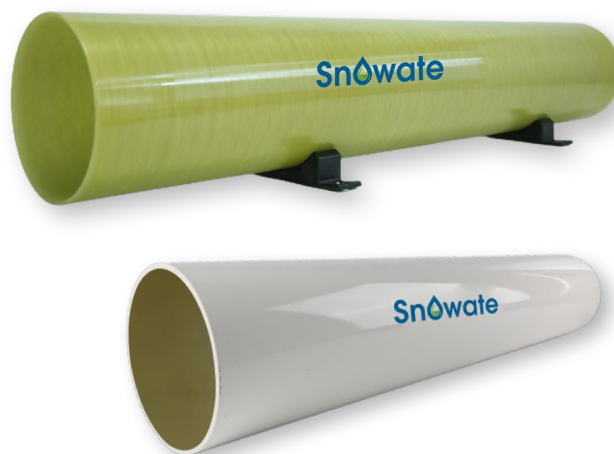
One end of this RO membrane housing adopts quick release locking mechanism design to make the membrane installation and removal easier while meeting the operating pressure requirements of online cleaning.

One housing can only accommodate one membrane element, and is suitable for 8" membrane only. Only one person can easily remove and install the end cap within 1 minute, making its working efficiency 5 times higher than that of traditional designs.



## DTRO FRP Membrane Housing

DTRO FRP membrane housings can withstand more than 100,000 cycles and burst testings at 6 times of design pressure. They have been used in large and medium-sized projects at home and abroad since 2008.



**DTRO FRP membrane housings can withstand pressures of 7.5/9.0/12.0/15.0/20.0 MPa.**

Pressure/MPa	7.5	9	12	15	20
Thickness (mm)	6	7	9	14.5	19.5

Color: White and natural

The default lengths are 1150mm and 1200mm, and other lengths can be customized.



## FRP filter

Horizontal type includes end port & side port connection, and can be with high flow cartridges Pall type and Parker type.

### Snowate 8" 150psi FRP high flow cartridge filter housing (End port in, end port out)

#### Snowate 8" 150psi FRP high flow cartridge filter housing data

Model	Weight (KG)	Dimension (M)	CBM	Output flow rate (T/H)
<b>S80E150-20 housing</b>	18	0.25*0.25*0.9	0.05625	10-15
<b>S80E150-40 housing</b>	21	0.25*0.25*1.45	0.090625	25-30
<b>S80E150-60 housing</b>	25	0.25*0.25*1.9	0.11875	40-45

#### High flow cartridge filter element data (PALL Style)

Model	Weight (KG)	Dimension (M)/4 pcs	CBM/pcs
<b>20 inch element</b>	1.2	0.36*0.38*0.6	0.022
<b>40 inch element</b>	2.4	0.36*0.38*1.2	0.041
<b>60 inch element</b>	3.6	0.4*0.38*1.65	0.063

### High flow cartridge filter element (PALL Style)

#### Materials

- Filter material: polypropylene
- Support material: Polypropylene
- End cap material: reinforced polypropylene

**Filtration accuracy:** 1 micron, 5 micron

**Life time:** depending on the water quality. Usually about 3 months



## Snowate 8" 150psi FRP High Flow Cartridge Filter Housing (Side port in, end port out)

### Snowate 8" 150psi FRP High Flow Cartridge Filter Housing Data

Model	Weight (KG)	Dimension (M)	CBM	Output flow rate (T/H)
<b>S80S150-20 housing</b>	18	0.25*0.25*0.84	0.056	10-15
<b>S80S150-40 housing</b>	23	0.25*0.25*1.347	0.088	25-30
<b>S80S150-60 housing</b>	28	0.25*0.25*1.847	0.119	40-45

### High Flow Cartridge Filter Element Data (PAKER Style)

Model	Weight (KG)	Dimension (M)/4 pcs	CBM/4 pcs
<b>20 inch element</b>	1.2	0.36*0.38*0.6	0.082
<b>40 inch element</b>	2.4	0.36*0.38*1.1	0.150
<b>60 inch element</b>	3.6	0.4*0.38*1.65	0.251

## High Flow Cartridge Filter Element (PAKER Style)

### Materials

- Filter material: polypropylene
- Support material: Polypropylene
- End cap material: reinforced polypropylene

**Filtration accuracy:** 1 micron, 5 micron

**Life time:** depending on the water quality. Usually about 3 months



# Snowate 8" 150psi FRP High Flow Cartridge Filter Housing (Side port in, Side port out)

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### Materials

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**Filtration accuracy:** 1 micron, 5 micron

**Life time:** depending on the water quality. Usually about 3 months





# End Cap Extractor for FRP RO Housing

End cap extractor for FRP RO housing is a great helper in disassembling the FRP RO housing end cap. Because the operating environment of the membrane housing system is humid, this brings difficulties to the disassemble work. Here, we will introduce the disassemble method of the membrane housing end cap and the use steps of the extractor.



8" End Cap Extractor

4" End Cap Extractor



## Precautions

- ! FRP membrane housing thermal expansion and cold shrinkage rate decreases, follow the rated design pressure indicators during use. Use it within the allowable range and do not overpressure run it for a long time.
- ! The design temperature of FRP membrane housing generally falls between -10 °C to 66 °C, and do not run it beyond allowable temperature range.
- ! The back pressure of clean water outlet at the end should not exceed 125 psi.
- ! Do not tap, disassemble or move the membrane housing during the system operation or there is pressure inside the housing.
- ! When cleaning, make sure that the inner surface of the membrane housing is clean and choose a neutral cleaning solution.



# Quality Inspection

## Snowate



### Hydrostatic Pressure Test – Product Stability

**Test Standard:** Each FRP membrane housing is tested for hydrostatic pressure before leaving the factory.

**Test Requirements:** 1.1 times of test pressure & 0.4 MPa/s pressure rise rate, keep 15 minutes.

**Test Result:** No leakage.



### More Than 100,000 Times of Fatigue Test – Product Durability

**Test Standard:** Randomly select one sample from 1000 pieces in the same batch.

**Test Requirements:** 65 °C water temperature. Pressure starts from 0 psi to design pressure, and repeat more than 100,000 times of fatigue test.

**Test Result:** No leakage.



### Burst Pressure: More Than 6 Times – Product Quality

**Test Standard:** FRP membrane housing after 100,000 times of fatigue test.

**Test Requirements:** 65 °C water temperature and apply 6 times of design pressure on the membrane housing at a constant speed within 1 minute.

**Test Result:** No leakage.



# Application



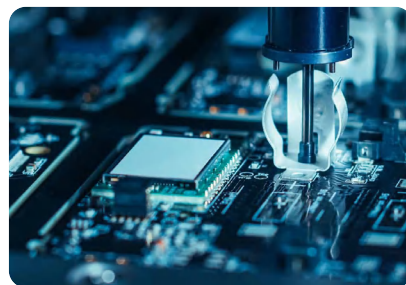
## Food & Beverage

Preparation of formula water, production water, washing water and ultra-pure water.



## Pharmaceutical

Preparation of process water, preparation water, washing water, injection water and sterile water.



## Electronics

Boiler makeup water, cooling water, semiconductor industry ultra-pure water, integrated circuit cleaning water, formula water.



## Textile Printing & Dyeing

Water used in textile and manufacturing plants needs to remove minerals in the water.



## Seawater Desalination

Production and domestic water obtained from seawater desalination in island areas, coastal water shortage areas, ships and seawater oil fields.



## Electroplating

Recovery of precious metals and water from electroplating rinsing water to achieve zero or small discharge.



## Iron & Steel

Production process wastewater discharge, soluble oil bath preparation, boiler deionized water and makeup water preparation.



## Petrochemical

Deep treatment of oilfield injection water and petrochemical wastewater.



## Landfill & leachate Treatment

A combined treatment process is adopted to realize effective treatment of domestic waste landfill leachate, and achieve the resource utilization of leachate (application of DTRO FRP membrane housing).

# Snowate



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