



# RO-Flow<sup>®</sup>

*by*shawmut

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High-Performance  
Permeate Carrier Fabrics



## Solving Global Water Shortages With Textile Technology

As the world's population continues to rise, the scarcity of natural resources is an issue of global significance. One of the greatest challenges is the availability of clean water and drinking water filtration. Shawmut is proud to be part of the worldwide push for innovative textile water filtration technologies as a producer of tricot knit technical fabrics.

The fibers used to produce RO-Flow® Permeate Carrier Fabrics allow it to be used for drinking water, desalination, dairy products, wine and even natural gas. Applications include microfiltration, nanofiltration, ultrafiltration and reverse osmosis. Applications for reverse osmosis water purification range from municipal treatment facilities to naval vessels. While the purification of brackish water and saltwater is the primary application for reverse osmosis,

the process can also be used in a number of other industries, including food, beverage and pharmaceutical processing.

Shawmut manufactures RO-Flow Permeate Carrier Fabrics using antimony-free, bicomponent yarn in our state-of-the-art Park Avenue Technical Center in Burlington, North Carolina. Shawmut's Park Avenue Technical Center is the company's first ISO 14001 certified facility. It is 100% landfill-free, with less than 1% of the waste from the Technical Center going to a landfill, and instead repurposed through recycling and other external sustainability operations. Additionally, Shawmut has made strides in its water conservation efforts at the Park Avenue Technical Center, cutting water usage by nearly 75% over the last several years.

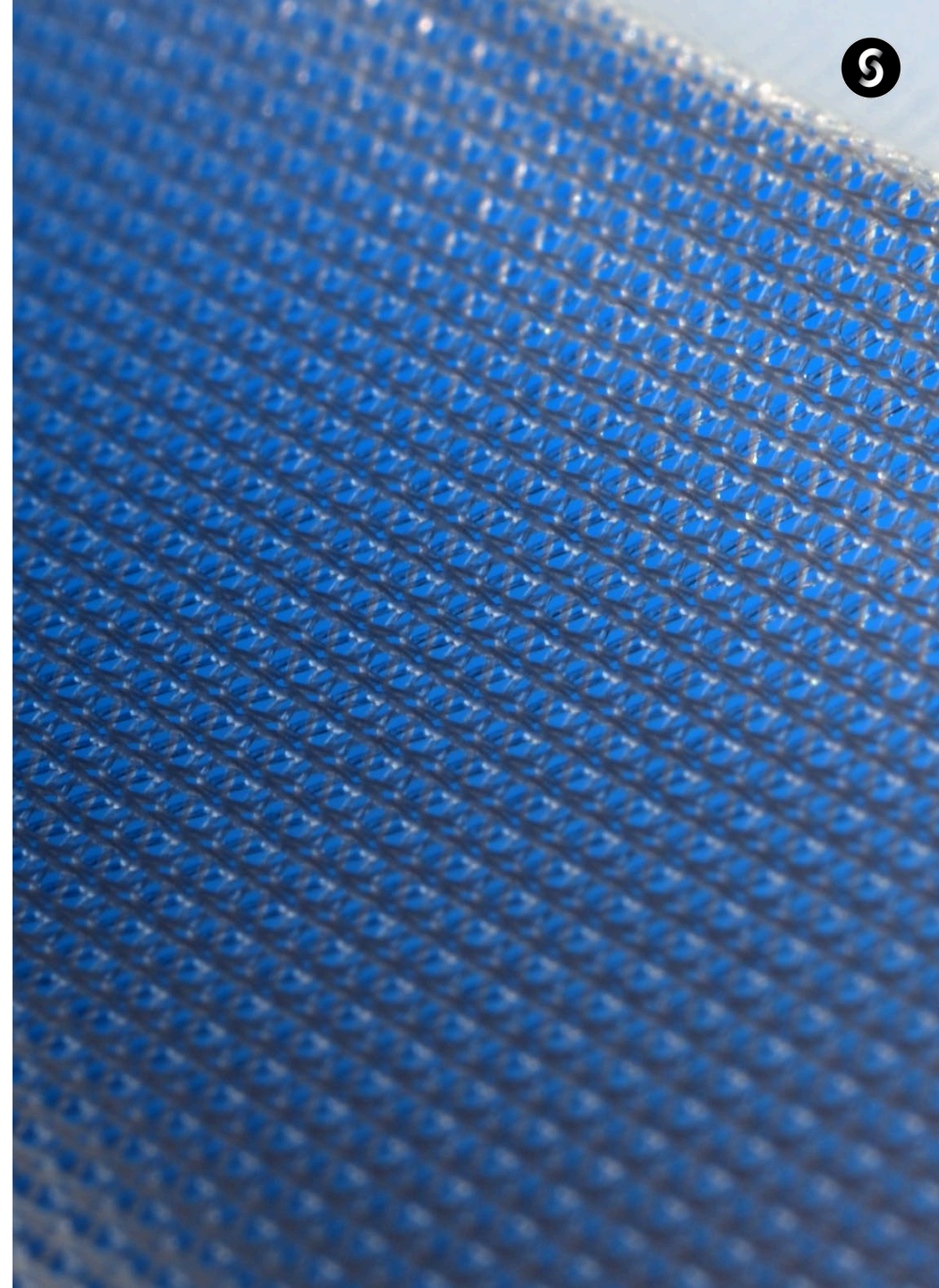
*Pictured: Shawmut's Park Avenue Technical Center in Burlington, NC*





## Industry-Leading Performance

- Made in the USA
- Federal Drug Administration (FDA) compliant
- Certified by the National Sanitation Foundation (NSF)
- High-performance water filtration permeate carrier fabrics:
  - RO-Flow fabrics exhibit unparalleled channel integrity, ensuring strength and durability even under demanding conditions.
  - RO-Flow can be built with a thinner construction which increases the number of possible wraps around the membrane.
  - The wider channels on RO-Flow Permeate Carriers yield greater fluid volume output and an increased and more efficient flow rate than competitive products.
  - A hybrid tricot design offers flexibility that supports membrane customization while exceptional channel integrity minimizes compression and flow loss over time.



Shawmut's world-class design, engineering, technical, and program management staff are available for customer collaboration and accelerated product development to manufacture RO-Flow® Permeate Carrier Fabrics to meet your specifications. In-house pressure testing to validate constructions with specific membrane service requirements (pressure/flow rates) is available.



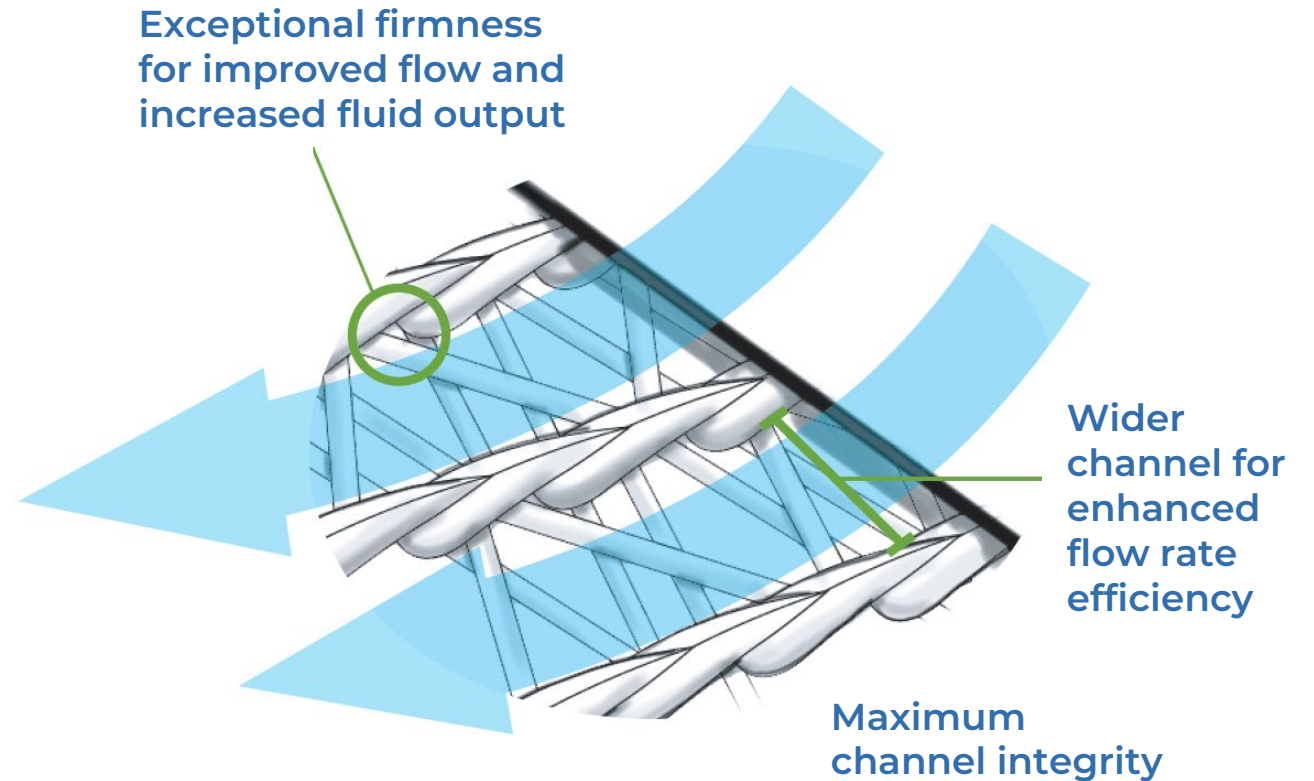
## Standard Product Details

Model #	Thickness (mils)	Courses Per Inch	Wales Per Inch	Weight (oz/yd <sup>2</sup> )	Application
A1466	10	48	60	4.60	Seawater desalination, high pressure
A1604K	9.5	46	60	3.60	High pressure
A1663	12	33	34	3.70	Brackish
A1670	10	35	34	2.60	Brackish, low pressure
A1715	9	44	46	2.60	Brackish, medium pressure
A1673*	9.6	52	40	2.65	Specialty
A1675*	14	29	34	3.25	Specialty

*\*Covered by US Patent # 9,636,637 B2: The patented bicomponent multifilament/mono-filament hybrid tricot knit uses less material to achieve greater results, with an innovative design that delivers firmness, stability, and maximum permeability.*

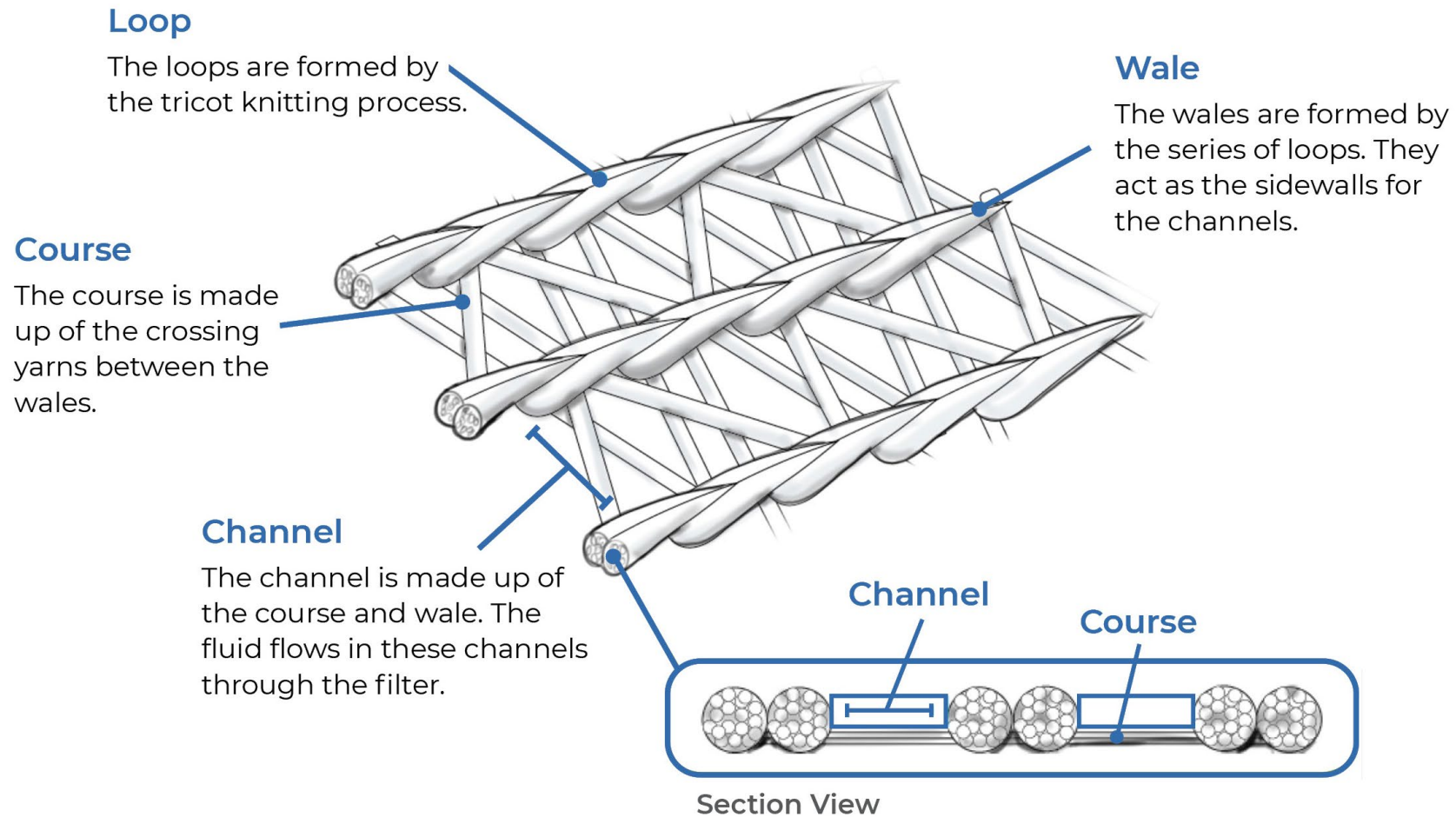
The unique features of RO-Flow help to overcome the limitations of conventional membranes and permeate carriers:

- **Maximum Channel Integrity** for strength and durability.
- **Thinner Construction** increases the number of possible wraps around the membrane.
- **Wider Channels** yield an increased flow rate and greater fluid volume output.
- **Hybrid Tricot Design** offers flexibility that supports membrane customization.
- **Exceptional Firmness** minimizes compression compared to traditional multifilament yarns.
- **An Eco-Friendly, Safer Alternative** is achieved through the incorporation of heat treated bicomponent yarn to fuse the fibers without the need for harsh chemicals or epoxy.





RO-Flow® Permeate Carriers are a crucial element in the filtration process. The wider channels on RO-Flow Permeate Carriers yield greater fluid volume output and an increased and more efficient flow rate than other permeate carrier fabrics.



## Leveraging Advanced Technology for Unrivalled Quality Control

Our dedication to innovation goes beyond fabrication, integrating advanced technology like digital rapid inspection with image processing, defect detection, and machine learning. This guarantees unmatched quality control and allows us to keep waste at an extreme minimum.

- ISO 9001 and IATF 16949 quality registrations
- A2LA accredited lab
- Image processing and defect detection
- Machine learning technology
- Eliminates inspection steps
- Breakthrough quality and cost improvements





A patented, innovative design that uses less material, less harmful chemicals and no epoxy to achieve greater results



## LIGHTER WEIGHT

Uses less material to achieve greater results with an innovative design



## ECO-FRIENDLY, SAFER

A better, safer way to achieve firmness, stability, and maximum permeability



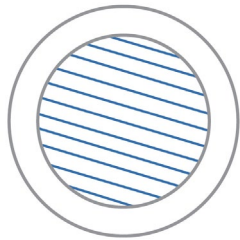
## LESS CHEMICALS

The fibers are fused without the need for harsh chemicals or epoxy



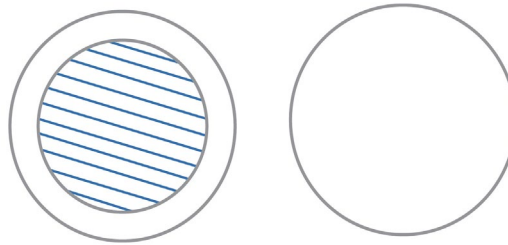
## Fiber Options

The fibers we use to produce RO-Flow® allows it to be used for drinking water desalination, dairy products, wine and even natural gas. Our heat treated bicomponent (bico) yarn allows us to fuse our fibers without the need for harsh chemicals or epoxy, making for a safer, more eco-friendly alternative.



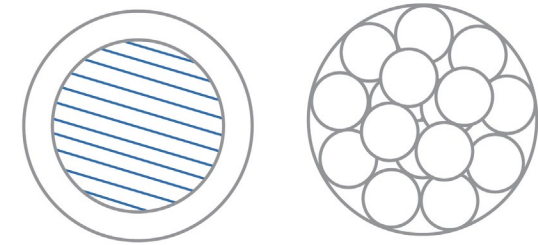
**BICO  
YARN**

Heat treated  
bicomponent yarn with  
a traditional poly core  
and a low met poly sheath



**BICO YARN/MONO  
BLEND**

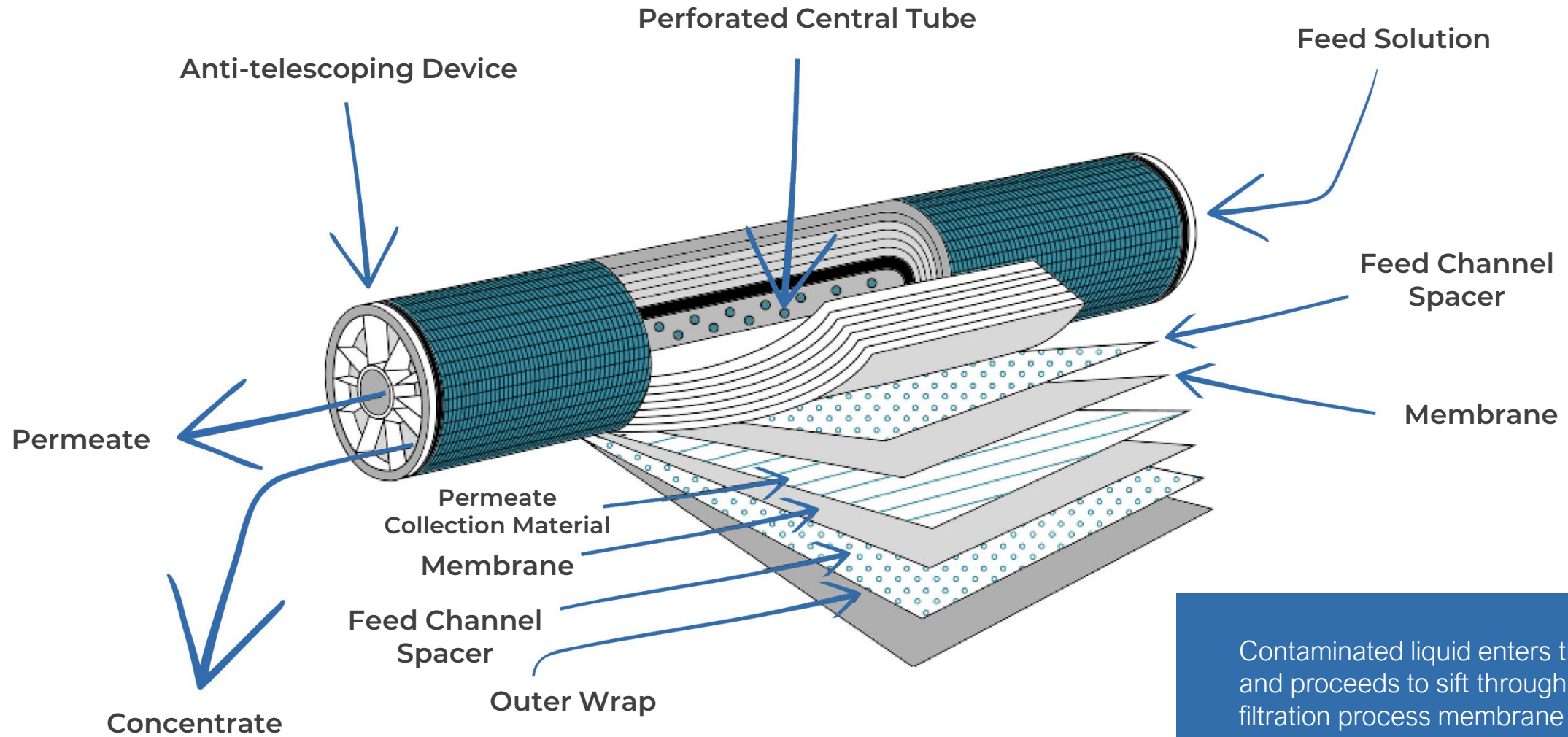
Blend of heat treated  
bicomponent yarn and  
a mono-filament yarn



**BICO YARN/MULTI-  
FILAMENT POLYESTER**

Blend of bicomponent  
yarn and traditional  
polyester-fiber yarn





Contaminated liquid enters through a tube and proceeds to sift through a series of filtration process membrane layers that remove impurities. The permeate carrier is a crucial element in this filtration process because it channels the purified substrate through the tube.





## Shawmut makes Advanced Materials...

We apply our expertise in textiles, fibers, foams, films, coating, laminating, and surface treatments to develop custom engineered, high-performance flexible materials.

## that perform...

Shawmut materials are designed to perform in some of the toughest applications in the world's most demanding industries.

## and tell your story...

You succeed when your products tell a rich and compelling story to your customers. To help tell that story, we combine functionality with design.

## where you need them.

Shawmut's global footprint offers turn-key solutions across North America, Europe and Asia with a fully-supported, world-wide sales, manufacturing and field support platform that is seamless from development through mass production.

### FILTRATION



- Porosity
- Chemical Resistance
- Hydrostatic Resistance
- Formability

### AUTOMOTIVE



- Moldability
- Pressure Barrier
- Temperature Cycling
- Hot Shear and Pull

### MEDICAL



- Absorbency
- Viral Barrier
- Breathability
- Drape

### PROTECTIVE WEAR



- Fire Retardancy
- Chemical Barrier
- Heat Transmission
- Drape
- Washability

### PERFORMANCE WEAR



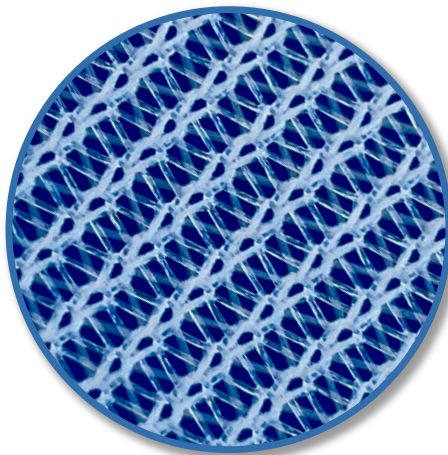
- Elasticity
- Water Barrier
- Breathability
- Washability







# RO-Flow<sup>®</sup> Filtration Fabrics



Contact Shawmut today to order  
RO-Flow<sup>®</sup> Permeate Carrier Fabrics:

Phone: 336-221-2144

Email: [FabricSales@ShawmutCorporation.com](mailto:FabricSales@ShawmutCorporation.com)

Visit the Filtration page on the website to learn more:  
[shawmutcorporation.com/ro-flow/](https://shawmutcorporation.com/ro-flow/)

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