



Dale and Dan Williams

Welcome to IFM

As second generation owners of Industrial Filter Manufacturing, we would like to welcome you. Much has changed in our product offering and our production technologies over the past twenty-five years but the values set out by our founder, Julius James (JJ) Yapps, remain the same.

Our goal is to provide consistent high quality filtration products, fast deliveries, friendly service, and competitive prices. It is on this basis that JJ built IFM and this is our continued commitment to you.

Please let us know how we can help.

Dan Williams

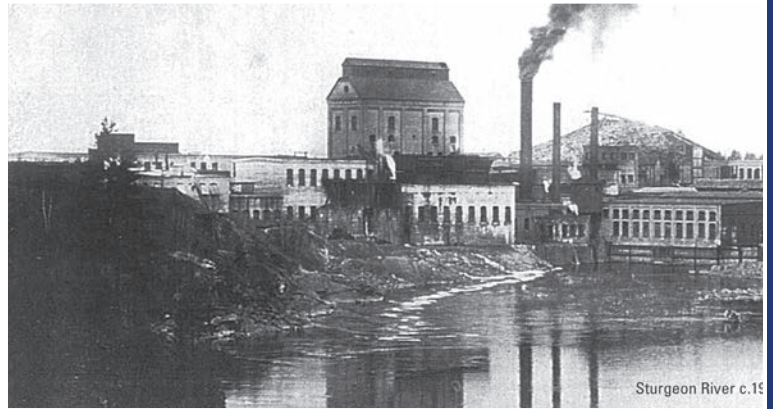
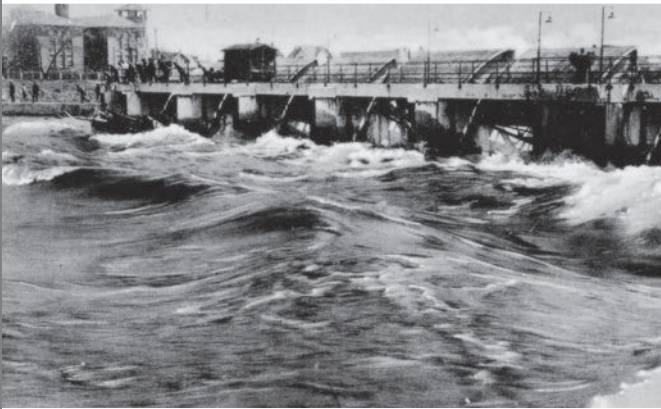
President

PRESSURE GAUGE:
1/2" FNPT CPLG.



IFM 1.0-1

THE STORY



The IFM story begins in a small town in rural Ontario, Canada, with a well-respected dry cleaning business known as Sturgeon Cleaners owned and operated by Julius Yapps. In the 1960's when the need for traditional dry cleaning declined, Julius saw an opportunity for cleaning industrial dust collector bags used in the local pulp and paper mill. A true entrepreneur, Julius developed a process for cleaning these filters and was soon cleaning dust collector bags trucked in from across the province. This service evolved to include repairing and eventually, manufacturing filter bags. Over time, the focus shifted from dust bags to liquid filter bags, and so Industrial Filter Manufacturing (IFM) was born.

In 1990 after many years of running a successful enterprise, Julius retired and sold the company to his daughter Dale and her husband Dan Williams. They relocated IFM to Perkinsfield, Ontario, near the southern shores of Georgian Bay where the basement company grew from a "cottage industry" to a full scale conventional production facility. A more comprehensive quality control system was put in place to ensure

consistent, high quality products. Continuous improvement principles were implemented which led IFM to develop its capacity to produce fully welded (thermally bonded) liquid filter bags. These advancements in technology solidified IFM's presence in the global marketplace as a manufacturer of quality filter bags.

It has been over 15 years since IFM developed it's first fully-welded filter bag in 1998. During that time, our product offering has expanded and our Research and Development Department has grown to include an engineering lab with a full scale test unit for validation and testing new product innovations while providing in-house capacities to support our quality control process.

The new millennium has seen the opening of IFM Europe Srl. in Milan, Italy, and a second Canadian facility in Red Deer, Alberta, in the western region of Canada. Although IFM now supports distributors in over 25 countries, we still produce our products with an appreciation of the principals that contributed to our success. Julius's focus on ingenuity, customer service and quality, lives on at IFM.

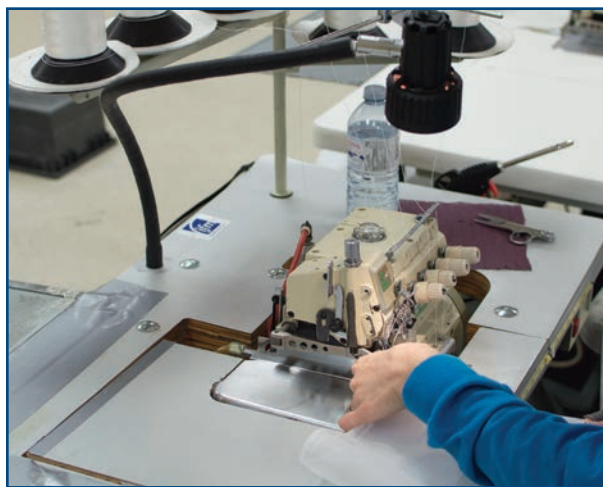


IFM TODAY



Capabilities

IFM's manufacturing capabilities are the result of decades of commitment to research and development. Combining traditional manufacturing with advanced automated processes, IFM has dedicated itself to innovative product development.



Workmanship

Using materials sourced from the industry's leading textile mills, IFM strives for consistent quality and timely deliveries for all of its liquid filter bag products. Our specialized internal quality control system has been developed to ensure consistent product quality and full traceability. Our team of dedicated and highly trained staff takes great pride in manufacturing the highest quality product.



Service

All levels of communication are opportunities to demonstrate our commitment to customer service. From the reception desk to the shipping door and everywhere in between, our priority is to meet or exceed your expectations. Our experienced technical sales staff has the product knowledge and resources to assist with your filtration requirement; whether it's replacement filter bags or a new filtration system.

Global

Serving the global marketplace from our warehouse and manufacturing facilities in North America and Europe, IFM is positioned to provide customers with quality products. Supporting distributors around the world, IFM continues to look for new opportunities in expanding markets.





Custom Filter Bags

In addition to our full range of liquid filter bags, IFM has the capacity to modify standard configurations as well as fabricate specialty and custom product. Let us work with you to develop a product for your unique applications.



Private Labelling

As part of our commitment to our growing distribution network, IFM offers the capacity to private label products for those companies looking to strengthen their brand.

Stock and Responsiveness

Filter emergencies are a potential consequence of fluid processing. Complimenting our stock of the most common liquid filter bags, our flexible production system allows IFM to respond to critical bag supply requirements.



Laboratory

Our in-house laboratory facility supports our quality control system as well as validating production and manufacturing technologies. In addition, this enhances our research and development initiatives for new product offerings.



FUNDAMENTALS

Filter Bag Systems

IFM liquid filter bag products are used in a wide variety of industrial applications. Whether you're working on a new or existing liquid filter bag application, the following pages provide the information necessary for understanding the basics of liquid filter bag systems and their operation. There are two basic types of filter bag arrangements; open system and closed system.



Open System

This is the most economical system where fluid is passed through a filter bag, simply tied onto a pipe, or secured to an adapter head. An open system can also consist of a strainer bag (placed inside a 5 gallon pail, for example) through which unfiltered fluid is poured.



Closed System

This is a more sophisticated method of liquid filtration consisting of three main components:

- micron rated filter bag
- retainer basket
- pressure vessel

The liquid to be filtered is delivered through the inlet of the filter vessel into the open top of the filter bag, which is supported by the retainer basket. Since the system is pressurized, the liquid is distributed over the entire surface of the filter, resulting in even flow and contaminate distribution.

In both open and closed systems, the fluid passes through the filter bag from the inside out. When changing the used filter bag, contamination is held in the filter and permanently removed from the fluid stream.



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Open Filter Bag Systems



Strainer Bag System

Perhaps the simplest filter bag is the gravity flow strainer bag. These bags are most commonly constructed from polyester and nylon woven media.

Standard sizes can include configurations with an elastic, drawstring, or a raw top for clamping on. They are the most economical choice for coarse gravity flow filtration.

Tie-on Filter Bag System

Adaptability is one clear benefit of a tie-on filter bag system. Eliminating the need for hardware investment, tie-on filter bags offer versatility and simplicity for a great many industrial applications. We can manufacture a product designed to your exact specifications.



Adapter Head System

The adapter head system is a low cost, user friendly solution for gravity fed and low pressure filtration. The adaptor head attaches directly onto process piping and supports a bag filter. The filters can be made of any media and micron combination and are installed by simply sliding the ring over the adapter head to create a positive seal. Features such as thermally bonded side seams, integral handles and custom ring size ensure a perfect fit and allow for easy installation and change-out.



Closed Filter Bag Systems

A closed system is a pressurized filtration arrangement where the liquid is delivered through the inlet of a filter vessel into the top of a filter bag supported by a retainer basket. The fluid travels through the supported filter media where the contaminant is trapped while the clean filtrate exits an outlet connection. Contaminate particles are retained inside the filter bag for ease of change-out and disposal. The filter media is selected based on the desired particle size retention.

Advantages of Filter Bag System

- Minimal initial pressure loss, providing extended service life
- The large surface area allows for high dirt loading
- Quick and easy bag change-out, resulting in reduced labour costs and downtime
- Cost effective filtration systems tailored to suit a wide range of process parameters
- Minimal process fluid loss and reliable consistent performance



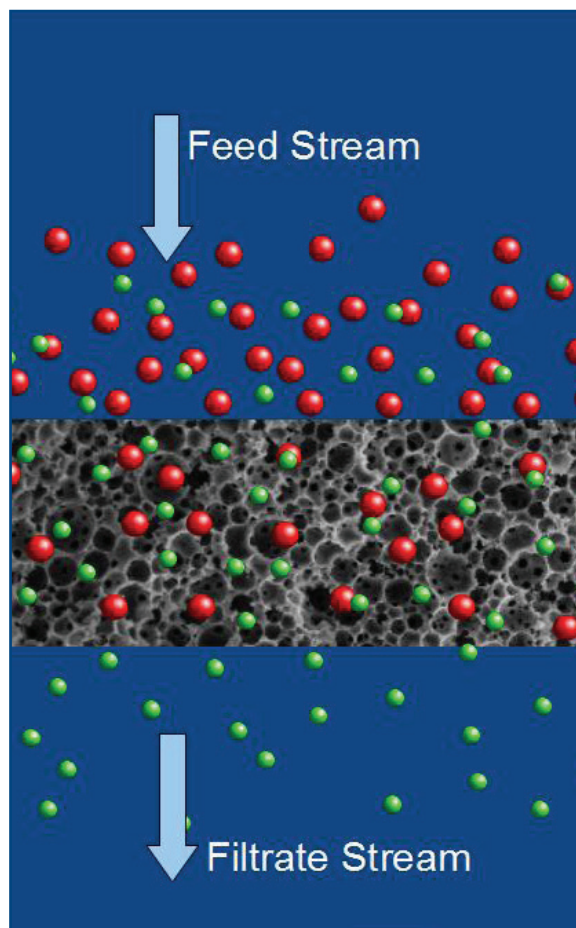
FUNDAMENTALS

Depth Filtration

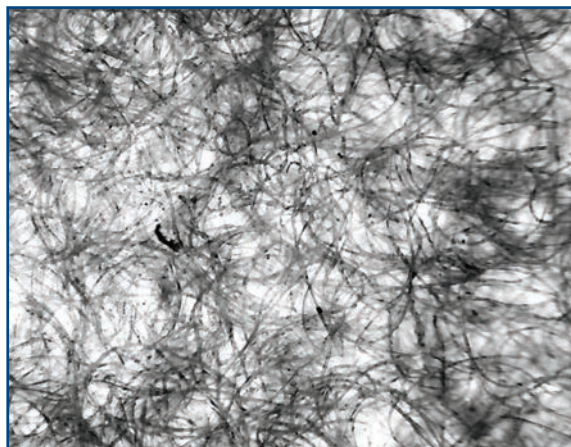
Depth media are filtration structures which remove contaminant particles both on the surface and within the thickness of the media. They are typically a needled felt or meltblown media having a three dimensional structure. This creates a tortuous path resulting in contaminant of a particular size being trapped within the structure.

The advantages of depth filtration are:

- High dirt holding capacity
- Higher void or pore volume
- Ability to remove gelatinous particles
- Extended service life



Depth Filtration



The most commonly used depth filtration media are needle punched felts made from polypropylene and polyester fibres. They provide an economical filtration solution and are suitable for a broad range of process fluids and temperatures. For applications requiring higher temperatures, aramid media felts are available. PROflo™, PROflo+™ and FORMflo™ filter series are made from depth filtration media.



Microfibre media is a form of depth filtration media made by the melt-blown spinning of molten plastic resin to create ultrafine fibre media. This media offers improved loft and void volume for greater depth filtration and efficient particle retention. It is used in the multilayer PUREflo™ filter series.

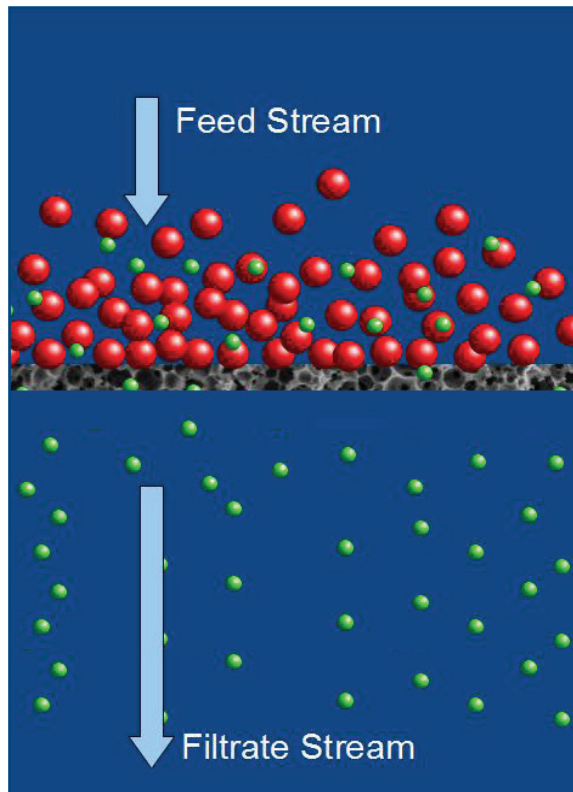


Surface Filtration

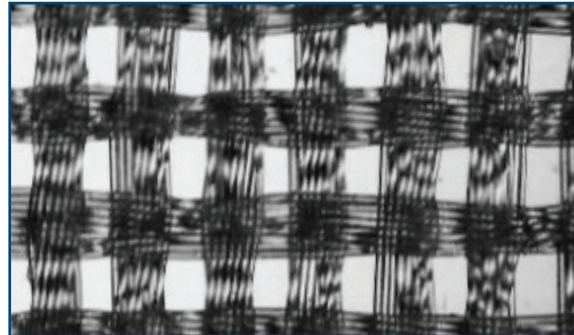
Surface media are thin filtration structures which remove contaminate particles on the surface of the structure. They are typically two dimensional woven structures and are only as deep as the diameter of the yarn from which they are constructed. Woven with great precision, they will entrap particles of a specific size generally larger than the opening of the structure. They do not offer high particle loading or “dirt holding capacity” and as a result, they are used for precise applications with lower contamination levels.

The most widely used surface media are woven structures using either polyester multifilament yarns or nylon and polypropylene monofilaments.

The smooth surface of the material enables it to be cleaned and re-used in many applications. Mesh media offer precision rated filtration with high mechanical strength.

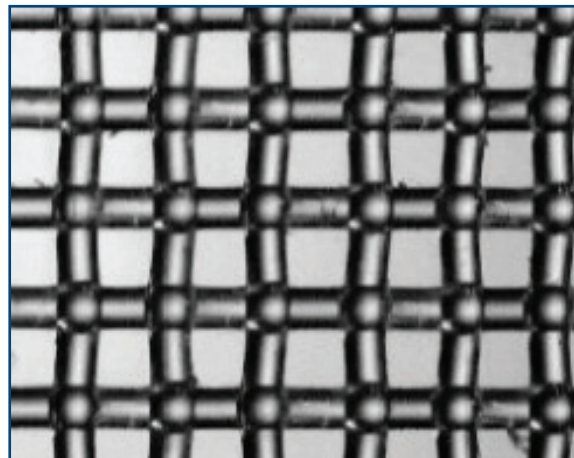


Surface Filtration



Multi and Monofilament

Multifilament media are woven from yarns consisting of many smaller strands spun or twisted together. They have the advantage of being the most inexpensive woven media and therefore produce a very low cost, disposable filter bag. The variations in the woven structure make the media well suited for applications having less precise filtration requirements. Contaminate particles can get trapped within the fibres of the yarn, making this media less cleanable. They are well suited to a wide range of filtration applications where low cost is key.



Monofilament media are woven from strands which have been extruded from a polymer, and therefore have a consistent diameter and a very smooth surface. The advantage of this type of filament is that they can be woven to a very precise filtration structure with consistent square openings down to 1 micron.



FUNDAMENTALS

Visualizing a Micron

What is a Micron?

Liquid filtration involves the removal of unwanted particles from a fluid system. The grade of filter chosen for a specific application is usually determined by the size of the particle to be removed. Contaminant particles are measured using the “micron” unit of measurement.

The micron unit of measurement is used not only to measure the size of a contaminate particle, it is also used to measure the size of the openings in filter media. The material name is based on its micron rating. For instance, a Nylon MonoFilament at a 100 micron pore size is NMO 100.

Micron

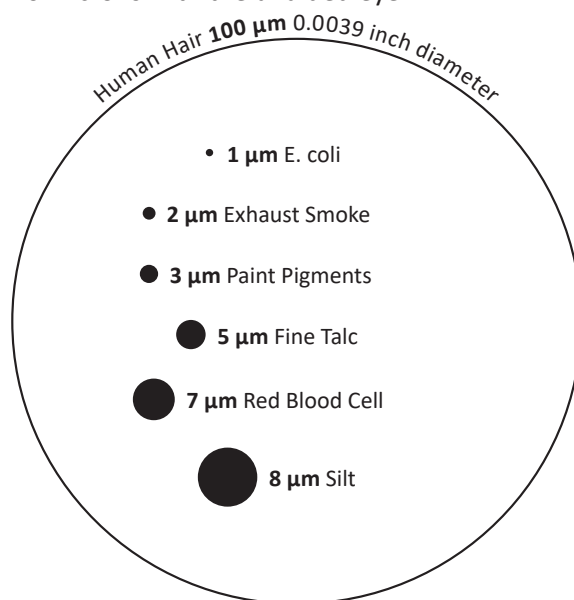
A micron is a metric unit of measurement where one micron is equivalent to one one-thousandth of a millimetre.

[1 micron (1 μ) = 1/1000 mm] or 1 micron

(micrometer) = 1/1,000,000 of a metre

Visualizing a Micron

Most humans cannot see anything smaller than 40 microns with the unaided eye.



Types of Particulate

The type of filtration media best suited for specific applications will depend on many factors such as the nature of the contaminant particles. In a fluid stream the particles have a number of properties that affect the way

in which they interact and are retained by a filter. These properties include size distribution and the mechanical properties of the particles themselves.

Particles can be classified as either non-deformable or deformable. Non-deformable particles are those which retain their shape. Their rigid nature and geometry allows them to be filtered with either a depth or surface filter media. The captured particles can act as a filtration medium as they collect onto the filter media.

Deformable or gelatinous particles such as yeast and paint agglomerates are elastic in nature. They are capable of spreading over a larger surface area and as a result offer more challenges in filtration than do rigid, non-deformable contaminate. Depth filters such as Proflo™, Proflo+™, Pureflo™ and Clearflo™ with their enhanced surface area are an effective method for filtering deformable particulate.

FUNDAMENTALS



Visualizing a Micron

Absolute vs. Nominal Micron Ratings

Filter bag ratings are based on the media's ability to remove particles of a specific size from a fluid stream and are often expressed as either absolute or nominal ratings.

Absolute filtration implies 100% efficiency, or retention of all particles to a specific micron size, while nominal refers to an average or general filtration rating.

The requirement for absolute or nominal filtration is dependent on the application. When targeting a desired filtration level there are a number of variables to consider such as process conditions combined with concentration

and distribution of contaminant particles. In addition, filtration media and construction will also impact filtration efficiency.

IFM has engineered the PUREflo™ series of high efficiency filter bags by combining specialty media arranged in gradient layers achieving over 99 percent efficiency in a range of micron ratings. For less precise applications where nominal efficiencies are suitable, IFM felt and mesh filters offer consistent and reliable filtration.

Thermally bonded seams to eliminate stitch holes created by traditional sewn construction, further improve the efficiency ratings and performance.

MESH/MICRON CONVERSION CHART

Micron	U.S. Mesh	Inches
2000	10	0.0787
1680	12	0.0661
1410	14	0.0555
1190	16	0.0469
1000	18	0.0394
841	20	0.0331
707	25	0.028
595	30	0.0232
500	35	0.0197
420	40	0.0165
354	45	0.0138
297	50	0.0117
250	60	0.0098
210	70	0.0083
177	80	0.007
149	100	0.0059
125	120	0.0049
105	140	0.0041
88	170	0.0035
74	200	0.0029
63	230	0.0024
53	270	0.0021
44	325	0.0017
37	400	0.0015



FUNDAMENTALS

Fit and Function

Fit

In a closed filter bag system, the fit of the bag into the filter housing is of critical importance.

The filter bag retainer ring must be sized to ensure fit in the filter basket. A properly sized ring ensures the bag is seated in the retainer basket and stays in position throughout the filter bag life. Also, proper fit can prevent fluid bypass around the filter bag.



The bag itself must also be sized to ensure the sides and bottom are fully supported by the retainer basket in order to accommodate the high flow and pressure during operation.

As the bag fills with process fluid, it must expand from its 2-dimensional (flat) form into a 3-dimensional basket. The finished filter must be longer than the retainer basket in order to match its surface area and be fully supported while in operation.



Function

Filter bags are one of the many options available for liquid filtration applications. The suitability of any filter product for a specific process fluid is dependent on factors including chemical composition, temperature, viscosity, particle shape and size, contaminant level and filtration level required.

Typically, filter bags are recommended for processes where contaminant concentration is up to 1ppm (parts per million). We have a number of options to help design a system to accommodate applications with higher contaminant levels.



FUNDAMENTALS



Operating Guidelines

How To Properly Install a Liquid Filter Bag

Proper installation of a liquid filter bag is required in order to ensure optimum performance.

If the filter bag comes with a paper label, remove it prior to installation.

Bag length must be sufficient to ensure the filter is fully supported by the retainer basket in order to prevent blowout of the bottom seam. The bag must extend all the way to the bottom of the retainer basket and an effort should be made to reduce the pleats and folds. When the bag is properly installed, confirm the retainer is properly seated to prevent bypass around the filter before closing the filter housing.

In the case of Pureflo™ and Clearflo™ bags, pre-wetting of the filter may be required prior to installation. Follow the instructions provided within the package.



Recommended Change-Out

It is recommended that a liquid filter bag be changed out when the differential pressure (ΔP) between the upstream and downstream sides reaches 20 to 25 psi (1.4 to 1.7 Bars); beyond this you can jeopardize your effluent quality and filter bag integrity. Although this is a rule of thumb, other factors in your system may cause you to change-out the bags earlier; however under no circumstances should ΔP be allowed to exceed 25 psi (1.7 Bars).



Maximum Operating Flow Rate

Maximum flow through a filter bag must take into consideration a wide range of process variables. The chart below outlines the recommended flow rates based on water at ambient temperature.

Vessel Size	Bag dimension (diameter x length)		Maximum Flow Rate	
	Ø x in	Ø x mm	gpm	m ³ /h
1	7 Ø x 16.5	178 Ø x 419	80	18
2	7 Ø x 32	178 Ø x 813	150	34
3	4 Ø x 8	102 Ø x 203	25	6
4	4 Ø x 14	102 Ø x 355	50	12





World Class Filtration Media

Sourced from the world's leading nonwoven media producer, IFM uses only the highest quality liquid filtration felts in the PROflo™ filter series. Our polyester and polypropylene needle felt filter media are surface treated to prevent downstream fibre migration. Standard felts can be used in a multitude of industrial processes and are silicone free for automotive and paint applications. In addition, our polypropylene felts are made from FDA and EU compliant materials for food contact applications.



Engineered Retainer

All PROflo™ filter bags come standard with the *PolyformSEAL™* retainer. Available in both polypropylene and polyester resins, the *PolyformSEAL™* is a flexible chemically resistant retainer which fits into most filter housings. Our exclusive *PolyformSEAL™*

retainer is designed with four sealing points to ensure bypass free filtration. The integral handles have a raised profile for ease of installation and removal. In addition, the *PolyformSEAL™* is produced in our on-site injection moulding facility which ensures the retainers meet our stringent quality requirements. The *PolyformSEAL™* provides user friendly filtration that will save time and money.



Thermal Bonding Technology

Fully welded using the most advanced welding technologies; the PROflo™ filter bag series provides strength, durability and worry free filtration. The thermally bonded ultra-strong seams eliminate the use of threads and the opportunity for bypass caused by needle holes created by the traditional sewn seams. The result is a filter with excellent seam integrity and improved filtration efficiencies.



COMMON INDUSTRY STANDARD SIZES ARE IN STOCK FOR IMMEDIATE SHIPMENT



Embossed media and micron



Fully welded



Welded construction



Sewn construction

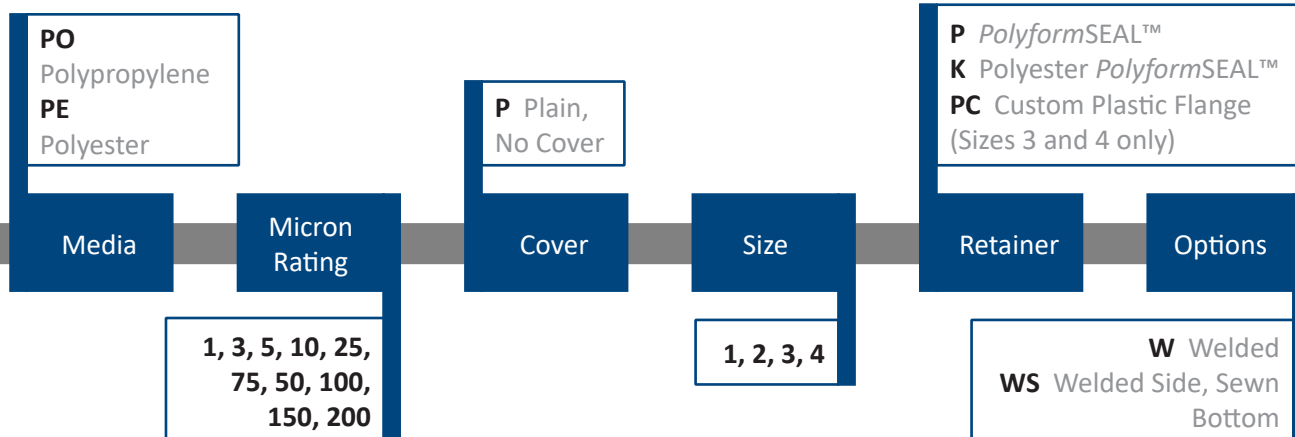
Elimination of needle holes prevents unnecessary fluid bypass

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18
2	7 Ø x 32 in	178 Ø x 813 mm	150	34
3	4 Ø x 8 in	102 Ø x 203 mm	25	6
4	4 Ø x 14 in	102 Ø x 355 mm	50	12
Maximum Operating Temperature				
PO Polypropylene Felt			200 °F	93 °C
PE Polyester Felt			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to PROflo™ filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas



Product Codes Example: PO 1 P2PW





PROflo™

PROflo+™



Increased Filter Life

IFM's PROflo+™ filter bag series is designed for longer service life. The PROflo+™ high performance felt media consists of a unique blend of fine fibres combined to create a thicker, loftier felt media with greater void space. The result is dirt loading capacity improvements of as much as 2 to 4 times compared to the equivalent standard felt product. Longer service life translates into fewer change-outs and lower operating costs. As with standard felt, the PROflo+™ media is available in both polypropylene and polyester, felt media is surface treated to prevent downstream fibre migration and is compliant to FDA and EU standards.

Engineered Retainer



All PROflo+™ filter bags come standard with the PolyformSEAL™ retainer. Available in both polypropylene and polyester resins, the PolyformSEAL™ is a flexible chemically resistant retainer which fits into most filter housings. Our exclusive PolyformSEAL™ retainer is designed with four sealing points to ensure bypass-free filtration. The integral handles have a raised profile for ease of installation and removal. In addition, the PolyformSEAL™ is manufactured in our on-site injection moulding facility which ensures the

retainers meet our stringent quality requirements. The PolyformSEAL™ provides user friendly filtration that will save time and money.

100% Welded Seams



Fully welded using the most advanced welding technologies, the PROflo+™ filter bag series provides worry-free filtration. The thermally bonded ultra-strong seams eliminate the use of threads and the opportunity for bypass caused by needle holes created by the traditional sewn seams. The result is a filter with excellent seam integrity and improved filtration efficiencies.

Embossed Media and Micron



PROflo+™ filter bag series are embossed with the filter media and micron rating to allow for quick and easy product identification. Traditional paper tags are either removed or destroyed in filtration applications which can lead to misidentification and result in costly production errors. By heat embossing the felt surface, a permanent marking on the filter is created which helps to ensure easy identification and reduce the probability of production errors.



INCREASED FIBRE, MORE LOFT, LONGER SERVICE LIFE



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Available with
steel ring retainer



Fully welded
seams



PROflo™
Increased loft and void
volume for higher dirt
loading
PROflo+™



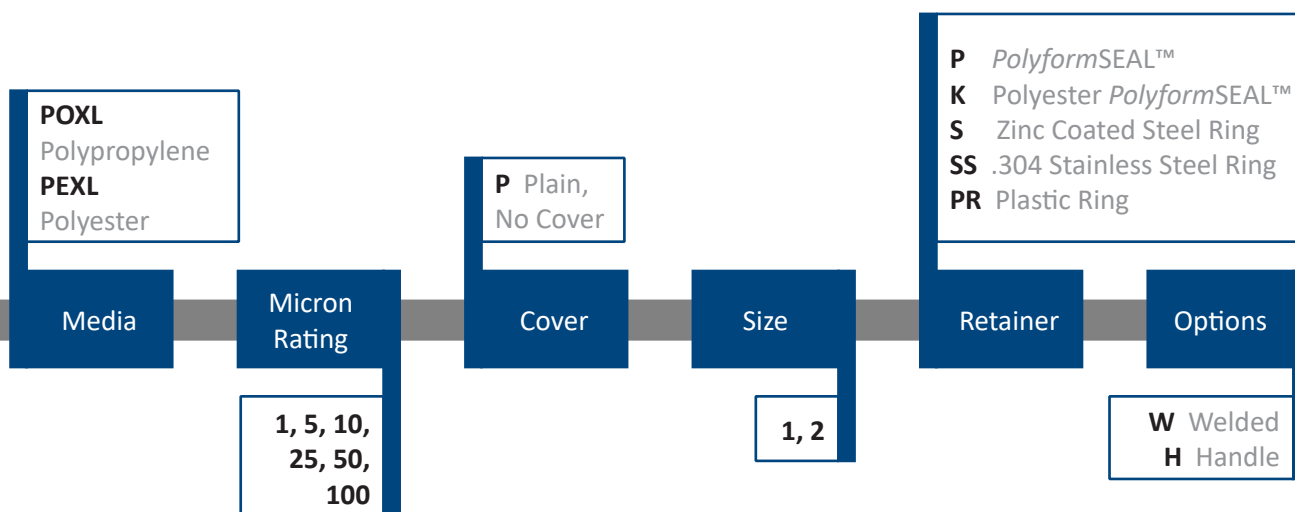
Embossed
media and
micron

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18
2	7 Ø x 32 in	178 Ø x 813 mm	150	34
Maximum Operating Temperature				
POXL Polypropylene Felt			200 °F	93 °C
PEXL Polyester Felt			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to PROflo+™ filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas



Product Codes Example: PEXL 1 P2PW





The Perfect Fit

IFM's FORMflo™ felt filter bag series transforms the standard bulky steel ring filter bag into an element formed for "The Perfect Fit." Our proprietary media forming process creates a filter bag which utilizes a conventional steel ring retainer combined with a body formed to fit a conventional retainer basket perfectly, without the excess bulk of a conventional steel ring filter bag. Filter bags manufactured using this unique process are available in standard and extended life felt media in both polypropylene and polyester. As well, FORMflo™ filters are silicone free and have an enhanced surface treatment to prevent downstream fibre migration.



No Lump

FORMflo™ filters are fully welded using the most advanced filtration media welding technologies.

Thermally bonded side seams provide strength and eliminate the lump sewn seams created around the retainer. Traditional sewn seams create a lump when the seam wraps around the retainer ring. This lump prevents the retainer ring from properly seating in the retainer basket and can lead to the process fluid bypassing rather than flowing through the filter. The FORMflo™ filter series eliminates the lump, for bypass free filtration improved efficiency.



Integrated Handles

All configurations of the FORMflo™ filters come with standard double integral handles. The handles, made from the bag material itself, eliminate the need for additional material and stitching and guarantee uniform strength and chemical compatibility. The handles make filter removal easy and are designed to fold down into the body of the bag to ensure uninterrupted process flow.



INDUSTRY STANDARD SIZES ARE IN STOCK FOR IMMEDIATE SHIPMENT



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FORMflo™



Traditional filter

Contoured filter fits basket without pleating



Fully welded seams



Unique to ifm
Available in extended life felt

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18
2	7 Ø x 32 in	178 Ø x 813 mm	150	34
3	4 Ø x 8 in	102 Ø x 203 mm	25	6
4	4 Ø x 14 in	102 Ø x 355 mm	50	12
Maximum Operating Temperature				
PO Polypropylene Felt			200 °F	93 °C
PE Polyester Felt			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to FORMflo™ filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas

PO Polypropylene
POXL Polypropylene Extended life
PE Polyester
PEXL Polyester Extended life

P Plain,
No Cover

S Zinc Plated Steel Ring
SS Stainless Steel Ring
PR Plastic Ring

Media

Micron
Rating

Cover

Size

Retainer

Options

PO 1, 3, 5, 10, 25, 50, 75, 100, 150, 200
POXL 1, 5, 10, 25, 50, 100
PE 1, 5, 10, 25, 50, 75, 100, 150, 200
PEXL 1, 5, 10, 25, 50, 100

1, 2, 3, 4

W Welded
H Handle

Product Codes Example: **PO 1 P2SHW**



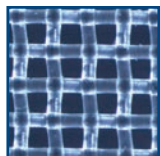
NETflo™

Filament mesh filtration



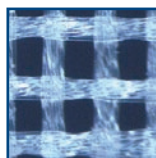
Woven Mesh Filters

IFM's Netflo™ mesh filter bag series are designed for applications where surface filtration is required. Available in a full range of media, micron and retainer configurations, the Netflo™ filter series can be used in a broad spectrum of applications, from process water and cooling tower applications to critical pharmaceutical and automotive paint.



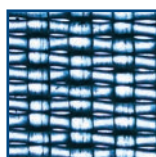
Nylon Monofilament

Netflo™ nylon monofilament mesh filters are designed for surface filtration applications where precision and consistency are required. The monofilament mesh media is produced from individual filaments woven into precise pore size openings and then heat set to maintain precision and provide extra strength and durability. Nylon mesh is available in standard and FDA compliant grades for food contact and is silicone free for use in paint and automotive applications. In addition, nylon mesh filters in lower micron configurations can be sewn with bound seams to provide fibre free filtration and prevent bypass due to needle holes.



Polyester Multifilament

The Netflo™ Polyester multifilament mesh series provides an economical alternative to monofilament mesh. Multifilaments are woven from yarns where each strand within the yarn is comprised of many smaller filaments twisted together to create strong but economical media. Available with a full range of sizes and retainer options, the polyester mesh media provides good dirt removal capacity in a wide range of micron ratings.



Polypropylene Monofilament

Netflo™ polypropylene monofilament mesh filters are designed specifically for aggressive applications and abrasive process fluids. The chemically resistant polypropylene monofilament mesh is woven with precision using large diameter fibres to ensure durability. All available micron ratings are made from FDA compliant materials suitable for food contact and are certified silicone-free.



AVAILABLE IN STANDARD AND CUSTOM SIZES



NF 1.0-1



Multiple retainer options



Multiple seam configurations



Tie on for gravity or low flow applications



Silicone free
Manufactured from silicone
free materials

PEM

Polyester multifilament

NMO

Nylon monofilament

PPMO

Polypropylene monofilament

Media

Micron
Rating

PEM 100 to 2000
NMO 1 to 1200
PPMO 100 to 800

P Plain,
No Cover

Cover

Size

1, 2, 3, 4

P PolyformSEAL™

S Zinc Plated Steel Ring

SS .304 Stainless Steel Ring

PR Plastic Ring (Sizes 1 and
2 only)

K Polyester PolyformSEAL™

PC Custom Plastic Flange
(Sizes 3 and 4 only)

Retainer

Options

H Handle
A Automotive Seam
B Bound Seam

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m³/h
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18
2	7 Ø x 32 in	178 Ø x 813 mm	150	34
3	4 Ø x 8 in	102 Ø x 203 mm	25	6
4	4 Ø x 14 in	102 Ø x 355 mm	50	12
Maximum Operating Temperature				
PPMO			200 °F	93 °C
PEM, NMO			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

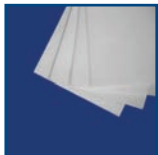
Applications

Typical applications suited to NETflo™ filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas

Product Codes Example: NMO 150 P2PAB





High Efficiency Filtration

PUREflo™ high efficiency filter bags have been designed for demanding applications that require critical particle size retention and dirt holding capacity. Constructed from chemically resistant polypropylene microfibre for a wide range of process applications, PUREflo™ filter bags can achieve particle retention efficiencies of up to 99.9%† Configured from gradient density layers, PUREflo™ filter bags provide all the benefits and convenience of a filter bag system at lower operating costs than other high efficiency technologies.



Graded Density Filtration

All PUREflo™ high efficiency filter bags are manufactured from chemically resistant polypropylene microfibre media. Multiple layers of polypropylene microfibre media are combined to create a high-loft filter with excellent dirt holding characteristics. The layers are arranged for graded density filtration with the inner layers serving as a pre-filter to remove coarse particles, while the

denser outer layers progressively remove finer particles for a polishing effect.



Welded Seam

Thermally bonded components coupled with staggered seam construction combine to achieve improved particle retention efficiencies of up to 99.9%

Filter Model	Removal Efficiency	Size removed
POMF 0.5	99.0 %	0.5-1 µm
POMF 1	99.0 %	1-2 µm
POMF 2	99.6 %	2-5 µm
POMF 5	99.3 %	5-10 µm
POMF 10	99.8 %	10-15 µm
POMF 25	99.9 %	20-30 µm

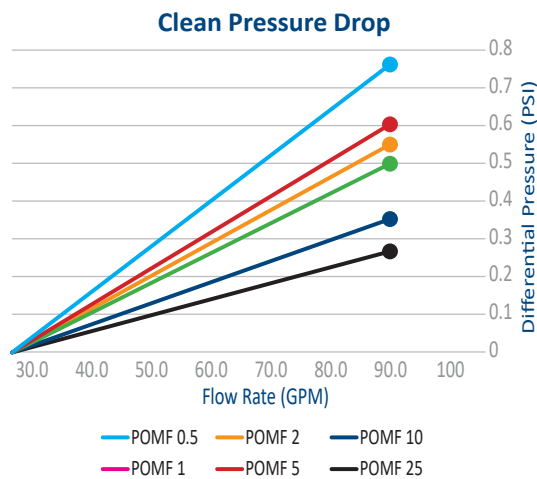
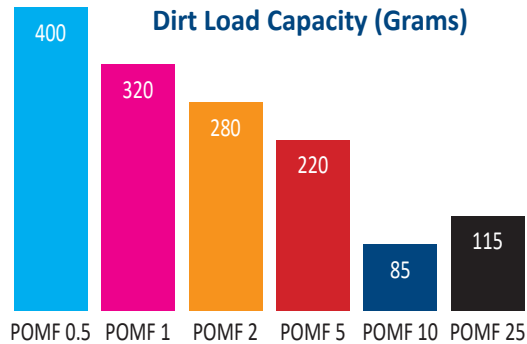
† Efficiency data verified by independent testing laboratory



MULTIPLE LAYERS OF GRADED DENSITY MEDIA



PU10-1

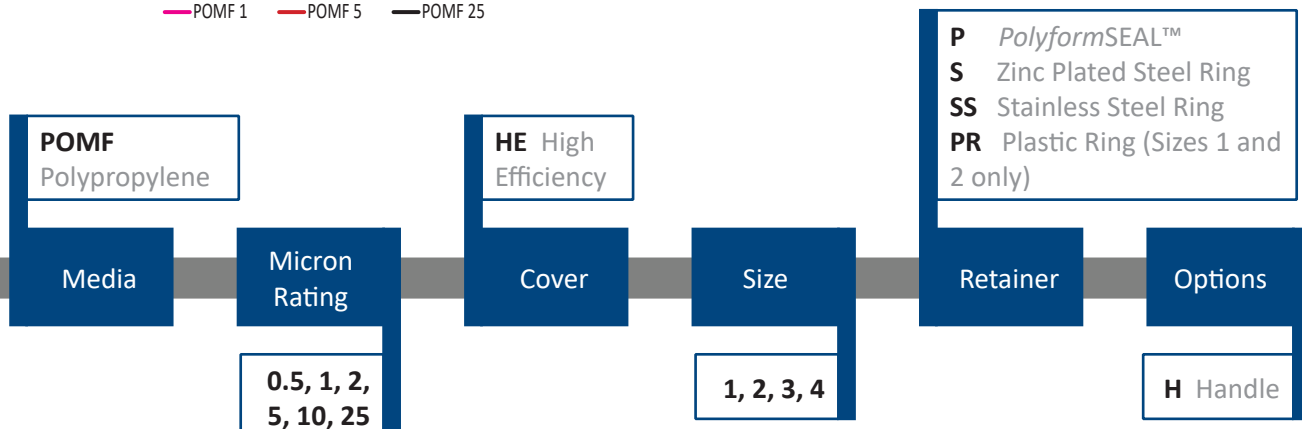


FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	60	14
2	7 Ø x 32 in	178 Ø x 813 mm	100	23
3	4 Ø x 8 in	102 Ø x 203 mm	20	5
4	4 Ø x 14 in	102 Ø x 355 mm	40	9
Maximum Operating Temperature				
POMF			200 °F	93 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to PUREfloTM filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas



Product Codes Example: **POMF 1 HE2P**





The CLEARflo™ filter series offers a broad spectrum of oil adsorbing options for light duty through to the most critical applications. Designed to remove a full range of non-emulsified oil and dirt from process streams the series includes the POMB, PSORB, OWS and 500 series configurations.

POMB Series

Ideal for applications with standard flow and low oil concentration; the POMB series is IFM's first line of defense for fluid streams where trace oils are an issue.



Particulate and Oils

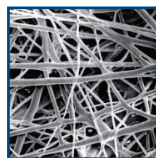
POMB multi-layer construction makes use of the dirt loading attributes of needle felt media combined with the oil adsorbing capabilities of polypropylene microfibre. This combination creates a double-duty filter by removing both particulate and traces of non-emulsified oils from process streams.



Standard and Light Duty

The POMB filter series is fully customizable and is available in

micron ratings ranging from 1μ through to 200μ to ensure the desired particulate retention. In addition, a light duty version of the POMB, (the POMB OALT) is available where oil concentrations are low.



Oil Adsorbing Microfibre

Polypropylene microfibre is well known for its ability to adsorb oil. Its chemical composition and unique pore structure serve as a magnet to non-emulsified oils. Oils are drawn to, and trapped within, the multitude of void in the microfibre media. As a result, microfibre media can hold up to 7 times its weight in oil, dependent upon process variables such as the oil viscosity and process flow rate.



IDEAL FOR APPLICATIONS WITH STANDARD FLOW AND LOW OIL CONCENTRATION





Oil adsorbent filtration
POMB

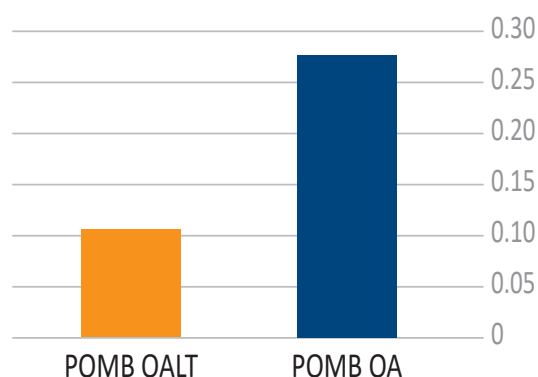


Thermally bonded cover prevents downstream migration



Inner layer customizable to meet desired filtration level

Oil Adsorption Capacity (litres)

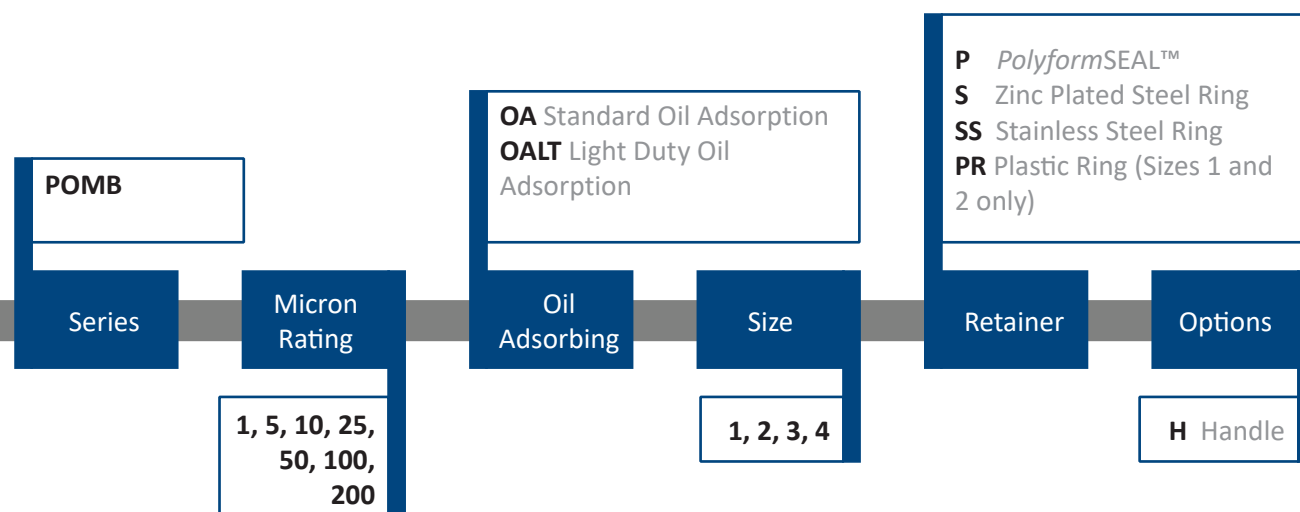


FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	60	14
2	7 Ø x 32 in	178 Ø x 813 mm	100	23
3	4 Ø x 8 in	102 Ø x 203 mm	20	5
4	4 Ø x 14 in	102 Ø x 355 mm	40	9
Maximum Operating Temperature				
PO			200 °F	93 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to CLEARflo™ POMB filters:

- Industrial Parts Manufacturing
- Chemical Process
- Industrial Process Water



Product Codes Example: POMB 5 OA2P



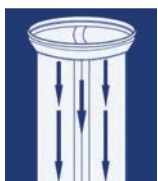
CF-POMB 1.0-2



The CLEARflo™ filter series offers a broad spectrum of oil adsorbing options for light duty through to the most critical applications. Designed to remove a full range of non-emulsified oil and dirt from process streams, the series includes the POMB, PSORB, OWS and 500 series configurations.

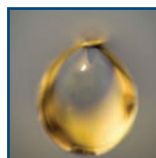
PSORB Series

PSORB contains a specially constructed blend of media creating an engineered core of virgin shredded microfibre. The structure dramatically increases the available surface area for oil adsorption during use.



Channels Flow

The unique design of the PSORB bag channels the flow of the process fluid through the oil adsorbing core for greater adsorption. The PSORB filter is manufactured with an internal impermeable media layer which channels the process fluid through the microfibre core, thereby increasing contact time and opportunity for adsorption.



Adsorbing Capacity

The media creates a tortuous path impeding the flow of oil through the filter, enhancing the residence time and oil adsorption of up to 10 times its initial weight in oil.



Ideal for Low Flow Applications

The PSORB filter bag is designed for maximum flows of 5 to 10GPM (1.13m³/hr to 2.27m³/hr) to allow for optimum extraction of non-emulsified oil from a fluid stream. Residence time and increased surface area of the microfibre core allow for peak performance.

REMOVE NON-EMULSIFIED OIL FROM A FLUID STREAM





Oil adsorbent filtration

PSORB



Microfibre core engineered for maximum absorption capacity



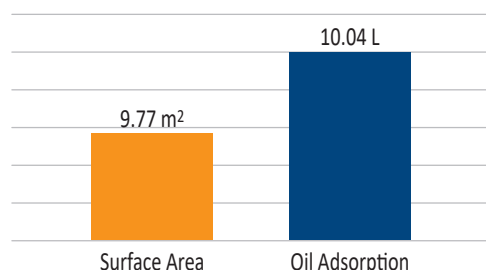
Custom sizes available



Multiple retainer options

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	3-5	0.7 - 1.1
2	7 Ø x 32 in	178 Ø x 813 mm	5-10	1.1 - 2.3
Maximum Operating Temperature 200 °F / 93 °C				
Change out when PSORB media reaches saturation or when effluent quality is compromised				

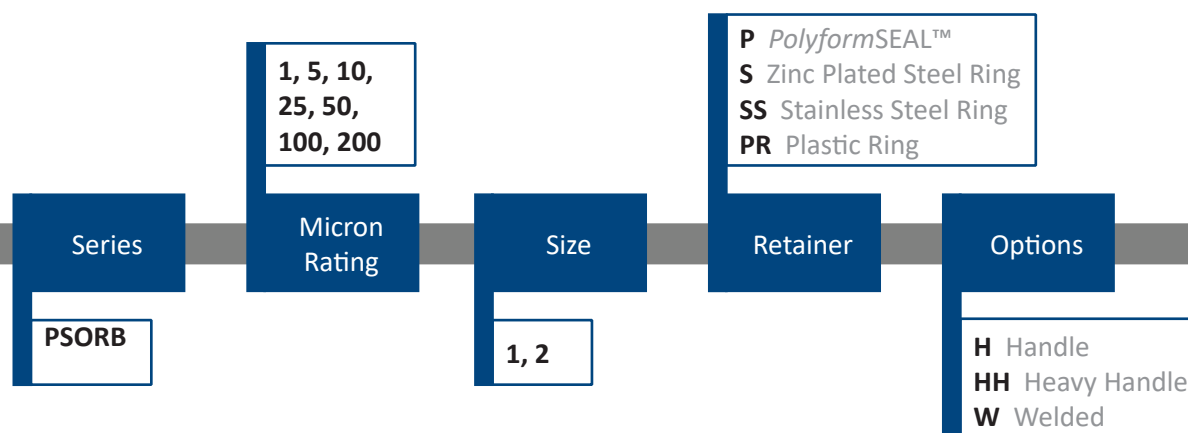
PSORB Performance Data



Applications

Typical applications suited to PSORB filter bags include:

- Industrial Parts Manufacturing
- Chemical Process
- Industrial Process Water
- Metal Casting



Product Codes Example: PSORB 5 P2SHW



CF-PSORB 1.0-2



Oil adsorbent filtration
OWS



The CLEARflo™ filter series offers a broad spectrum of oil adsorbing options for light duty through to the most critical applications. Designed to remove a full range of non-emulsified oil and dirt from process streams the series includes the POMB, PSORB, OWS and 500 series configurations.

OWS Series

OWS bags (oil water separator) are manufactured with a granular activated carbon core making it the most effective of the oil adsorbing filter bag.



Maximum Oil Adsorption

For maximum retrieval of trace amounts of oil, the OWS activated carbon filter bag offers the best performance of all the oil adsorbing filter bags. OWS filters are designed for low flow applications where residence time and expanded surface area allow for superior retention. Using the latest in manufacturing technology, the OWS filters feature an impermeable inner liner which channels fluid through the centre core filled with



oil adsorbing activated granular carbon.

Carbon Core

Granular activated carbon is a form of carbon specially processed to be riddled with small, low-volume pores that increase the surface area available for oil adsorption. The result is increased oil adsorption capacity of up to 12.9L.



Customizable

The OWS bags can be custom made in configurations to fit a variety of systems and processes. In addition, OWS bags can be purchased pre-filled with activated carbon or



FOR MAXIMUM OIL ADSORPTION



CF-OWS 1.0-1



Oil adsorbent filtration
OWS



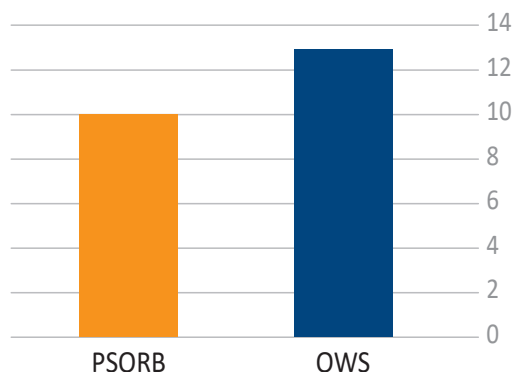
Pre-filled for
immediate
installation



Carbon ready for
on-site filling

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
2	7 Ø x 32 in	178 Ø x 813 mm	2	0.45
Maximum Operating Temperature 200 °F / 93 °C				
Change out when Activated Carbon media reaches saturation or when effluent quality is compromised				

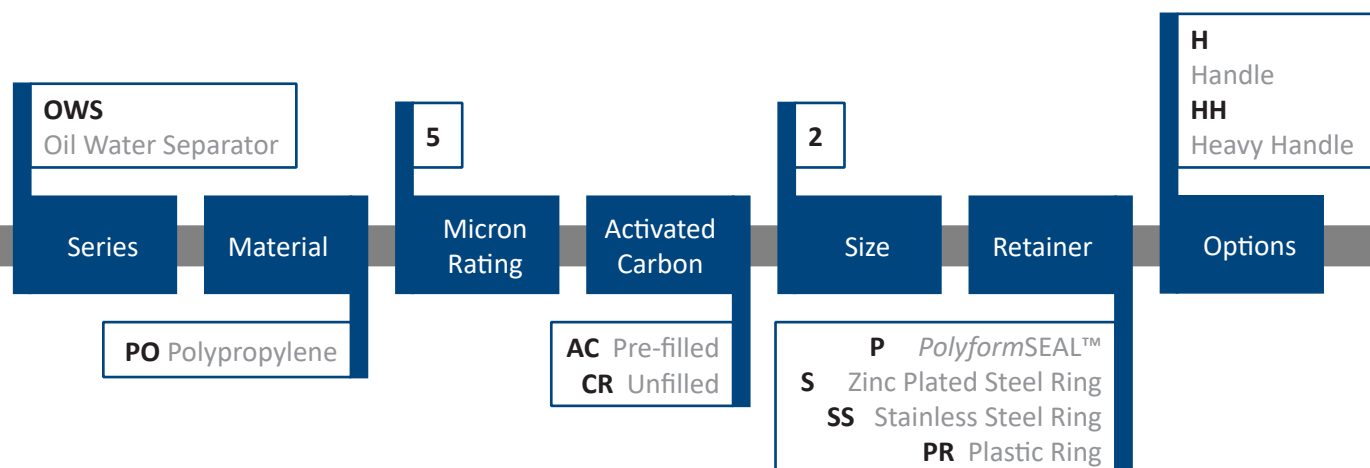
Oil Adsorption Capacity (litres)



Applications

Typical applications suited to OWS filter bags include:

- Industrial Parts Manufacturing
- Chemical Process
- Industrial Process Water
- Metal Casting



Product Codes Example: OWS PO5 AC2SH



CF-OWS 1.0-2



Oil adsorbent filtration
500 Series



Increased Surface Area

The 500 series filters incorporate multiple layers of media in order to provide greater filtration surface area resulting in overall available surface area that ranges from 3X to 6X that of a standard size 2 filter.

Available in four micron rating configurations the 500 series can accommodate a broad range of industrial processes.

Model		Micron Rating	Available Surface Area*	
PO	523	2µm	2.7 m ²	29 ft ²
PO	525	5µm	1.8 m ²	19.4 ft ²
PO	527	10µm	1.35 m ²	14.5 ft ²
PO	529	25µm	1.35 m ²	14.5 ft ²

**Based on size 2 bag configuration. Standard single layer size 2 filter has 0.45m² (4.9ft²) available surface area*



High Dirt Loading Capacity

Multiple layers of polypropylene microfiber and felt media are combined to deliver the benefits of high dirt loading and high efficiency filtration. Polypropylene needle felts offer high dirt loading capacity while the melt blown polypropylene microfibre filter media provides high particle removal efficiency. The result is high performance filtration with broad chemical compatibility.



FDA Compliant and Silicone-Free

500 series filters can be used in a multitude of industrial processes ranging from food and beverage applications through to paint and automotive lines. 500 series filtration media is made from FDA food grade compliant resins (FDA CFR title 21) and is silicone free.



CF-500S 1.0-1

GREATER FILTRATION SURFACE AREA

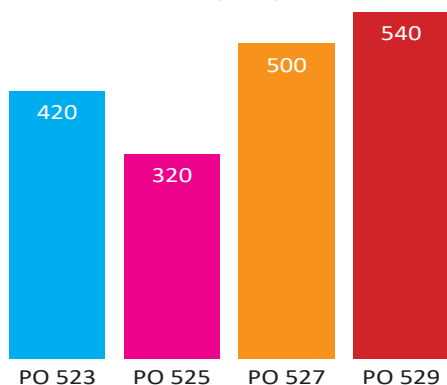


Oil adsorbent filtration

500 Series

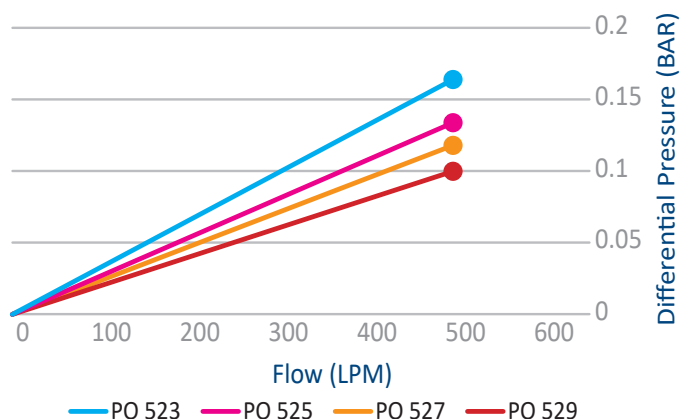


Dirt Load Capacity (Grams)



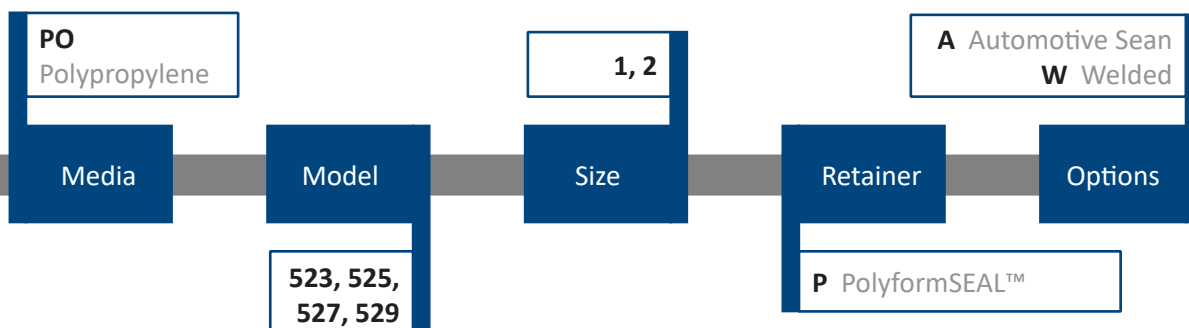
FILTER DIMENSIONS			MAXIMUM FLOW RATE		
Size	Dimension		gpm	m ³ /h	LPM
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18	300
2	7 Ø x 32 in	178 Ø x 813 mm	150	34	570
Maximum Operating Temperature 200 °F / 93 °C					
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar					

Clean Pressure Drop (BAR)



Applications

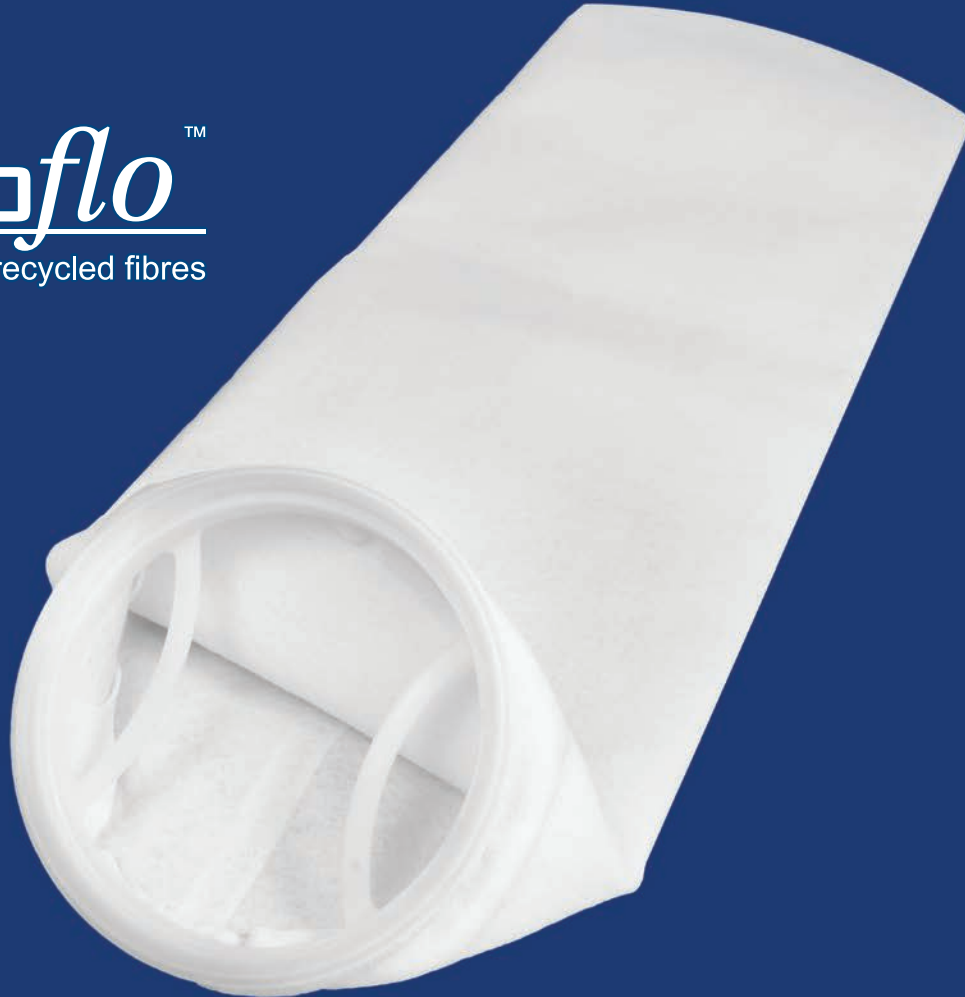
- Automotive
- Process Water, Make Up Water and Deep Wells
- Coolants and Metalworking Fluids
- Petrochemical, Solvents
- General Chemical Applications



Product Codes Example: PO 525 2PWA



CF-500S 1.0-2



The ECOflo™ series of liquid filter bag products was developed based on the **NEW** ECOflo™ felt media. Made from regenerated and post-consumer fibres, ECOflo™ felt provides excellent value and reliability for non-critical liquid filtration applications.



Fit and Function

ECOflo™ filter bags are available with steel ring or engineered plastic flange retainer. The *PolyformSEAL™* is made from polypropylene resin and is chemically compatible in most applications. Its unique design ensures optimum sealing for bypass-free filtration and easy installation and removal.



Fully Welded

ECOflo™ filters are manufactured using the same thermal bonding technology as is used in our standard felt bags for strong seams and worry-free filtration. No needle holes provide bypass-free filtration and thread free seams improve filtration efficiencies.



Silicone Free

Manufactured from silicone-free materials in our silicone-free facility and can be used in applications where silicone contamination is a concern.



Recycled Fibres

Available in both polypropylene and polyester felt configurations; the ECOflo™ filter bag series provide an alternative to standard felts in non-critical applications. The polyester ECOflo™ is made from regenerated as well as post-consumer recycled polyester fibres and contains no optical brighteners. ECOflo™ felt has an outer surface treatment to smooth the surface and prevent downstream fiber migration.

VALUE AND RELIABILITY



EF 1.0-1



Multiple retainer options



Fully welded configurations



For non-critical applications where cost and performance are driving factors

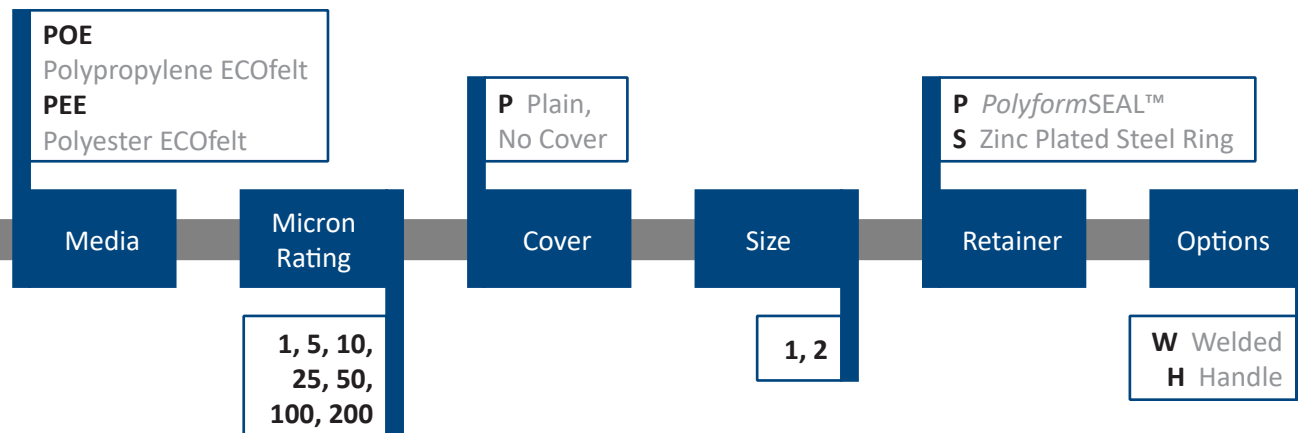


Media comes standard with glazed or singed outer surface treatment

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	80	18
2	7 Ø x 32 in	178 Ø x 813 mm	150	34
Maximum Operating Temperature				
POE Polypropylene Felt			200 °F	93 °C
PEE Polyester Felt			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

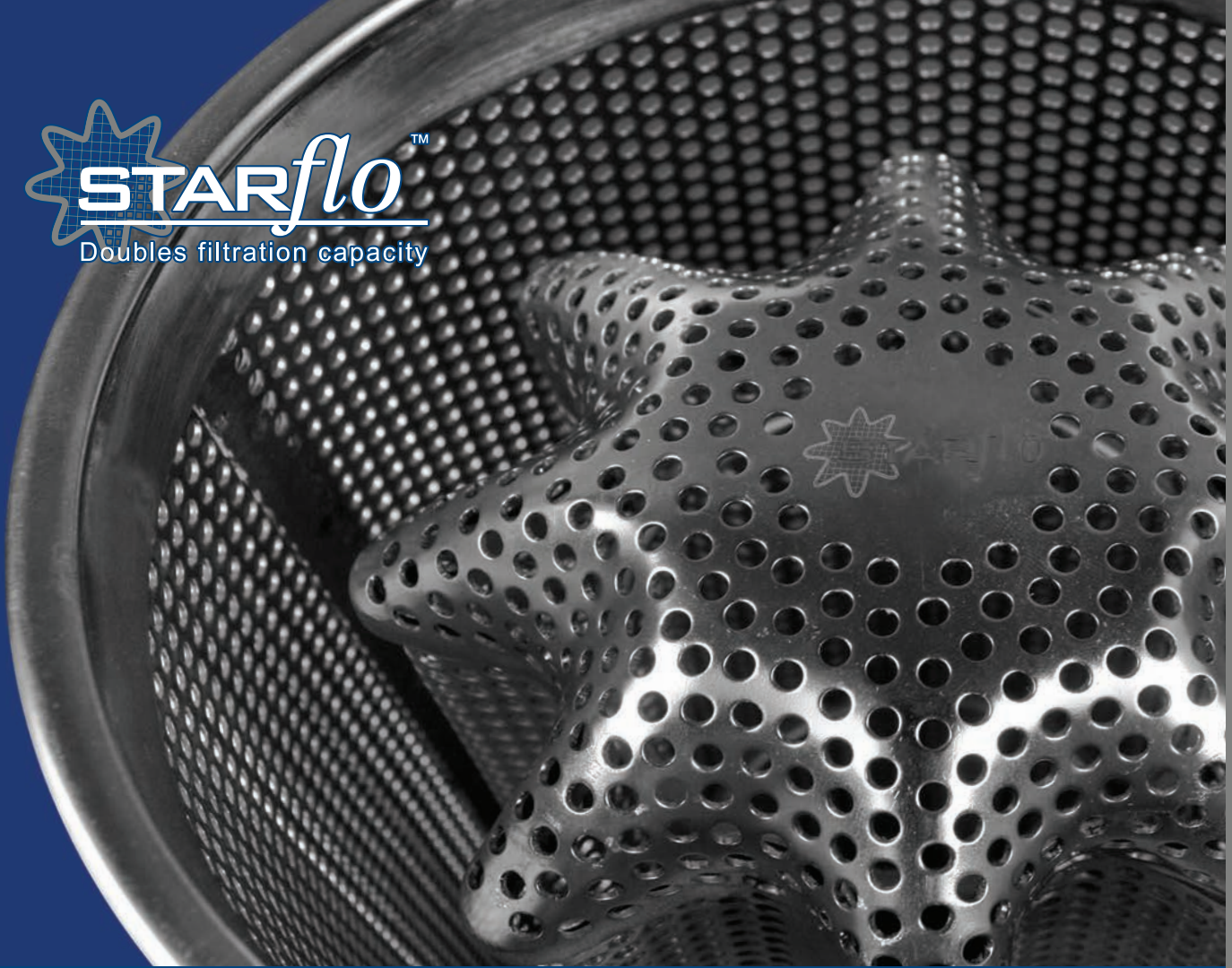
Applications

- Adhesives and Resins
- Lubricants, Solvents and Metalworking Fluids
- Paint, Coatings and Ink Industries
- Petrochemical, Solvents and General Chemical Applications
- Process Water
- Non-Food Contact Applications



Product Codes Example: POE 1 P2PW





The STARflo™ filter bag system is an advanced alternative to standard bag filters. It consists of the STARflo™ retainer basket, filter bag and CLICKfit flange.



Innovative Design

The key to the STARflo™ filtration system lies in the patent pending design of the STARflo™ retainer basket. It's "star" shaped pleated core provides total 3 dimensional support for a bag filter with 98% more surface area than a standard size 2 filter. The baskets, designed to withstand the most demanding applications, are made from .304 stainless steel with a reinforced core and are fully perforated for maximum flow capacity. The STARflo™ basket fits into existing standard size 2 housing for easy retrofitting of existing systems.



4 Times the Service Life

STARflo™ liquid filter bags are available in a complete range of standard and specialty media

for improved performance across all industries. With 98% more surface area than a standard size 2 filter bag, the STARflo™ filter bag provides increased dirt loading capacity compared to conventional bag filters resulting in up to 4x service life. Higher dirt loading and increased service life translates into less down time and reduced filtration costs.



CLICKfit Flange

The unique CLICKfit flange was designed specifically for the STARflo™ filtration system.

Made from chemically resistant polypropylene resin, the CLICKfit flange comes with built in raised handles for easy bag insertion and removal. The profile was engineered to provide a perfect fit that "clicks" to create a positive seal and eliminate fluid bypass.



INSTANTLY DOUBLE THE FILTRATION SURFACE AREA OF YOUR FILTER BAG HOUSING



SF 1.0-1



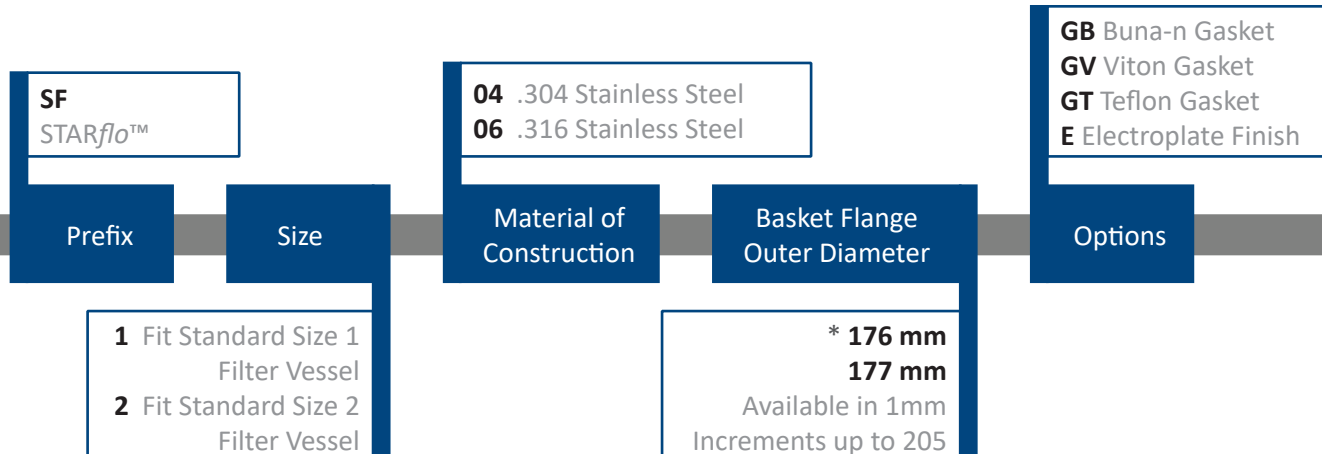
Reinforcement rings on the inner core provide support in the most aggressive applications

FILTER DIMENSIONS			MAXIMUM FLOW RATE	
Size	Dimension		gpm	m ³ /h
1	7 Ø x 16.5 in	178 Ø x 419 mm	150	34
2	7 Ø x 32 in	178 Ø x 813 mm	275	63
Maximum Operating Temperature				
PO Polypropylene Felt			200 °F	93 °C
PEM & PE Polyester, NMO Nylon			275 °F	135 °C
Recommended change out at a maximum differential pressure of 25 psi / 1.72 bar				

Applications

Typical applications suited to STARflo™ filter bags include:

- Automotive
- Food, Beverage and Petrochemical
- Paint, Coatings, Ink and Adhesives
- Oil and Gas



* Measure the outer diameter of the existing basket flange
 STARflo™ retainer baskets can be made to order to retrofit existing filter housings

STARflo™ Basket Product Codes Example: **SF 2 04 178GB**





SPO
SPE
SPOXL
SPEXL
SPEM
SNMO
SPOMF
SPOMB

Media

SPO: 1, 5, 10, 25, 50, 100, 200
SPE: 1, 5, 10, 25, 50, 100, 200
SPOXL: 1, 5, 10, 25, 50, 100
SPEXL: 1, 5, 10, 25, 50, 100
SPEM: 100, 150, 200, 250, 300, 400, 500, 600, 800, 1000, 1500, 2000
SNMO: 1, 10, 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 400, 500, 600, 800, 1000, 2000
SPOMF: 5, 10, 25
SPOMB: 1, 5, 10, 25, 50, 100, 200

Micron Rating

Cover

P Plain, No Cover
N Nylon Mesh Cover
M Polyester mesh Cover
HE High Efficiency
OA Oil Adsorbing
OALT Oil Adsorbing Lite

Size

1X, 2X

FP CLICKfit Polypropylene Flange
FK CLICKfit Polyester Flange
FS Zinc Plated Steel Ring
FSS .304 Stainless Steel Ring

Retainer

Options

W Welded
H Handle

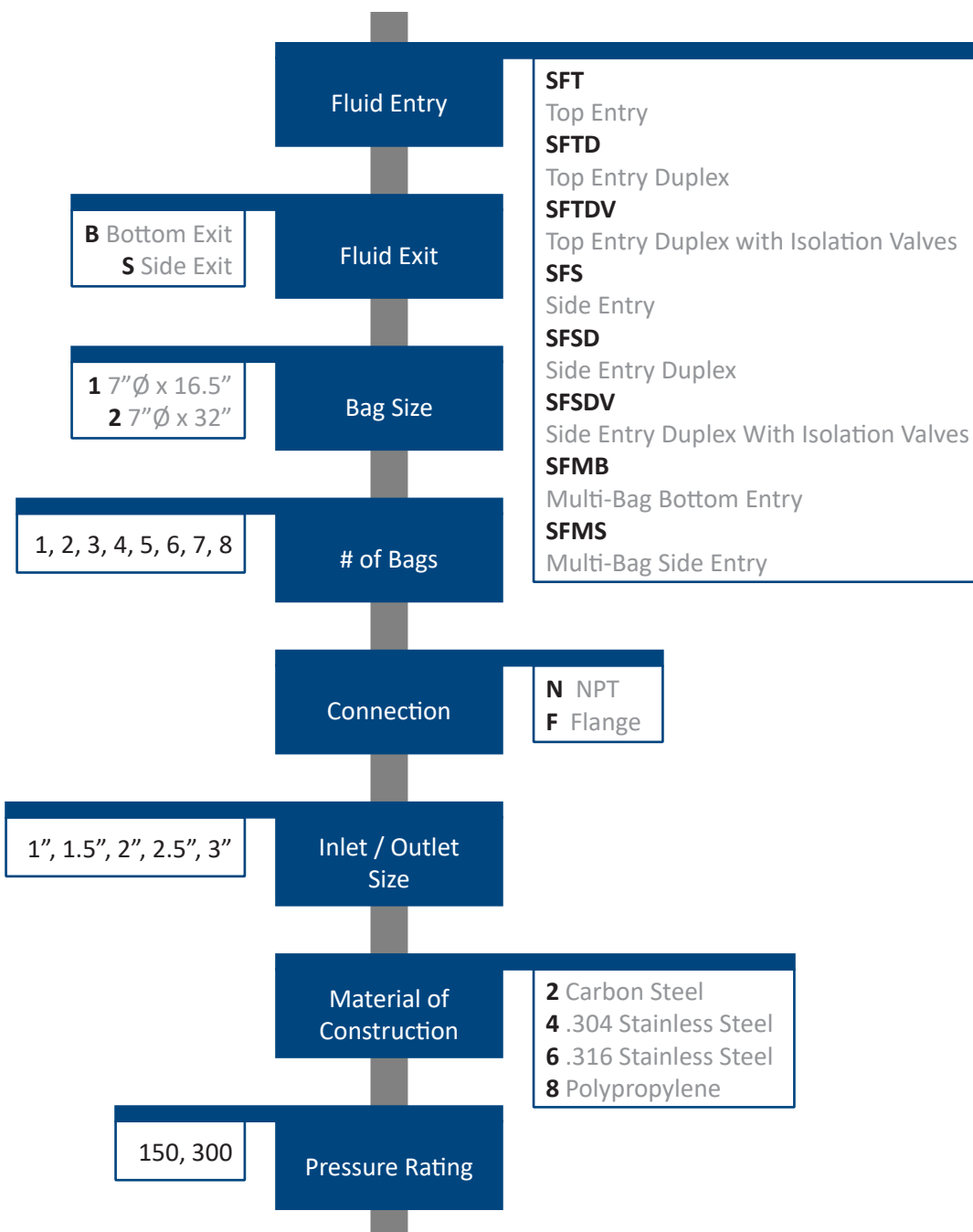
STARflo™ Filter Bags Product Codes Example: **SPO 1 P2XFPW**



INSTANTLY DOUBLE THE FILTRATION SURFACE AREA OF YOUR FILTER BAG HOUSING



SF 1.0-3

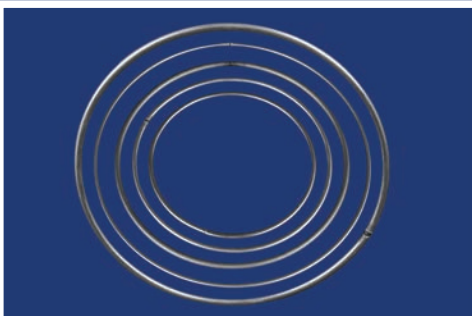


STARflo™ Filter Vessel Product Codes Example: SF TB1 1N22150

STARflo™ filter vessels come equipped with the necessary retainer baskets.



SPECIALTY



We offer numerous modifications to our standard filter bag line to meet customer needs. Additionally, Industrial Filter manufactures a complete line of specialty and custom filter bags to suit your unique application. With virtually no limit to dimension and configuration, we can custom tailor a filter bag to your design specifications.



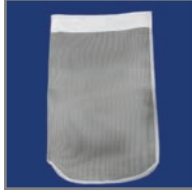
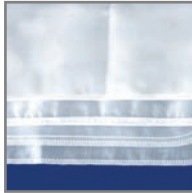
With our private label filter bag program, we will label filter bags with your name, logo, and contact information at no additional cost.



CUSTOM FILTERS FOR SPECIALIZED APPLICATIONS



SP 1.0-1



Retainer Options

Our in-house injection moulding capabilities allow us to produce a wide variety of plastic retainers to complement our steel retainer offerings.

RETAINER OPTIONS	
Code	Description
S	Zinc plated carbon steel rings are available in standard and custom sizes
SS	Stainless steel rings are ideal for aggressive applications and are available in standard and custom sizes
P	IFM's own PolyformSEAL™ retainer made from chemically resistant polypropylene ideal for broad range of chemical compatibilities. Available in 7" and 4" configurations
K	PolyformSEAL™ made from polyester for high temperature applications
FP	IFM's Clickfit™ 7" retainer for hard to fit retainer baskets
PC	4" diameter custom plastic flange
C	7.5" stainless steel snap band for use in commercial™ filter housings
PR	7" diameter plastic ring is an option for filters to be incinerated
RP	Designed to fit into the Ronningen Petter housing, the RP flange has an 8" diameter and unique configuration
OR	Rubber o-ring in multiple diameters and gauges

Custom Seam Options

Comprehensive manufacturing capabilities allow us to fabricate products in any size and configuration using a broad spectrum of equipment and technologies.

CUSTOM SEAM OPTIONS	
Code	Description
A	Automotive seam, where the bag is inverted to prevent fiber migration due to sewing thread
B	Bound seam used on low micron mesh media to reduce bypass through needle holes
F	Folded seam typically used in gravity fed applications
R	Reinforced seams for aggressive applications
W	Thermal bonding capabilities using a variety of welding technologies for specific materials
D	Drawstring bags for gravity fed applications in every configuration
E	Elastic top
Z	Zippered bags
V	Velcro closures



VESSELS



IFM offers a full line of liquid bag filter vessels including single, duplex or multi-round configurations in a wide range of materials and finishes. Whether you are replacing an aging vessel or designing a new filtration system, we deliver quality workmanship and reliable performance.



Easy to Use

IFM filter vessels are engineered for reliability and ease of use and are available in a broad spectrum of materials to ensure compatibility with even the harshest process conditions. Filter vessels are designed for closed loop filtration systems and provide easy access to the bag filter resulting in reduced process down time. Their small footprint allows them to be incorporated in applications where space is a concern.



Built to Preform

All IFM liquid filter bag housings are designed and built to industry standards for long service life, ease of use, and reliable performance. Customization including UM code stamps and CRN registrations can be provided as special-order items.



Versatility

Bag filter vessels are a cost effective and versatile filtration solution. They can be fabricated from a multitude of materials for applications ranging from non-critical to highly specialized processes. Vessels can be sized for low flow to high flow applications from single round to 39 round units. In addition, options for the vessel entry and exit configurations and closures mechanisms allow for full customization.

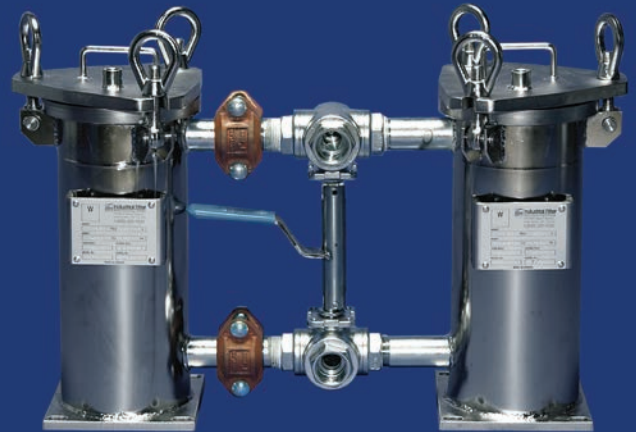


CONTACT YOUR IFM DISTRIBUTOR FOR MORE INFORMATION



VE 1.0-1

VESSELS



Single bag filter vessels are the most common housing used in industrial applications. Used in closed systems, the single bag housing is available in a wide range of materials and standard sizes (1, 2, 3 & 4) for varying process flows and requirements. Single filter vessels have two inlet options available: top entry and side entry. In addition, the vessels can be duplexed to share the same inlet and outlet connections.



Top Entry

The top entry filter vessel (also known as “goose neck”) is considered to be the superior filter vessel configuration. The top entry inlet style directs the flow of fluid through the vessel lid directly into the filter bag. As a result, the bag sits higher up in the vessel which eliminates the need to reach into the process fluid for bag removal. In addition, the vessel lid serves as the hold down mechanism for the bag, thus eliminating the need for an omega spring.



Side Entry

The side entry filter vessel offers a more economical option for closed system filtration. The side entry inlet style directs the flow of fluid through the side of the vessel and down into the filter bag. The housing requires a hold down mechanism or omega spring to ensure the bag remains properly seated in the retainer basket.



Duplex

A duplex vessel consists of two “separate” bag vessels that share the same inlet and outlet connections thus having the capacity to double the flow rate and filtration surface area by utilizing both vessels simultaneously. Alternatively, in applications where a continuous flow (without interruptions) is required, isolation valves are added to direct the flow through one vessel while a bag change-out is being performed on the other. Duplex vessels are available in both the top and side entry configuration.



VESSELS



Multi-Round

A multi-bag filter vessel is used in applications with high flow rates and/or heavy dirt load.

The size of the multi-bag filter vessel required will be determined by the process parameters. Standard multi-bag vessels are manufactured to hold size 2 filter bags and can range from 3 to 39 bags per vessel.



Polypropylene

IFM's polypropylene housings are ideally suited to harsh chemical environments.

Available in standard sizes 2, 4 and 5, these housings feature flange connections to ensure easy installation and seamless operation. Contact us for more details.

be converted for use with filter cartridges.



Accessories

From pressure gauges to displacement balloons, omega springs, and support baskets, IFM has all the accessories to keep your filter systems operating.



Sanitary Housing

For food contact applications, IFM now offers a non-code sanitary housing. Available in standard size 2 (takes 7"Ø x 32"long bag filters), the housings include 2" tri-clamp connections. Interior surfaces/wetted surfaces have a 320 grit mechanical polish. External surfaces come with shot-blast finish, however, electroplating can be requested as a custom exterior finish. Call our sales team for more information.



CONTACT YOUR IFM DISTRIBUTOR FOR MORE INFORMATION



VE 1.0-3



Replacement Parts

IFM can provide you with virtually any replacement parts needed to keep your system running smoothly. To replace parts on an IFM vessel, we only need the model and serial number. Contact us for replacement parts for other manufacturer's housing units.



Parts Available:

- O-rings
- Retainer baskets
- Eyebolt sets
- Omega spring
- Displacement balloons
- Magnetic inserts
- Pressure gauges

T Top Entry
TD Top Entry Duplex
TDV Top Entry
Duplex With Isolation
Valves
S Side Entry
SD Side Entry Duplex
SDV Side Entry Duplex
With Isolation Valves
MB Multi-Bag Bottom
Entry
MS Multi-Bag Side

1 7"Ø x 16.5"
2 7"Ø x 32"
3 4"Ø x 8"
4 4"Ø x 14"

N FNPT*
F Flange
T Triclamp

2 Carbon Steel
4 .304 Stainless Steel
6 .316 Stainless Steel
8 Polypropylene

Fluid
Entry

Fluid
Exit

Bag
Size

of
Bags

Connection

In/Out
Size

Material of
Construction

Pressure
Rating (PSI)

B Bottom Exit
S Side Exit

1, 2, 3, 4,
5, 6, 7, 8,
9, 10, 12

1", 1.5", 2", 2.5"
3", 4", 6"

150**
300

Bottom Exit is standard unless specified otherwise.

* Female National Pipe Thread Connection (FNPT) is standard – others are available upon request.

** 150 pounds per square inch (PSIG) is the standard for all sizes.

Vessels - Order Codes Example: TB1 1N22 150



RESOURCES

Filter Bag Design Data



Filter bag design data can be used in determining the optimum bag size for specific process applications. Note that process variables

such as viscosity, contaminant concentration, particle shape and size must also be taken into consideration when sizing a filter system.

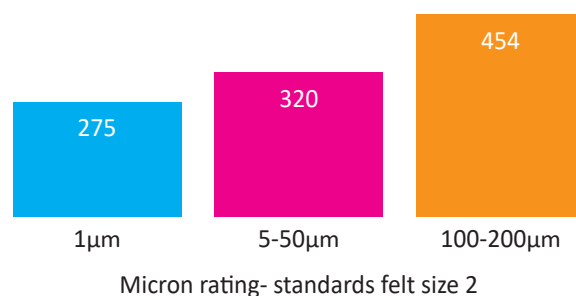
Filter Bag Design Data										
Size	Diameter		Length		Surface Area		Flow Rate		Volume	
	in	cm	in	cm	sq. ft.	sq. cm	GPM	L/sec	Gal.	Litres
1	7	17.8	16.5	41.9	2.5	2341	80	5.0	1.8	6.8
2	7	17.8	32	81.3	4.9	4540	150	9.5	4.0	15.1
3	4	10.2	8	20.3	0.7	649	25	1.6	0.4	1.3
4	4	10.2	14	35.6	1.2	1135	50	3.2	0.6	2.3

Dirt Load Capacity

Chart #1 provides an estimate of the dirt load capacity of a standard size 2 felt filter bag. Note that particle type, size and distribution are factors to be considered along with flow rate and other process variables.

For size 1 bag multiply by 0.5
For size 3 bag multiply by 0.14
For size 4 bag multiply by 0.24

Chart # 1: Dirt Load Capacity (Grams)



RESOURCES



Filter Bag Viscosity - Flow Rate Conversion Chart

The process fluid viscosity can have an impact on the flow rate and pressure drop through a standard filter bag and should be considered in sizing a filtration system.

Filter Bag Viscosity - Flow Rate Conversion Chart

To Use Chart

- 1 Select micron rated bag at the top of the chart.
- 2 Follow the corresponding vertical row down until it intersects the selected viscosity in centipoise.
- 3 The top number in the square indicates the flow rate for a size #1 filter bag at 1 PSI pressure drop and the bottom number represents the flow rate for a size #2 (both figures are in US GPM).

Notes:

- A For greater than 1 PSI ΔP simply multiply the resultant GPM times PSI desired to obtain flow - or - divide desired flow by the resultant flow to obtain ΔP.
- B For #3 size filter bag multiply size 1 flow rate by 0.28.
- C For #4 size filter bag multiply size 1 flow rate by 0.44.
- D For bags with covers reduce results by 25%.

To calculate required # of size #2 filter bags, if you know bag micron, viscosity and desired flow rate, use the following formula:

Example: If you want to use a 10 micron, size 2, Polyester felt filter bag @ 150 gpm, 200 CPS with 3 lbs delta P:

$$\frac{\text{Desired flow (150)}}{\text{Flow rate from chart (33.84)}} \div \text{Target clean delta P (3.0)} = 1.47 \text{ bags (Round up to eliminate decimal points = 2 bags)}$$

PE,PO: Polyester/Polypropylene Felts NMO,PEM: Nylon Monofilament and Polyester Multifilament Woven Mesh

Filter Bag flow Rate @ Desired Viscosity with 1 PSI Delta P for Size 1/Size 2 filter Bags									
VISCOSITY- CPs	PE,PO 1um	PE,PO 5um	PE,PO 10um	PE,PO 25um	PE,PO 100um	PE,PO 200um	NMO,PEM 150-250um	NMO,PEM 300-600um	NMO,PEM 600-800um
20	50.00 94.00								
30	34.00 63.92	64.00 120.32							
40	27.00 50.76	48.00 90.24	70.00 131.60						
60	21.00 39.48	40.00 75.20	60.00 112.80						
80	17.00 31.96	30.00 56.40	45.00 84.60	75.00 141.00					
100	14.00 26.32	24.00 45.12	34.00 63.92	55.00 103.40	80.00 150.40				
200	6.50 12.22	13.00 24.44	18.00 33.84	30.00 56.40	42.00 78.96	55.00 103.40			
400	3.70 6.96	6.90 12.97	12.00 22.56	18.00 33.84	25.00 47.00	31.00 58.28	48.00 90.24	61.00 114.68	
500	2.80 5.26	5.10 9.59	7.50 14.10	13.00 24.44	18.00 33.84	22.00 41.36	34.00 63.92	45.00 84.60	65.00 122.20
800	2.00 3.76	3.60 6.77	5.50 10.34	9.00 16.92	13.00 24.44	17.00 31.96	25.00 47.00	34.00 63.92	48.00 90.24
1000	1.70 3.20	3.00 5.64	4.50 8.46	7.30 13.72	10.00 18.80	15.00 28.20	21.00 39.48	27.00 50.76	40.00 75.20
1500	1.30 2.44	2.30 4.32	3.20 6.02	5.30 9.96	7.00 13.16	9.50 17.86	15.00 28.20	18.00 33.84	27.00 50.76
2000	0.90 1.69	1.80 3.38	2.50 4.70	3.80 7.14	5.50 10.34	7.20 13.54	12.00 22.56	16.00 30.08	22.00 41.36
4000	0.60 1.13	1.20 2.26	1.60 3.01	2.70 5.08	3.50 6.58	4.80 9.02	7.50 14.10	10.00 18.80	15.00 28.20
6000	0.40 0.75	0.78 1.47	1.20 2.26	1.90 3.57	2.60 4.89	3.40 6.39	5.10 9.59	6.80 12.78	10.00 18.80
8000	0.30 0.56	0.57 1.07	0.83 1.56	1.40 2.63	1.80 3.38	2.50 4.70	3.70 6.96	5.00 9.40	7.30 13.72
10000	0.26 0.49	0.45 0.85	0.70 1.32	1.20 2.26	1.60 3.01	2.10 3.95	3.30 6.20	4.20 7.90	6.40 12.03

This chart contains general information and is a general guide only.
Actual results may vary based on fluid being filtered, dirt load and temperature.

Excellent
 Poor
 Good
 Not Recommended



RESOURCES

Thermal and Chemical Compatibilities

The chemical composition and temperature of the process fluid must be considered in order to ensure the integrity of the filter bag in the application. Certain chemicals and temperature combinations can cause degradation of the filtration media resulting in bag failure and downstream contamination.

The chart below provides a general listing of the temperature and chemical compatibilities for our standard product offerings.

Contact the IFM technical sales team for further information and guidance on filter media selection.

Thermal and Chemical Compatibilities

	Polyester	Polypropylene	Nylon	Aramid
Max. Temp (F)	275	200	275	375
Max. Temp (C)	135	95	135	190
Specific Gravity	1.38gr/cm3	0.91gr/cm3	1.14gr/cm3	1.38gr/cm3
Weak Acids	Very good	Excellent	Fair	Fair
Strong Acids	Good	Excellent	Poor	Poor
Organic Acids	Good	Excellent	Poor	Poor
Weak Alkali	Good	Excellent	Excellent	Excellent
Strong Alkali	Poor	Excellent	Excellent	Excellent
Aliphatic Solvents	Good	Fair	Good	Good
Aromatic Solvents	Good	Poor	Good	Good
Alcohols	Good	Good	Good	Good
Ethers	Good	Poor	Good	N/A

** This guide contains general information. Actual use or soak tests must be performed to confirm compatibility.*



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RESOURCES



Filter Media Selection Guide

Media	Micron Rating (μ)																					Food Grade*		Max of Temp	
PROflo	0.5	1	3	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
PE Polyester Felt																								135	275
PO Polypropylene Felt																								95	200
NX Aramid Fibre Felt																								190	375
PEF Polyester Felt-Food Grade																								135	275
PROflo+	0.5	1	3	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
PEXL Polypropylene Extended Life Felt																								135	275
POXL Polyester Extended Life Felt																								95	200
PEXLF Polyester Extended Life Felt- Food Grade																								135	275
FORMflo	0.5	1	3	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
PE Polyester Felt																								135	275
PO Polypropylene Felt																								95	200
NX Aramid Fibre Felt																								190	375
PEF Polyester Felt-Food Grade																								135	275
PEXL Polypropylene Extended Life Felt																								135	275
POXL Polyester Extended Life Felt																								95	200
PEXLF Polyester Extended Life Felt- Food Grade																								135	275
NETflo	0.5	1	2	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
PEM Polyester Multifilament Mesh																								135	275
NMO Nylon Monofilament Mesh																								135	275
NMOF Nylon Monofilament Mesh-Food Grade																								135	275
PPMO Polypropylene Monofilament Mesh																								95	200
PUREflo	0.5	1	2	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
POMF Polypropylene Microfibre																								95	200
Clearflo	0.5	1	2	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
POMB Polypropylene Felt and Microfibre																								95	200
PSORB Polypropylene Oil Adsorbent Core																								95	200
OWS Oil/Water Separator																								95	200
500 S Multi-Layer Polypropylene (523,525,527,529)																								95	200
ECOflo	0.5	1	2	5	10	25	50	100	125	150	200	250	300	400	500	600	800	1000	1200	1500	3000	FDA	EU	°C	°F
POE Polypropylene ECOfelt																								95	200
PEE Polyester ECOfelt																								135	275

* Made from FDA compliant resins (FDA 21 cfr 177) for food contact

EU certification refers to EU directive 2002/72/EC for plastic materials for food contact

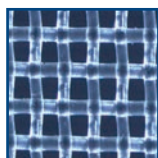
Other sizes and configurations are available upon request

Some media subject to availability



CERTIFICATIONS

In House Laboratory



Capabilities

The IFM laboratory was created to support the production and sales departments as well as enhance R&D initiatives. Assessment tools include microscopic evaluation capabilities, strength and tensile testing, silicone testing, media evaluation testing. In addition, IFM's lab is equipped with a bench scale test unit which allows comparative assessments of filtration media and products.



Full Scale Testing

In addition to its laboratory capabilities, IFM has developed an in-house full scale closed loop filtration system to support

customers in the testing of new and existing products. The unit consists of a holding tank, a recirculating pump as well as metering pumps for continuous particulate loading through a full-sized filter housing. Testing capability of the unit includes comparative evaluations of clean pressure drop, dirt loading and weld/seam strength.



Silicone Testing

The presence of silicone in paints and finishes can seriously impact product quality. As part of its commitment to maintaining a silicone free facility, IFM's quality assurance lab has developed the capability in-house to perform evaluations for the detection of silicone in raw materials and filtration products.



COMMITTED TO QUALITY, CONTINUOUS IMPROVEMENT, AND OUR CUSTOMERS



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CERTIFICATIONS



Food Contact

A series of IFM product offerings include filtration products made from FDA compliant media for food grade applications. (FDA 21 CFR 176.170 and CFR 177.15)



EU Certification

A selection of IFM's filtration products have been tested to certify compliance with European Regulation EC1935/2004 Directive 2002/72/EC for food contact (Updated to EU No 10/2011)



Silicone-Free Policy

IFM has maintained a silicone-free manufacturing facility for over 35 years. We ensure all suppliers and internal processes comply with our strict silicone-free policy. Our internal lab testing includes the verification of silicone-free status.



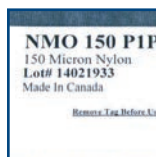
Quality Assurance

IFM understands the importance of dependable filtration products. To ensure the consistent quality of its products, IFM has developed its own specialized quality control system.

Quality

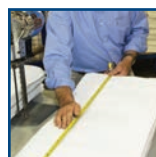


Quality at IFM begins with the receipt of our raw material. We use only the best, most consistent felts and meshes. Filter media and components are checked upon receipt to ensure they meet specifications prior to production.



Every IFM order is assigned a unique batch lot number that accompanies the order through production. This lot number is recorded onto finished bag labels and is directly linked to production information

pertaining to the specific order. This quality control system allows IFM to trace the history of every order produced from raw materials through to the finished product and provides customers with the security and traceability they demand.



In addition to full product traceability, IFM production staff is trained with a focus on quality. Production staff receives extensive manufacturing training as well as instruction on IFM's quality system and standards.





Thank you

All of us at IFM would like to extend our sincere appreciation for your confidence in our product and continued business. We understand the connection between our success and yours. We look forward to the next opportunity to be of service.

Sincerely,
The IFM Team

**We invite you to find out more about IFM and our people and products by
visiting us online**

 www.liquidfiltration.com



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USERS GUIDE

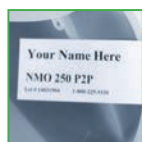


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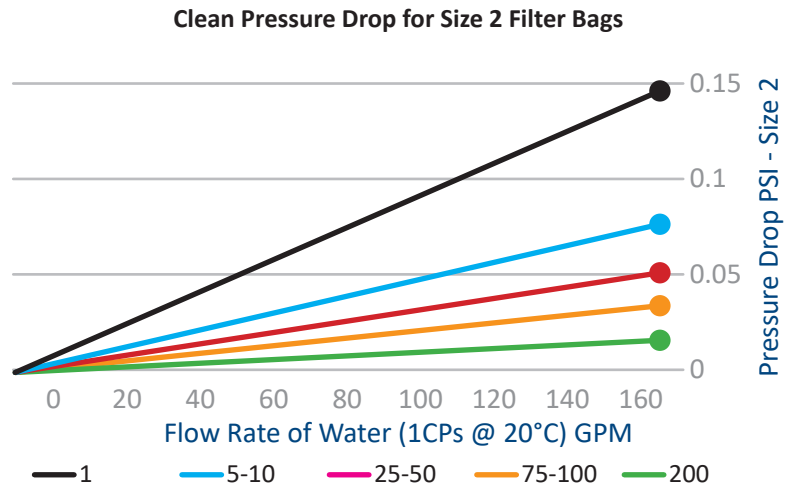
USERS GUIDE



The clean pressure drop through a standard size filter bag can be determined as follows:

Step 1:

Refer to the graph "Clean Pressure Drop for Size 2 Filter Bags". Select the desired flow rate and follow the vertical line to where it intersects with the required micron rating. Draw a horizontal line from the point of intersection over to the Pressure drop axis. The resulting value is the pressure



Step 2:

Correct for bag size if the filter is not a standard size 2. Using Table 1: Bag Size Correction, determine the size correction factor and multiply it by the pressure drop value determined in Step 1

Table 1: Bag Size Correction		
Bag Size	Dimensions	Correction Factor
1	7" Diameter x 16.5"	2.25
2	7" Diameter x 32"	1
3	4" Diameter x 8"	9
4	4" Diameter x 14"	4.5

Step 3:

Correct for viscosity if the process fluid viscosity is greater than 1 CPs. Using Table 2: Viscosity Correction, select the correction factor based on the process fluid viscosity and multiply it by the value determined in Step 2. The resulting value is the clean pressure drop across the filter bag.

Table 2: Viscosity Correction	
Viscosity in CPs	Correction Factor
50	4.5
100	8.3
200	16.6
400	27.7
800	50.5
1000	56.2
1500	77.2
2000	113.6
4000	161.0
6000	250.0
8000	325.0
10000	430.0