# FILTER BAG Design Details

Standard Filter Bag Types

**RING TOP BAGS** are stocked in sizes 1, 2, 3, 4, 8, 9 & 12 with galvanized steel, rings.

# MOLDED ROSEDALE TOP BAGS are

stocked with polypropylene tops in sizes 1, 2, 3, 4, 8 & 9.

HANDLES are standard on all bags.

**ALL STANDARD STOCK BAGS** have sewn construction.

### **FILTER BAG FINISH**

Felt filter bags are supplied with a glazed finish to reduce fiber migration. Mesh filter bags are supplied with a plain finish as woven.

Microfiber filter bags have spunbonded covers to prevent fiber migration.

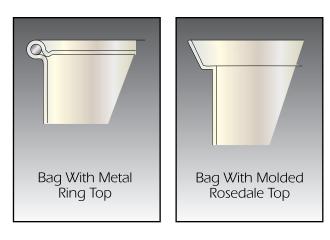
### **CONSTRUCTION**

Standard filter bags are typically manufactured with a metal ring, either galvanized carbon steel or stainless steel, sewn in the top of the filter bag. Woven fabric handles are also sewn.

Another design incorporates a molded plastic top. These tops typically are polypropylene or polyester with molded lifting handles. Various types of tops are available to fit specific manufacturers' housings.

#### **All Welded Construction**

All seams and the collar are sonically welded, enhancing filtration quality, eliminating leaks and bypass that may have occurred with sewn seams.



Nominal Micron Rating- 50%	High Efficiency Micron Rating- 95%
1	35
5	48
10	55
25	65
50	70
100	110
200	200

# Felt Filter Bag Micron Rating

For years filter bag manufacturers have used nominal ratings, i.e., about 50% efficiency for polyester and polypropylene felt filter bags. The table gives the micron ratings at about 95% efficiency.

# Filter Bag Pressure Drop

#### The graphs give the clean pressure drop through a number 2 size bag for water, 1 CPS @ 68°F

To determine the pressure drop caused by the filter bag, follow these steps:

**Step 1** Select the type of bag, micron rating and flow rate, determine the pressure drop for water, 1 cps @ 68°F, for a size #2 bag.

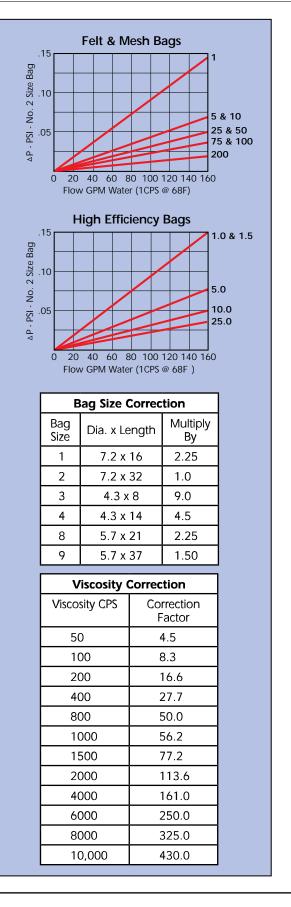
**Step 2** Correct for bag size from the Bag Size Correction table at the right if the bag size is different than a #2 size.

**Step 3** If the viscosity of the liquid is greater than 1 cps (water@ 68°F.),multiply the result from step 2 by the proper correction factor from the Viscosity Correction table at the right.

The value obtained in Step 3 is the clean pressure drop caused by the filter bag.

#### **SUMMARY**

For new applications, the clean pressure drop of the system, housing and bag should be 2.0 PSI or less. The lower the value is, the more contaminant a bag will hold. For applications with low dirt loading, this value can go to 3.0 PSI or more. Consult the factory for recommendations when the clean pressure drop of the system exceeds 3.0 PSI.



STANDARD FILTER BAG DESIGN DETA	ILS
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Construction Fiber	<b>File en</b>		Available Micron Ratings																		
	Fiber	1	2.5	5	10	20	25	30	40	50	75	100	150	200	250	300	400	600	800	1000	1500
	Polyester																				
Felts	Polypro- pylene																				
Multifilament Meshes	Polyester																				
Monofilament Meshes	Nylon																				
High- Efficiency Microfiber	Polypro- pylene																				
Oil Removal	Polypro- pylene																				

Size	Diameter (Inches)	Length (Inches)	Area Ft <sup>2</sup>	Metal Ring Type	Available In Sizes	Molded Rosedale Type	Available In Sizes
1	7.2	16	2.0				
2	7.2	32	4.5	Fits Housings Brands: Rosedale		Fits Housings Brands: Rosedale	
3	4.3	8	0.5	Krystil		Strainrite	
4	4.3	14	1.0	Strainrite Micron Technologies		Micron Technologies	
5	6.1	20	2.8	Filtration Systems			
7	5.7	15	1.5	Parker "G <sup>®</sup> Style Eaton Filtration			
8	5.7	32	3.0	Others			
9	5.7	32	3.0				
12	8.4	34	5.5				

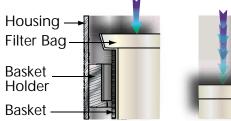
STANDARD FILTER BAG DESIGN DETA	ILS
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<b>FELT</b> filter bag materials are made from synthetic fibers in polypropylene or polyester. The proper combination of fiber diameters, weights and thickness results in an economical depth type filter media. Polypropylene and polyester bags are suppled with a glazed finish to reduce fiber migration. These bags have a nominal micron rating. Filter efficiency is about 50%.	Clean Fluid Glazed Outer Finish Depth Felt Filter Media Traps Dirt Particles
<b>MULTIFILAMENT MESH</b> materials are offered in polyester and are woven from threads made of small fibers twisted together. Bags made of this material are low cost and considered disposable. They have lower efficiencies than the monofilament mesh. Filter efficiencies are about 80%.	Clean Fluid
<b>MONOFILAMENT MESH</b> is offered in nylon and is a woven material. Each thread is a single filament The openings are square,. They have excellent strength and are considered to be cleanable. Filter efficiency is 90% or more.	<ul> <li>Operates on the principle of surface filtration</li> <li>Wide range of micron ratings</li> <li>Reusable or disposable</li> <li>Non-fiber releasing</li> <li>Good efficiencies</li> <li>High contaminant quantities under correct conditions</li> </ul>
MICROFIBER filter bags provide high efficiency and high contaminant holding capacity at low ratings. Bags are available in polypropylene. Filter efficiency is 95% or more. MICROFIBER polypropylene filter bags also can remove oil from water and other liquids. Optimized designs are called "OIL REMOVAL BAGS".	Inner Cover Microfiber Final Filter Outer Cover Spun Bonded

# **MOLDED ROSEDALE TOPS - POR STYLE**

Filter bags with molded Rosedale tops require no filter bag hold down devices. As the differential pressure in the application increases, the integrity of the seal improves. Polypropylene tops are standard with polyester optional for temperatures over 200°F, or for chemical capatibility.

THE MOLDED ROSEDALE TOP OFFERS THE BEST BAG-TO-HOUSING SEAL IN TODAY'S MARKETPLACE, IN ADDITION TO BEING THE EASIEST TO INSTALL AND REMOVE.



FILTER BAG WITH MOLDED ROSEDALE TOP JUST PRIOR TO INSTALLATION IN BASKET HOLDER FILTER BAG WITH MOLDED ROSEDALE TOP INSTALLED

IN HOUSING

# **OTHER BAG TYPES AND DESIGNS**

**500 SERIES 3M TYPE** multiple layer filter bags with microfiber filter layers and felt prefilter layers. Up to 5 layers of felt

**DOUBLE & TRIPLE LAYER** felt bags where the micron rating of the layers are designed to optimize service life.

**SPECIAL SIZE & DESIGN** bags are available in all materials and most micron ratings.

**OIL REMOVAL BAGS** require a special design to obtain to result in the largest surface area of fibers in a bag for maximum oil removal capacity. These are standard in micron ratings of 10 and 25.

## FILTER BAG HOLD-DOWNS

Adjustable filter bag hold-downs for Size #1 and #2 bags are available for side entry housings manufactured by:

#### Filter Specialists, Inc. / Micron Technologies / Krystil Klear / Strainrite / Other Side Entry Brands

Available in polypropylene, they provide additional positive filter bag hold-down capabilities for critical applications where necessary. It is suitable for ring top bags and bags with molded plastic tops. It is necessary for many bags with molded tops and ring bags if the bag manufacturer improperly designs and manufactures them.

A FILTER BAG HOLD-DOWN IS NOT REQUIRED WHEN USING FILTER BAGS WITH MOLDED ROSEDALE TOPS.

# **How To Order** Build an ordering code as shown in the example

Example: PE - 25 - G - 2	2 - POR - WE					
MATERIALS & MICRON RATING Beta = BB Microns = 1, 10, 12	BAG CONSTRUCTION WE = Welded Construction No Symbol = Sewn					
Polyester Felt       = PE         Microns       = 1/2,1,5,10,25,50,100,200         Polypropylene Felt       = PO         Microns       = 1/2,1,5,10,25,50,100,200         Debugter Multifilement Mask       DEM	BAG STYLES S = Galvanized Carbon Steel Ring S-SS = 304 Stainless Steel Ring POR = Molded Polypropylene Rosedale Top PER = Molded Polyester Rosedale Top					
Polyester Multifilament Mesh = <b>PEM</b> Microns = <b>100</b> , <b>150</b> , <b>200</b> , <b>250</b> , <b>300</b> , <b>400</b> , <b>600</b> , <b>800</b> , <b>1000</b> , <b>1500</b> Nylon Monofilament Mesh = <b>NMO</b> Microns = <b>25</b> , <b>50</b> , <b>75</b> , <b>100</b> , <b>150</b> , <b>200</b> , <b>250</b> , <b>300</b> , <b>400</b> , <b>600</b> , <b>800</b> , <b>1000</b>	BAG SIZES (Inches) Dia. x Length 1 = 7.2 x 16 2 = 7.2 x 32 3 = 4.3 x 8					
Polypropylene Microfiber         = POMF           Microns         = 1.0, 2.5, 5.0, 10.0, 25.0           Polyester Microfiber         = PEMF           Microns         = 1.0, 2.5, 5.0, 10.0, 25.0	$ \begin{array}{rclrcrcrcrcrcrcrcrcrcl} 4 & = & 4.3 & x & 21 \\ 7 & = & 5.7 & x & 15 \\ 8 & = & 5.7 & x & 21 \\ 9 & = & 5.7 & x & 32 \\ 12 & = & 8.4 & x & 34 \\ \end{array} $					
Oil Removal = OR Microns = 10.0, 25.0	BAG FINISH G = Felt - Glazed or Singed P = Polyester					