PROGAF™

The Filter Bag that Works Better Than a Filter Cartridge

The SENTINEL plastic step-ring seal provides a seal between the filter vessel and the PROGAF Filter Bag. As the pressure differential rises inside the vessel, the seal becomes more efficient.

PROGAF filter bags bring a new, high-performance alternative to applications requiring absolute filtration. PROGAF filter bags' progressive density depth filtration delivers high efficiency (up to 99.98%) and long life with all the convenient features of a bag filter. In comparison with other filtration technologies, PROGAF filter bags deliver lower operating costs while retaining the ease of change-out typical of a bag filter.

Welded Construction for Superior Performance

All PROGAF High Performance Filter Bags feature 100% welded construction for better filtration performance. This construction ensures that nothing bypasses the process media through holes in the fabric created from sewing the material. Eaton's proprietary welding technology produces a super-strong seam that stands up to the most demanding applications.

PROGAF™ Filter Bags Seal Better in Critical Applications

The patented SENTINEL® ring provides a flexible, chemically-resistant seal which adapts to any filter vessel. This unique design employs a pressure-activated sealing lip which responds to increases in differential pressure. As the pressure increases, the seal of the ring improves, guaranteeing bypass-free performance over all ranges of pressure, temperature and micron rating. The elevated bag handles make removal quick and easy.

Unique Progressive Density Media Structure

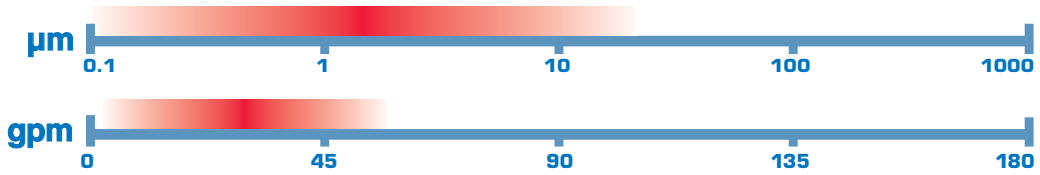
PROGAF filter bags utilize an advanced media structure developed specifically to deliver both long life and absolute filtration. PROGAF filter bags' progressive density design uses up to 12 layers of media which become finer and finer as fluid passes through. The result is a gradual removal of con-

PROGAF™ Filtration Ratings

Filter Model	Particle Size at Common Removal Efficiencies (µm)					ΔP (psi) Size 02 @ 45 gpm
	>60%	>90%	>95%	>99%	>99.9%	
PGF 50	-	-	.15	.45	1	3.6
PGF 51	>80@0.15	.3	.45	.5	2	2.5
PGF 55	1	3	6	10	12	0.9

Filtration efficiency confirmed by independent test laboratory

ABSOLUTE



taminant without any single layer blinding prematurely. Application and laboratory tests confirm that PROGAF bag filters deliver longer service life and lower operating costs than any other renewable filter element. The 100% polypropylene construction provides pure, silicone-free materials in an economic, self-contained, easily disposable filter bag.

Filtration Efficiencies of Up to 99.9%

PROGAF High Performance Filter Bags have performance efficiencies of up to 99.9%…true absolute filtration. In many filtration applications of one micron and above, PROGAF Filter Bags can replace expensive cartridge filtration systems and provide better performance while saving time and money. Ask your Eaton Filtration Specialist for "real world" documented case histories, illustrating how PROGAF Filter Bags have performed in applications similar to yours.

The PROGAF™ Filter Bag Difference

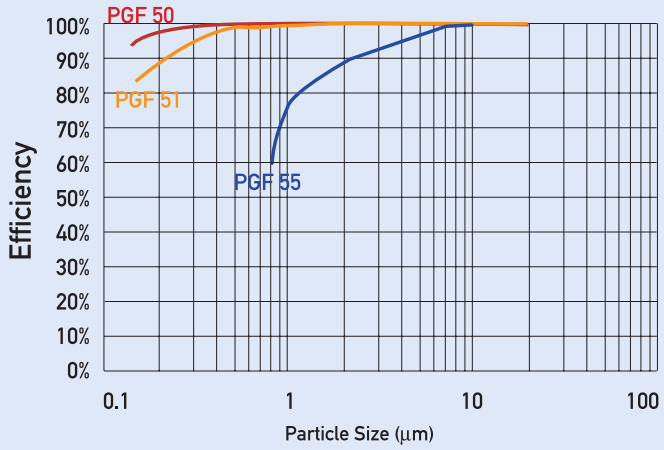
Ordinary standard filter bags are made from needled felt media that has a fiber structure not as fine and precise as the filtration grade melt blown media used for PROGAF Filter Bags. The needled fibers are much larger in size and spaced much further apart, yielding a lower efficiency. PROGAF Filter Bags have been designed to deliver calibrated fractional efficiency on very small particles, down to less than one micron. The bags feature a completely welded construction and the unique, patented SENTINEL® Sealing Ring for a positive by-pass free seal. And all PROGAF Filter Bags have a round bottom shape for increased pressure stability.

Unique layered construction structure

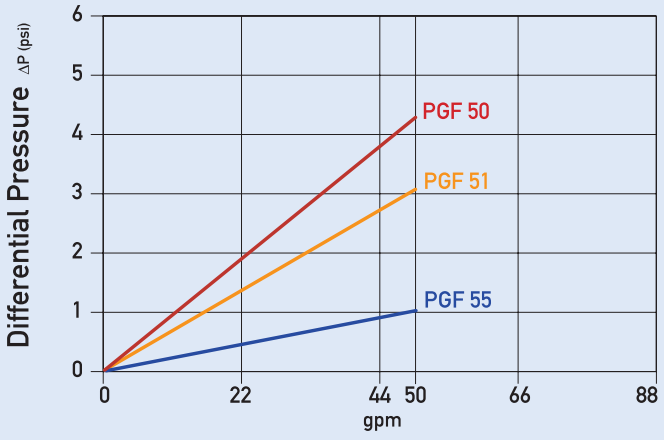
Choose Just the Filtration Efficiency Your Application Needs

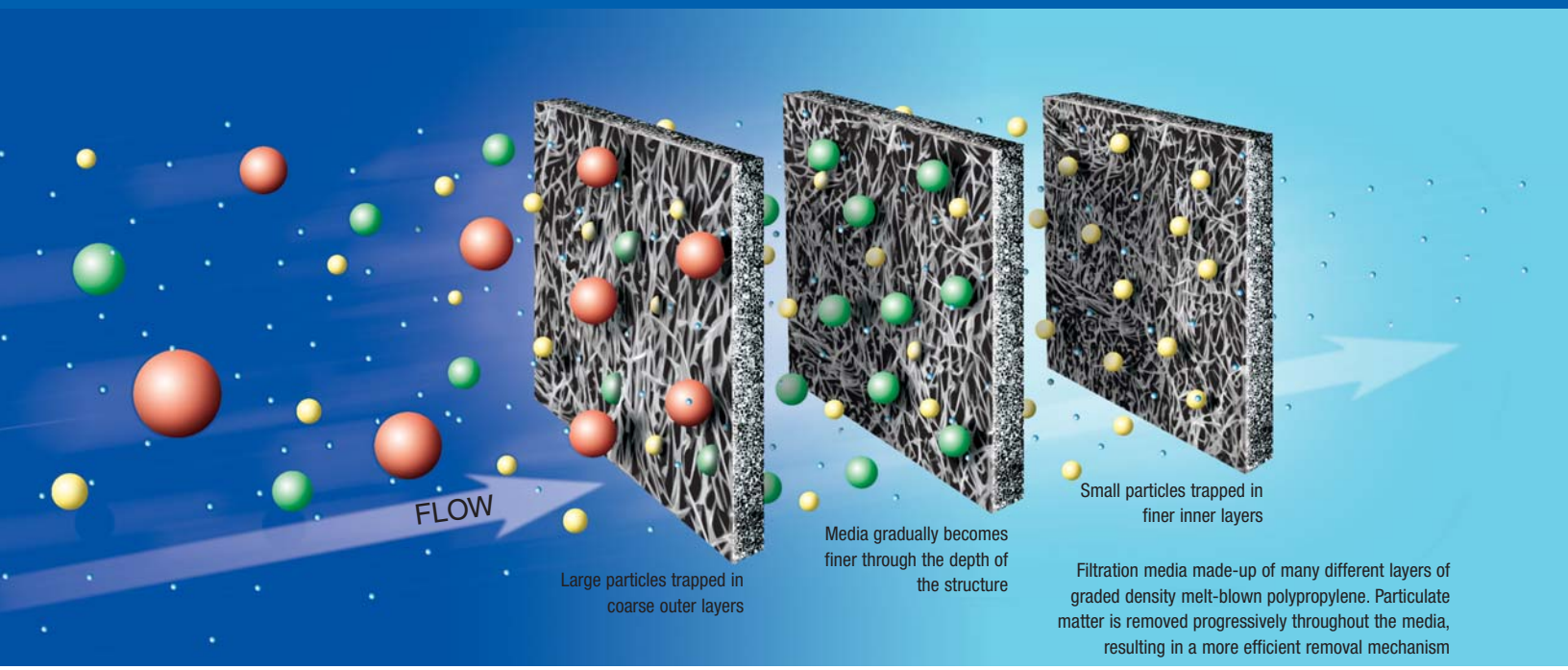
PROGAF Filter Bags are available in efficiency codes of 50, 51, and 55. To select the perfect PROGAF Filter Bag for your application, choose the micron retention efficiency level you need on the left side of the chart at particle size in microns at the bottom. Next, locate the bag efficiency code (identified by the colored lines) that is closest to that point. There you have it: the most cost effective filter bag for your critical filtration application.

Fractional Efficiency of PROGAF™ Filter Bags
(ISO Fine in water at ambient conditions @ 90 gpm)



CleanΔP of PROGAF™ Filter Bags
(Water at ambient conditions)





Some Typical PROGAF™ Applications

All materials used in the construction of PROGAF Filter Bags, including the multilayer melt-blown polypropylene media, are FDA/EC listed materials that meet their requirements for food contact applications. But food or beverages are not the only applications that can take advantage of PROGAF's high filtration efficiencies and capacity retention. The pharmaceutical, micro-electronics, chemical, food, ink and paint, and water treatment industries can also use PROGAF High Performance Filter Bags.

Chemical and Pharmaceutical Industries

Demanding filtration in high-purity industries are the applications PROGAF was made for. Media capable of removal to 2 µm absolute with long service live is essential for activated carbon removal or catalyst recovery. Gel removal requires a deep matrix of fine fibers. A PROGAF bag is ideally suited for each of these applications. Available in four filtration ratings, one of the PROGAF bags will deliver just the needed performance.

Water Filtration

Water filtration applications have traditionally been dominated by cartridge filtration. Following extensive worldwide trials, PROGAF 51 has demonstrated a log 3.5 reduction of impurities in these demanding applications.

Micro-Electronics

These applications typically require chemicals that are constantly filtered to extremely low levels of particle contaminant. PROGAF's special profile, with its high efficiency media and graded density structure, provides performance characteristics superior to that of traditional cartridge type filtration. PROGAF out-performs cartridges in terms of dirt-holding capacity, service life, and cost. Membrane prefiltration significantly reduces the SDI values in water filtration.

Compare PROGAF™ to Filter Cartridges and See the Difference

The two charts on the next page graphically illustrate the advantages of PROGAF High Performance Filter Bags over different types of filter cartridges. PROGAF Filter Bags and filter cartridges come in many shapes and sizes. Compare PROGAF Filter Bags with their cartridge equivalent in material, micron rating and industry qualifications. Progressive structure of PROGAF filter bags delivers operating differential pressure which starts and remains lower during filter life than other comparable filters. The chart shown here illustrates the results of actual comparison tests made against two common styles of cartridge filters: depth-loading and pleated polypropylene. During laboratory loading tests, the PROGAF filters remained at the lowest differential pressure of any

of the three over the life, illustrating the effectiveness of the progressively structured media.

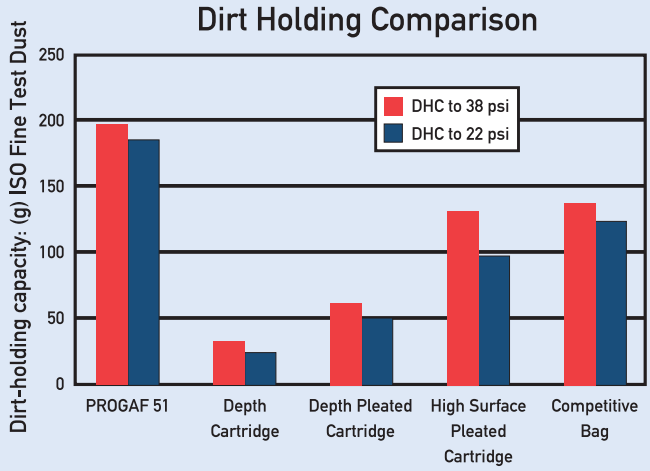
OPERATIONAL CONSIDERATIONS

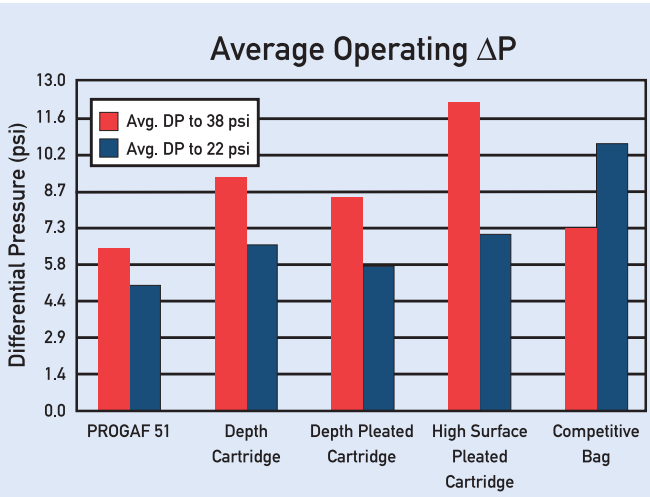
Bag Positioner

To ensure proper performance, PROGAF Filter Bags must be used with the Eaton Bag Positioner. Using them together aids bag insertion into the filter housing and assures correct alignment of the bag inside the restrainer basket, preventing the bag from being pushed out of the restrainer basket in case of reverse flow, and makes bag removal easier.

Pre-Wetting in Aqueous Solutions

PROGAF filter bags are fabricated from fine polypropylene filtration media. This material is hydrophobic, which means that water will not wet the surface of the fibers. Therefore, a fluid with lower surface tension must first be used to wet the fibers, as well as cartridge filters made from this material. Prior to installation, you must first immerse the bags for a few minutes in a wetting solution compatible with the process fluid. After the fibers are wet, water is drawn in by capillary action. Full details about how to install and pre-wet PROGAF Filter Bags are provided in the installation instructions.





PRODUCT CODES

PROGAF™		E - Mesh Cover		E-PP Sentinel® Ring		Bag/Box 04 Box Size (in.) 32 x 12 x 14
PGF	51	E	02	E	0	04X
Bag Material	Micron Rating µm	Bag Cover Layer	Bag Size	Collar/Ring Type	Bottom Shape	Packaging
	PROGAF™ Range 50 51 55		Code 02 Size 7 x 32 inches Area 5.2sqft		Round Bottom	