

Comparison of Eaton Filter Bag Models

By: Chris Pasquali, CEO Factory Direct Pipeline Products, Inc.

A quick Google search for filter bags results in dozens of websites and a range of pricing, how does a customer make a selection? This article provides a quick overview of Eaton's eight designs to help customers better understand their options within the Eaton product line and comparison to other brands.

When you Google "filter bags" it lists 176 million results, although you only need to scroll through the first two dozen results to find descriptions and pricing; filter bags are being mostly marketed as a commodity and sold on price, with only more critical applications scrutinizing filter bag design.

Seven of the first ten sites I accessed were shopping cart style webpages using a generic filter bag picture, brief description, price per bag and "add to cart button". I decided to compare the cost and descriptions provided for a #2 size polyester felt filter bag with polypropylene crush seal ring with 100 μ nominal retention using welded seam construction. Pricing ranged from an extremely low \$3.77 each to a high \$12.85 each. It is notable that Eaton is one of the highest priced options but comparing the data provided by each site it is not easily ascertained why there might be such a large discrepancy in pricing. Our previous articles related to filter bag efficiency ([Surface vs. Depth Filtration](#)) and design ([How to choose a filter bag?](#)) only touch upon important

BRAND	PRICE
CARY CO	\$3.77
FILTERBAG.COM	\$5.14
PRM	\$6.30
ROSEDALE	\$7.35
AMAZON	\$7.40
EATON	\$9.25
GRAINGER(PARKER)	\$12.85

filter bag characteristics and link them to Eaton designs. Most websites simply offered sorting features with no overview of options, with a few offering a "standard" and "high efficiency"

grouping; none provided a layman's overview of available designs and features to not only guide a customer towards the most applicable design but also empower them to evaluate less costly designs with the goal of choosing a filter bag that provides the best value.

Eaton's Least Expensive Filter Bags

The SNAP-RING and UNIBAG models are essentially the same in terms of efficiency and cost, with the UNIBAG being made from recycled materials and having both a welded construction and crush ring seal (a seal characteristic of higher efficiency filter bags). These are best suited for retention of particles larger than 25 μ when the particle load is not high. Felt material filter bags provide a degree of depth filtration although the SNAP-RING and UNIBAG models are made of thinner materials than Eaton's other filter bags, hence they are used when the particle load for the targeted retention size is relatively low.

Monofilament and multifilament mesh material SNAP-RING filter bags only provide surface filtration.

Industrial Performance Filter Bags

The SENTINEL and DURAGAF filter bags are made from thicker felt material, increasing their depth filtration and overall particle load retention. Before the UNIBAG, the SENTINEL filter bag was the entry level filter bag having a welded seam and crush seal design. SENTINEL filter bags are made from virgin raw materials and this is our single most popular style filter bag. DURAGAF filter bags are the same except manufactured from even thicker felt and this increases the particle handling capacity by 3 to 5 times! DURAGAF filter bags cost about 2 times the cost of SENTINEL filter bags, however the annual cost savings associated with fewer filter bag changes hopefully offsets the higher filter bag unit cost.

As an example, if you use 125 SENTINEL filter bags monthly (1500 annually), the amount of DURAGAF filter bags required might only be 300 - 500 annually. It depends upon your operation but usually there are savings associated with reduced filter bag changing, such as:

1. Less labor
2. Reduced *product loss due to carry-out*
3. Increased safety for personnel due to less exposure to the liquid and less lifting
4. Less downtime

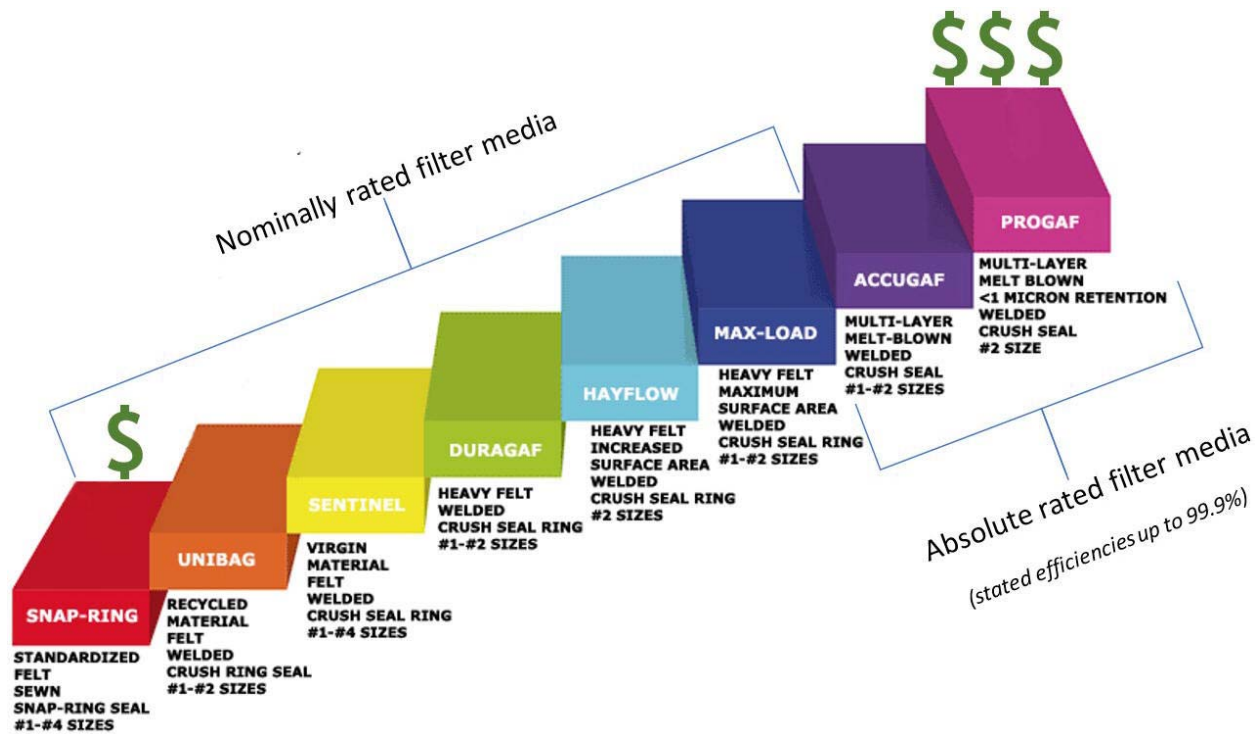
Special Filter Bag Designs

The balance of Eaton's filter bags have a specific purpose or characteristic. The HAYFLOW filter bag is a clever design which requires a special restrainer (support) basket. HAYFLOW filter bags are made as a DURAGAF with about 70% more material, increasing the particle load handling capability. Another way of looking at this is that HAYFLOW filter bags increase your overall flow rate capacity due to the extra material used in their design. Therefore you would use this style filter bag when minimizing exposure to the liquid and reduced down time are priorities or when you have a high particle load and want to minimize the frequency of filter bag changes. In some situations you may be able to reduce number of filter bag chambers required.

The MAX-LOAD filter bag is akin to a filter bag and filter cartridge hybrid with its pleated and rigid design, increasing surface area and maintaining its ideal shape. These are often used when the process liquid is hazardous and thus it is a priority to minimize exposure to personnel. If you have limited

Comparison of Eaton Filter Bag Models

By: Chris Pasquali, CEO Factory Direct Pipeline Products, Inc.



personnel and want to absolutely minimize the frequency of filter bag changes, MAX-LOAD filter bags are for you!

CLEARGAF, LOFCLEAR, ACCUGAF and PROGAF filter bags

These filter bags are used for specific applications and the most demanding, finest particle retention possible with filter bags. The CLEARGAF models are marketed for applications requiring FDA compliance and they are a nominally rated filter bag design based upon the SENTINEL and DURAGAF models.

LOFCLEAR, ACCUGAF and PROGAF filter bags are all absolute rated for their retention, meaning they have a specified efficiency up to 99.9% for the targeted particle size to be retained. They have a multi-layer design and complex crush seal ring to ensure zero bypass of particles as fine as 0.45 microns! The LOFCLEAR filter bags are used for automotive and other coating applications sensitive to tramp oils. There is also a version designed for removing deformable, gel-like solids with an absolute retention efficiency.

ACCUGAF filter bags target particles from 1.5 μ to 10 μ with absolute efficiency whereas the PROGAF is used for 0.45 μ and 0.5 μ size particles; only the purest fluids and demanding applications require these types of filter bags.

Comparing Filter Bag Brands

It is nearly impossible to compare different brands of "nominally rated" filter bags based upon catalog pages alone because each

manufacturer uses different material thicknesses and fiber size/density specifications. There is no universal definition of particle retention efficiency for "nominally efficient" filter bags; each manufacturer determines the acceptable range of particle retention efficiency for a given filter bag design and therefore only absolute rated efficiency filter bags can be easily compared. Thus, prior to switching filter bag manufacturers you should obtain no-charge sample filter bags to gauge their efficiency compared to what you have been using. Eaton's nominally rated filter bags seem to be more efficient than other brands and therefore instead of using a 10 μ bag from manufacturer "X" Eaton's 25 μ filter bag might suffice. An example of nominal efficiency and how it can be confusing: a 1 μ nominally rated filter bag might be 60-70% efficient for 1 μ and 99% efficient for 25 μ .

Another factor to consider is product consistency. A large and bureaucratic company like Eaton has well documented and tightly controlled quality control procedures ensuring product consistency. Surely distributors of filter bags can source from other countries and sell for less cost, but much is not known about the quality control procedures used in sourcing raw materials and manufacturing. In short, you get what you pay for and if the pricing looks too good to be true, there's likely a reason why. Leverage Eaton's resources and our decades of field experience to help you determine which style filter bag is the best value for your application!