



# U.S. Air Filtration, Inc.

## How To Choose the Correct Dust Collector Filter

### Step 1 - Dust Collector Filter Material Selection

How to choose the right filter media for your application? You should choose the media from which your filter bags will be constructed based on the type of application they will be used for. Take the following things into consideration prior to selecting your media:

- Temperature - do your bags need to withstand extreme temperatures
- Product - what are you filtering
- Chemistry - can your bags withstand the chemical make up of the dust particles
- Resistance- is the filter media able to resist the wear and tear of the dust particles

Choosing the correct filter media is an important and sometimes difficult process. To assist you in the identification of the right media for your bags, keep the following in mind. Filter bag performance is directly related to how well it can tolerate the environment in which it is being used. How efficiently it can remove the dust particles from its fabric, its ability to be cleaned by the dust collector. You must first learn to identify the type of filter media currently used in your application.

Below you will find a list of typical construction methods:

- Woven felts
- Non-woven felts
- Natural fibers
- Synthetics (Thermoset or Thermoplastics such as Polypropylene "PPRO" - Polyphenylene sulfide "PPS" - Polyester "PE")

For additional information on media types please examine our Filter Fabrics Chart below. A simple test to determine if a material is a thermoplastic is to take a small swatch and put a flame to it. A thermoplastic material will begin to melt when exposed to direct heat. The selection criterion eliminates materials based on temperature and chemical characteristics. The first cut is usually made based on temperature. Then the chemical characteristics of the gas stream are considered to further refine the search. Next, the efficiency of the material further dictates the construction of the material i.e. ? the weight ? oz/sq. ft., fiber and surface treatments/membranes. Last but not least, if there are still two or more candidates it comes down to a price versus performance trade off.

### Step 2 - Dust Collector Filter Measurements

Accurate measurements lead to the best fit. Most dust collectors have been upgraded over the years due to the need for new permits which called for reconfiguration of the bag house in which case OEM configurations will not fit. Because of this you will need to obtain accurate measurements for your filters before ordering replacement filter bags. If you currently have filter bags installed that are functioning properly, you can pull out one of those bags to get the proper measurements for your replacement order. A spare bag that has not been used yet can also be measured if available. However verify the bag measured is the same as the bags currently being used in the dust collector. If you are removing a used bag to measure, please be sure to use all necessary

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precautionary measures set in place prior to removal i.e. gloves, protective garments and respiratory equipment if needed. It is best not to pull the numbers off the unit because of possible changes to the configurations. Of course the best solution is to mail us a new or used bag that can be used a guide sample.

### Step 3 - Top and Bottom Construction

The top and bottom construction of a filter bag involves a variety of possible configurations. The type of cleaning process used by the dust collector determines which configurations will be used in the design of the filter bag. The most common types of dust collectors are "Pulsejet" "Shaker" "Reverse Air". The chart below can help you identify which type of dust collector filter you use.

#### Filter Configurations Chart

Pulsejet Dust Collectors (Reverse jet) - found in almost every industrial environment. They are by far the most popular design and are seen in nearly all industry segments.

Typical Top Configurations	Typical Bottom Configurations
Double-Beaded Snap Ring	Double-Beaded Snap Ring
Snap Band	Snap Band

Shaker Dust Collectors (Mechanical Cleaning) - usually found in business critical applications where unscheduled down time will shut down an entire plant.

Typical Top Configurations	Typical Bottom Configurations
Loop Top	Corded Cuff with Clamp
Grommet Top	Double-Beaded Snap Ring
Strap or Tail Top	Snap Band
Metal Hanger or Cap	
Snap Ring	

Reverse Air Dust Collectors - usually found in very large air handling environments such as power and cement plants although they do have uses in a variety of industries.

Typical Top Configurations	Typical Bottom Configurations
Cap Top with Hook	Snap Band
Corded Cuff with Clamp	
Snap Band	

Universal Applications -

Typical Top Configurations	Typical Bottom Configurations
Snap Band	Snap Band
Raw Edge	Hem
Snap Band	Beaded Cuff
Loop Top	Over lock Disk
Grommet Top	Lockstitch Disk

## How To Choose the Correct Dust Collector Filter Cont'd

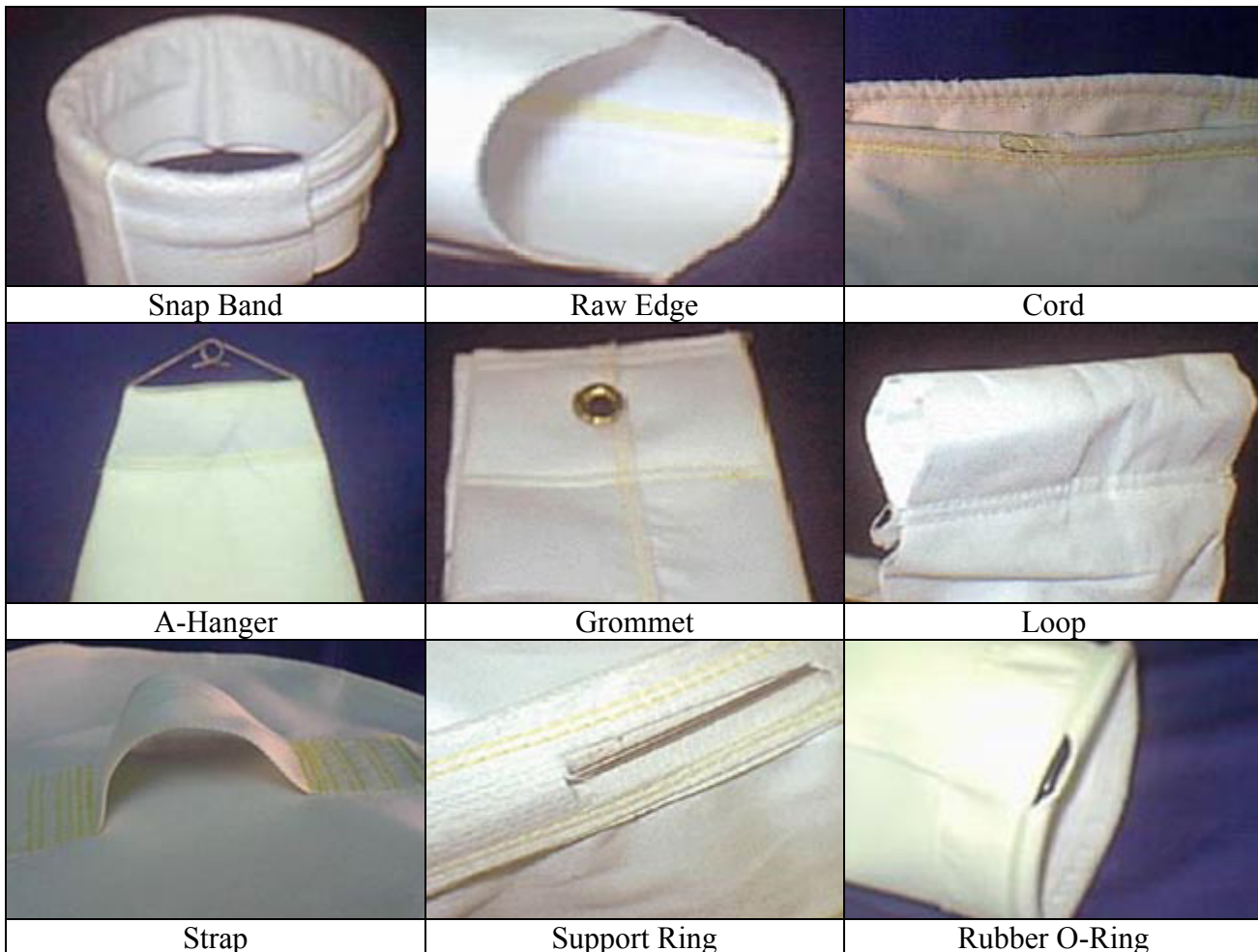
### Step 4 - Additional Options

**Ground Wires** - Use to comply with Factory Mutual requirements for static dissipation. Ground wire can be made from stainless steel or copper however this technique only works on a localized area of the filter. For optimal static dissipation look at conductive fiber filter made with Epiotropic or Stainless Steel fibers.

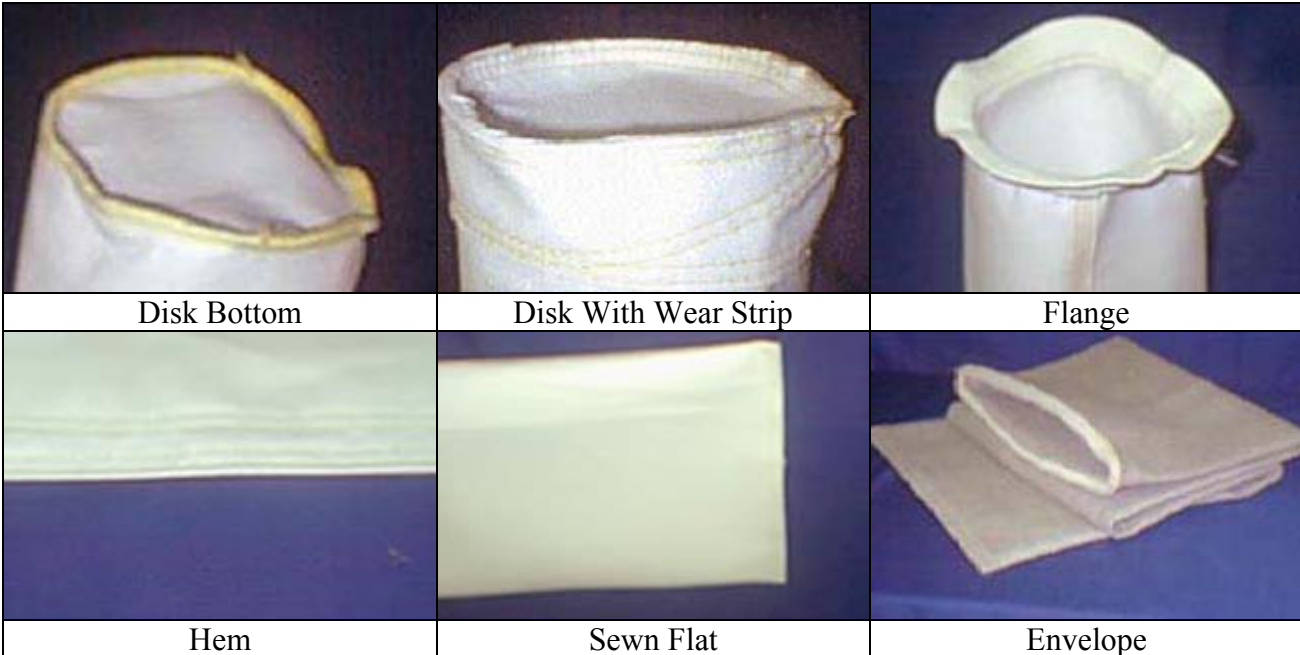
**Wear Cuffs** - Used to combat abrasion at the bottom of the bag either from sandblasting of the bags or bag-to-bag abrasion due to turbulence in the bag house. Usually 2 to 4 inches in length and made of a material similar to that of the body of the filter bag.

**Special Finishes** - There are many finish options that can be added to the filter media at the time it is manufactured. Please refer to the materials selection area for further details.

### Dust Collector Filter Configurations



## How To Choose the Correct Dust Collector Filter Cont'd



### Dust Collector Filter Fabrics

#### Dust Collector Filter's Most Popular Materials

Polyester Felt / Dacron®  
 Recommended continuous operation temperature: 275°F  
 Maximum (short time) operation temperature: 300°F  
 Supports combustion: Yes  
 Biological resistance (bacteria, mildew): No Effect  
 Resistance to alkalis: Fair  
 Resistance to mineral acids: Fair+  
 Resistance to organic acids: Fair  
 Resistance to oxidizing agents: Good  
 Resistance to organic solvents: Good  
 Available weights: 10 oz. - 22 oz.



## How To Choose the Correct Dust Collector Filter Cont'd

### Polypropylene Felt

Recommended continuous operation temperature: 190°F

Maximum (short time) operation temperature: 210°F

Supports combustion: Yes

Biological resistance (bacteria, mildew): Excellent

Resistance to alkalis: Excellent

Resistance to mineral acids: Excellent

Resistance to organic acids: Excellent

Resistance to oxidizing agents: Good      Resistance to organic solvents:

Excellent

Available weights: 12 oz. - 18 oz



### Combo Felt

Recommended continuous operation temperature: 210°F

Maximum (short time) operation temperature: 225°F

Supports combustion: Yes

Biological resistance (bacteria, mildew): Good

Resistance to alkalis: Good

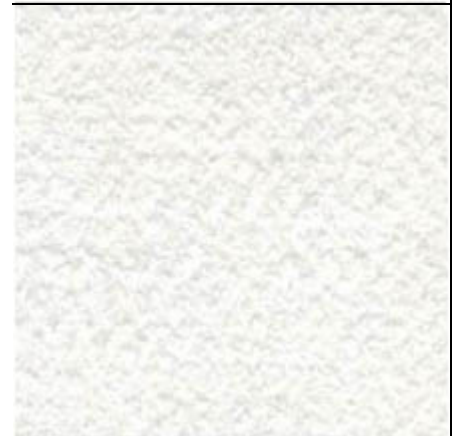
Resistance to mineral acids: Good

Resistance to organic acids: Good

Resistance to oxidizing agents: Good

Resistance to organic solvents: Good

Available weights: 12 oz. - 18 oz.



### Dust Collector Filter High Temperature Materials

Conex® / Nomex® Felt (Aramid)

Recommended continuous operation temperature: 400°F

Maximum (short time) operation temperature: 425°F

Supports combustion: No

Biological resistance (bacteria, mildew): No Effect

Resistance to alkalis: Good

Resistance to mineral acids: Fair

Resistance to organic acids: Fair+

Resistance to oxidizing agents: Poor

Resistance to organic solvents: Good

Available weights: 10 oz. - 22 oz.



## How To Choose the Correct Dust Collector Filter Cont'd

### P84® Felt Polyimide

Recommended continuous operation temperature: 475°F

Maximum (short time) operation temperature: 500°F

Supports combustion: No

Biological resistance (bacteria, mildew): No Effect

Resistance to alkalis: Fair

Resistance to mineral acids: Good+

Resistance to organic acids: Good+

Resistance to oxidizing agents: Good+

Resistance to organic solvents: Excellent

Available weights: 14 oz. - 18 oz.



### Ryton® Felt / PPS

Recommended continuous operation temperature: 375°F

Maximum (short time) operation temperature: 400°F

Supports combustion: No

Biological resistance (bacteria, mildew): No Effect

Resistance to alkalis: Excellent

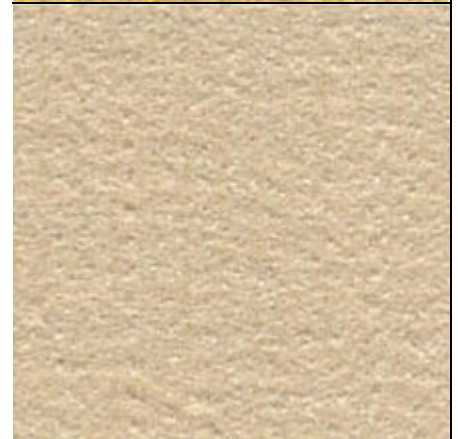
Resistance to mineral acids: Excellent

Resistance to organic acids: Excellent

Resistance to oxidizing agents: Fair

Resistance to organic solvents: Excellent

Available weights: 16 oz. - 18 oz.



### Dust Collector Filter Specialty Materials

### Homopolymer Acrylic Felt

Recommended continuous operation temperature: 250°F

Maximum (short time) operation temperature: 275°F

Supports combustion: Yes

Biological resistance (bacteria, mildew): Good+

Resistance to alkalis: Fair

Resistance to mineral acids: Good+

Resistance to organic acids: Excellent

Resistance to oxidizing agents: Good

Resistance to organic solvents: Good+

Available weights: 15 oz. - 18 oz.



## How To Choose the Correct Dust Collector Filter Cont'd

Epitropic Felt Antistatic  
 Recommended continuous operation temperature: 275°F  
 Maximum (short time) operation temperature: 300°F  
 Supports combustion: Yes  
 Biological resistance (bacteria, mildew): No Effect  
 Resistance to alkalis: Fair  
 Resistance to mineral acids: Fair+  
 Resistance to organic acids: Fair  
 Resistance to oxidizing agents: Good  
 Resistance to organic solvents: Good  
 Available weights: 14 oz. - 16 oz.



### Dust Collector Filter Woven Materials

Acrylic Cotton Fiberglass  
 Polyester Polypropylene Ryton® Nomex® / Conex®

### Additional Dust Collector Filter Bag Fabrics and Finishes

#### Filter Bag Fabrics

Aramid  
 Bean Knit (PE)  
 Copolymer Acrylic  
 Dacron  
 Duo Density P.E.  
 Epitropic - PE with blended carbon filters  
 Fiberglass  
 Gortex®  
 Gortex® Remedia® Catalytic Filter System  
 High Temp PE (RK-5)  
 100% Homopolymer Acrylic  
 Huyglass®  
 Nomex®  
 P-84  
 P-84/Homopolymer Acrylic  
 P-84/Nomex  
 P-84/PE  
 P-84/Ryton  
 P-84/Teflon  
 PE/Oleophobic  
 PE/PP Combo Felt  
 Polyester  
 Polypropylene  
 Ryton  
 Teflon

#### Filter Bag Finishes

Plain  
 Acrylic surf coat  
 Eggshell  
 Fibertaxis  
 Flame Retardant  
 Glazed  
 Gortex®  
 Micro coat  
 Mirror  
 Oleophobic  
 Portex  
 Silicon  
 Singed  
 Tetratex  
 10% Teflon B coating  
 Teflon emulsion - bath  
 201 T-snap band, bottom disc  
 202 SS ground wire  
 203 Wear Strip  
 210 T-raw edge, bottom disc  
 Copper and stainless steel ground wires