

FILTER SELECTION



midwesco
Filter Resources, Inc.

CHOICES

- Collector
- Element
- Media



COLLECTOR TYPE

- Reverse Air
- Pulse Jet
- Shaker



ELEMENT DESIGN

- Bags
- Cartridges
- Pleated Bags



SHAKERS

- No Cartridges
- No Pleated Bags



FILTER BAGS

- Felt
- Woven
- Membrane



REVERSE AIR

- No Cartridges
- No Pleated Bags



FILTER BAGS

- Glass
- Woven
- Membrane



PULSE JET

- Bags
- Cartridges
- Pleated Bags



BAGS

- Felt
- Glass
- Woven
- Membrane



PLEATED ELEMENTS

- Wet Laid
- Spun Bond
- Membrane



DESIRED RESULTS

- Efficiency
- Efficiency
- Efficiency



EMISSION STANDARDS

PM 2.5 IS
THE STANDARD.



VERIFICATION

EPA'S ETV TESTING AND POSTING



KEY FACTORS

- Temperature
- Chemistry



MEDIA PROPERTIES

Fiber	Available in	Tensile Strength	Abrasion Resistance	Chemical Acids	Resistance Alkalies	Support Combustion	Temperature **
Aramid	Woven / Felted	Very Good	Excellent	Fair	Good	No	375°F
Cotton	Woven	Good	Good	Poor	Good	Yes	180°F
Fiberglass	Woven / Felted	Excellent	Fair	Good	Fair	No	400°F
Homopolymer Acrylic	Woven / Felted Knit/Spun	Good	Good	Very Good	Fair	Yes	260°F
Nylon	Woven	Excellent	Excellent	Poor	Excellent	Yes	200°F
P-84	Woven / Felted	Very Good	Excellent	Very Good	Fair	No	500°F
PPS	Woven / Felted	Very Good	Excellent	Excellent	Very Good	No	375°F
Polyester	Woven / Felted Knit	Excellent	Excellent	Fair	Fair	Yes	275°F
Polypropylene	Woven / Felted	Excellent	Excellent	Excellent	Excellent	Yes	200°F
Teflon	Woven / Felted	Average	Fair	Excellent	Excellent	No	450°F
Wool	Woven / Felted	Poor	Fair	Good	Poor	No	200°F

*Maximum operating temperature. Temperature stability is adversely affected by moisture.



CONTRIBUTING FACTORS

- Size
- Loading
- Moisture
- Abrasion



ATTAINMENT

COLLECTOR OPERATION PARAMETERS



OPTIMUM COLLECTOR OPERATIONS PARAMETERS

Outlined below are some basic collector operating parameters for pulse jet collectors using elements with **Non-Woven Spun Bond** (all finishes) or **Conventional Felted Media**:

Pressure	90 PSI – 100 PSI
Frequency (off time)	20 Seconds*
Duration (on time)	Maximum 150 milliseconds



Glossary

- **Reservoir:** Requires an unrestricted air supply at least the diameter of the blowpipes and needs to be big enough for valve's demand. Ideal conditions will leave the reservoir at 85% of the operating PSI after firing.
- **Cleaning Air:** Needs to be clean and dry, which could be accomplished with an air dryer. In-line traps/separators can catch a lot of problems in the air supply prior to getting to the collector.
- **Pulse Frequency:** Frequency should be adjusted to balance the collector's delta P and should be monitored frequently during the first seven days after start up. Pulsing frequency can never be any faster than the reservoir recovery to operating PSI.



Operating Conditions

- **Pulse Sequence:** Needs to be staggered to maximize the distance between the newly cleaned row and the next row to be pulsed.
- **Hopper:** Should not be used for storage. Evacuation equipment (rotary valves, screw conveyors, etc.) should be sized to unload hopper before accumulation occurs. Units with slide gates should be left open and equipped with drum adapters.



Conclusion

- These are general operating parameters. Some collectors operate successfully under much more marginal settings and some collectors fail under more conservative settings. These recommendations are good starting points, but every collector and application has unique operating conditions.



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