

# Fabric Filtration Innovations & O&M

**Advances in Emission Control and Monitoring  
Technology for Industrial Sources  
Exton, PA  
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# Driving Forces for Innovation

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- Regulatory Requirements
- Energy Costs
- Process Modifications
- Life Extension
- Maintenance Costs



# Cleaning Technology

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- Pulse Jet – Standard Bags
- Pulse Jet – Pleated Elements
- Reverse Air
- Sonic & Sonic Assist



# Fabric Modifications

- Heavier Fabrics
- Multi-denier Fibers
- Scrimless Fabrics
- Surface Treatments



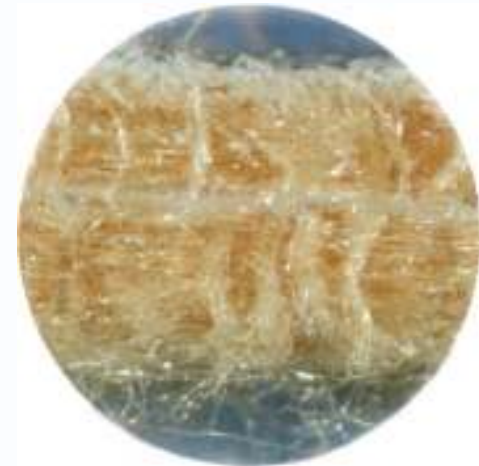
# Heavier Fabrics



- 18 and 22 oz/yd<sup>2</sup>
- Increases density of the fiber material which leads to lower permeability and higher base pressure drops.
- Cuts down on pore size and forms a more torturous path for the particles

# Multi-Denier Fabric

- Smaller diameter fibers are included within the fabric to become more effective on finer particulate.
- The fibers can either be homogenized throughout the fabric or stratified to the dirty side of the fabric.



# Surface Treatments

- e-Ptfe membrane laminate
- Intrinsic Coatings
- Fiber Texturizing



# US EPA – ETV Program



## Environmental Technology Verification Program

- [www.epa.gov/etv/verifications/vcenters5-2.html](http://www.epa.gov/etv/verifications/vcenters5-2.html)
- Verification reports – Valid for 3 years
- Provides quantified data as to how a fabric performs under specified conditions
- Can be used for comparisons between fabrics
- Emissions based on PM 2.5
- Some states are providing incentives for using “verified” filter media.



- Control Schemes and Hardware
- Diagnostics
- Data Transmittal
- Preventive Maintenance Programs



- How the unit is cleaned
  - Off-line
  - Auditing
  - On-Demand
  - Timed
  - On-line
  - Continuous
- Local Control Panel
- Remote Panel
- Pressure Transmitters
- 4 – 20 milli-amp signal



# Diagnostics

- Basic Alarms for high and low pressure drops
- Tie in broken bag detectors
- Air pressure
- Solenoid and Diaphragm Failures
- Zero Speed switches for material handling equipment
- Zero Speed switches for fan
- Damper Limit switches



# Data Transmittal

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- None – Local only readout
- Wired back to remote or main control panel
- Wireless signal to remote or main control panel
- Wireless to specified PC

# Preventive Maintenance Program

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- Periodic testing of bags
- Replacement of solenoids and diaphragms on a specified basis
- Spring replacement on reverse air units
- Gasket replacement
- Damper sealing and actuator condition
- Material handling system
- Air supply and quality of the air

# Contact Information

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For more information please feel free to contact:



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