Pleated Filter Elements

PulsePleat®

www.bha.com

The Simple Solution

There are many reasons why a dust collection system fails to operate properly. Sometimes the solution may require brand new equipment or a complete rebuild of the existing system. These options are often costly in terms of capital expense and downtime. Fortunately, there is another option. The simple solution. PulsePleat® filter elements.

BHA's PulsePleat filter elements have become the world's best selling pleated filters for industrial air filtration systems. With more than 1,000,000 units sold, PulsePleat elements are the *original* pleated technology and are designed and manufactured to operate in the harshest of industrial environments. No other pleated product comes close to the proven performance and time-tested durability of PulsePleat.

PulsePleat filter elements are manufactured to fit directly into your existing baghouse tubesheet, replacing traditional filter bags and cages. PulsePleat technology combines filtration media with an inner support core into a one-piece element that can significantly reduce installation time and costs. Each PulsePleat filter element is custom manufactured with the right top, media, core, and bottom to fit your existing dust collector and provide maximum benefits to your unique process.

PulsePleat filter elements may provide double or triple the filtration area inside your baghouse, and dramatically reduce your differential pressure and air-to-cloth ratios. This leads to more airflow, reduced energy costs, and improved performance.

Why have PulsePleat filter elements become the #1 choice of leading industrial manufacturers? Because they work. It's that simple.

PulsePleat filter elements are manufactured by BHA Group, Inc., the world's largest supplier of replacement products and services for industrial air filtration systems. With more than 25 years of experience, BHA has set the standard for product quality, customer service, and troubleshooting expertise. For more information about how PulsePleat technology can improve your system, call your BHA representative at 800-821-2222 or go online at www.bha.com.

PulsePleat®

IT TOOK 4 YEARS, 25 ENGINEERS, AND 180,000 HOURS TO CREATE A SOLUTION THIS SIMPLE.

PULSEPLEAT® FILTER ELEMENTS CAN BE USED IN NEW SYSTEMS OR AS A RETROFIT IN EXISTING DUST COLLECTION EQUIPMENT.

iPLAS®
Integrated Pleat Alignment System

iPLAS pleat alignment and retention system replaces convention strapping systems (utilizing fabric straps and adhesive) that are susceptible to chemical and hydrolytic attack.

iPLAS keeps the pleated media placed firmly against the inner core, virtually eliminating failure of the filter element due to over-flexing and pleat reversal. iPLAS is available only on PulsePleat elements – only from BHA.

Molded urethane top is available in a variety of styles and sizes to fit a wide range of tubesheet holes. Other materials or designs are available for higher temperatures and unique applications.

One-piece design eliminates the need for filter bags and cages, significantly reducing installation time.

Spunbond polyester media provides 99.99+% filtering efficiency.

Inner core is constructed from polypropylene or expanded metal, depending on your application needs.

Pleat depth and spacing are customized for specific applications to allow for improved dustcake release. The pleated design increases filtration surface area up to 2-3 times.

Quality controlled manufacturing ensures pleats are evenly spaced.

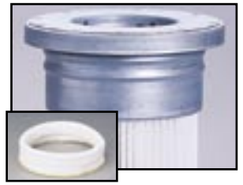
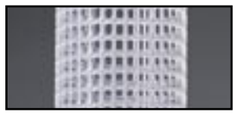
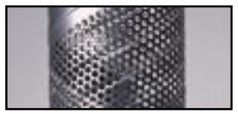
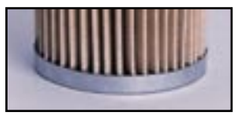
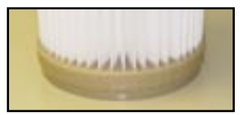
iPLAS® "formed-in-place" design anchors pleat tips firmly, keeping the evenly spaced and straight pleats aligned while element is in operation.

Specialty finishes available, including BHA-TEX® ePTFE membrane.

Molded bottom helps resist abrasive wear at the bottom of the elements.

PulsePleat® Technology Options

Maximum Operating Temperature

		180° F (83° C)	225° F (107° C)	265° F (130° C)	375° F (190° C)	450° F (232° C)
Media	Each baghouse dust collector has its own set of characteristics and system parameters. Because of this, it is important to evaluate each of the following variables in order to choose a fabric/design best suited to the system: temperature, moisture level, particulate size, gas stream chemistry, air-to-cloth ratio, particulate abrasiveness, and mechanical factors (such as cleaning style, installation, etc.). Some of the available base fabrics are listed at the right. BHA also offers many specialty finishes to fit particular applications.	• Spunbond Polyester • Stiffened Acrylic • Stiffened Polypropylene	• Spunbond Polyester • Stiffened Acrylic	• Spunbond Polyester • Stiffened Acrylic	• Aramid • PPS	• Stiffened Fiberglass • Stiffened P-84™
Tops	  Molded Polyurethane for Top- and Bottom-Load Styles	●	●			
	 Injection Molded EPDM for Top- and Bottom-Load Styles (white available for food grade applications)	●	●	●		
	   Galvanized or Stainless Steel Metal (top-load styles only) Installed with Snapband Cuff Hard Polyurethane (top-load styles only) Installed with Snapband Cuff Flange-Style Top-Load	●	●	●	●	●
Inner Cores	 Polypropylene	●				
	  Perforated Metal Expanded Metal — Each available in galvanized or stainless steel	●	●	●	●	●
Bottoms	 Molded Polyurethane Puck	●	●			
	  Galvanized or Stainless Steel Pan Hard Polyurethane Puck	●	●	●	●	●

Element Sizes Available

Standard top-load tubesheet hole diameters are available in sizes ranging from 4.5 in. (114.3 mm) to 8 in. (203.2 mm) for 3/8 in. and 1/4 in. thick tubesheets.

Bottom-load styles for common bag cup/venturi configurations such as: MikroPul™, Flex-Kleen™, Wheelabrator™, and United Conveyor™ styles. *Note: Not all designs are available in all sizes.*

Special Top Designs Available

Elements designed to fit Wheelabrator™ recessed hole, MikroPul™ and Aeropulse™ "3-Notch", Euro MikroPul™, General Resources™, Reimelt 3 Bolt, Reimelt 4 Bolt, and Oval RF (Carter Day™, Donaldson™, Howden™). Custom construction designs are also available upon request.

Media Options

- Spunbond polyester (standard)
- Polyester with oil/water repellant finish
- White polyester laminated with BHA-TEX® ePTFE membrane
- Spunbond polyester with carbon impregnation (static dissipation)
- Spunbond polyester with BHA-TEX® ePTFE membrane and carbon impregnation (static dissipation)
- Spunbond polypropylene
- Stiffened aramid felt (can also be laminated with BHA-TEX® ePTFE membrane)
- Stiffened PPS felt (can also be laminated with BHA-TEX® ePTFE membrane)
- Stiffened acrylic
- Stiffened fiberglass
- Stiffened P-84™

Construction Options

- Higher temperature components
- Customized lengths and diameters
- Customized pleat counts
- iPLAS™ is standard on all elements up to 265° F

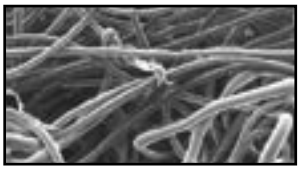
Spunbond Media

The unique PulsePleat® media is unlike traditional felt or woven fabrics in that it has a tight pore structure which resists penetration of particulate and has rigid physical properties that allow it to hold a pleat without the need for supporting backing material. The media is pleated and molded into a filter element that can increase filtration surface area 2 to 3 times compared to conventional filter bags, dramatically increasing filtration efficiency while operating at significantly lower differential pressures.

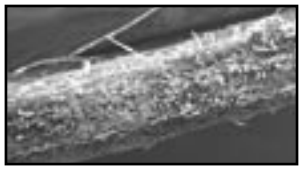
Spunbond Media vs. Traditional Needle Felt

Tight calendering of spunbond media fibers resists particulate penetration into the media.

Face view of spunbond polyester magnified 100 times.



Face view of standard polyester felt magnified 100 times.

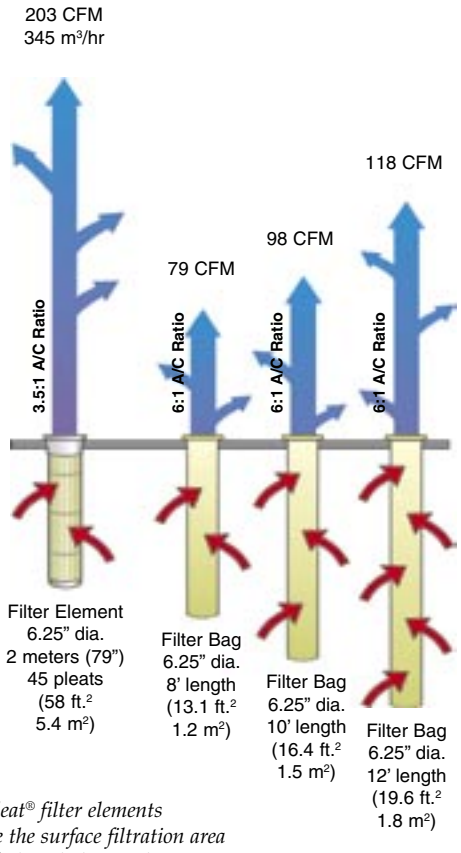


Side view of spunbond polyester magnified 50 times.

Side view of standard polyester felt magnified 50 times.

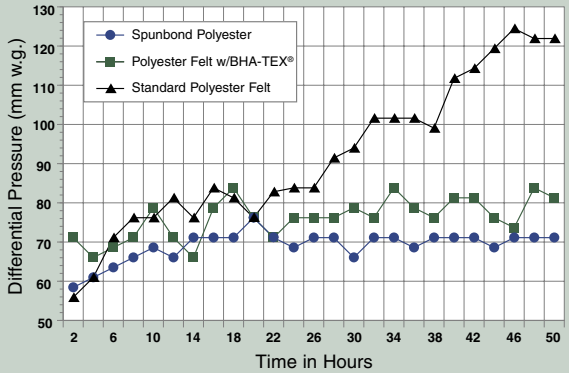
Spunbond media is manufactured by layering fine denier fibers from multiple spinning heads onto a moving mat. This depth of fibers is then calendered under heat and pressure. Spunbond media can withstand temperatures up to 275° F (135° C).

Typical Air Handling Capacities PulsePleat® Filter Elements vs. Filter Bags

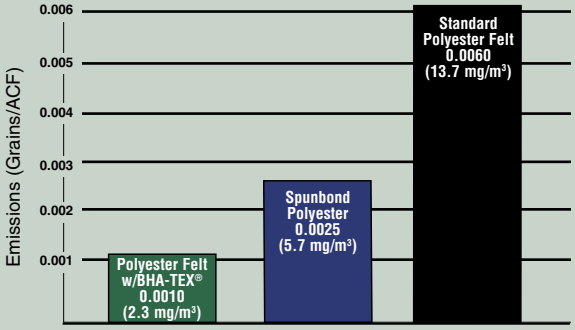


PulsePleat® filter elements increase the surface filtration area available in existing equipment and help reduce abrasion failures by moving the filter elements above the incoming gas stream.

Differential Pressure Comparison



Outlet Emissions (Grains/ACF)



CRITERIA: *Air-to-cloth ratio: 5:1 ft./min. (1.5 m/min.); Mean particle size: 0.5 micron; Inlet dust loading: 30 grains/ACF (69 g/m³); Pulse cleaning: 80 PSI (5.5 bar); Frequency and duration: 15 min. intervals for 50 hrs.*

VESA TESTING: *In a controlled VESA (Variable Environmental Simulation Analysis) test, the spunbond media was tested against traditional 16 ounce (500 g) polyester felt media and 16 ounce (500 g) polyester felt media laminated with BHA-TEX® expanded PTFE membrane.*

ThermoPleat® Filter Elements

ThermoPleat® high temperature filter elements provide superior quality and performance for upgrading and improving existing dust collection systems that operate at high temperatures. The ThermoPleat filter element is a pleated product constructed from a patent pending stiffening resin system with aramid and PPS (polyphenylene sulfide) media that can withstand operating temperatures as high as 375° F (191° C). ThermoPleat filters are a direct replacement for standard filter bags and cages.

ThermoPleat® filter elements allow for increased airflow in high temperature applications.

ThermoPleat®

Unique High Temperature Filter Media

The ThermoPleat® media is unlike other stiffened needle felts. BHA's patent pending stiffening resin system was developed specifically for endurance in high temperature environments, where in these applications, the substrate fabric maintains its excellent physical properties and dimensional stability. The media is unaffected by small amounts of water vapor at high temperatures and can withstand mild minerals, organic acids, and mild alkalis. It resists surface penetration of particulate, dramatically increasing efficiencies while operating at significantly lower differential pressures.

ThermoPleat® Construction Features

- Strong, heat-resistant media
- Wide open pleat spacing and shallow pleat depth
- High filtration efficiency
- Perforated metal inner core
- Metal top and bottom construction
- Customized lengths and diameters
- Customized pleat counts

Additional Features and Benefits

- Stiffened (aramid or PPS) media allows for higher temperature operating range
- Designed to eliminate filter bags and cages, reducing installation time
- Reduces air-to-cloth ratios dramatically
- Metal tops and snapband cuff assemblies are designed to fit most standard tubesheet holes
- Silicone top is available for bottom access bag cup/venturi designs
- Specialty finishes available
- Shorter length keeps the filter element out of the inlet gas stream, reducing abrasion problems and providing for a larger drop-out area
- Additional filtration area reduces operating differential pressure

ThermoPleat® EXT

New!

Extreme Temperature Filter Elements

ThermoPleat® EXT extreme temperature filter elements provide superior quality and performance for upgrading and improving existing dust collection systems that operate at *extremely* high temperatures. ThermoPleat EXT is a pleated product constructed from a patent pending stiffening resin system with fiberglass and other high-temperature fibers along with high-temperature potting compounds. Designed to operate in temperatures reaching as high as 450° F (232° C), ThermoPleat EXT filter elements provide significant additional filtration area in high temperature pulse-jet baghouses, and are a direct replacement for Nomex® or other filter bags and cages. (See above for Features and Benefits and at left for Construction Features.)

Successful Applications

The following are just a few of the many different applications where PulsePleat® filter elements have improved system performance. Contact your BHA representative to discuss your particular application.

Food/Pharmaceutical
Food Additive Processing
Protein Spray Drying
Flour Milling
Pharmaceutical Pill Coating
Cereal Drying
Grain
Animal Vitamins

Primary Aluminum
Fluid Bed Dry Scrubbers
Venturi Injection Dry Scrubbers
Carbon Bake Dry Scrubbers
Alumina Handling/Unloading
Green Mill Carbon Handling
Anode Crushing Ventilation
Reacted/Unreacted Ore Silos

Paint/Pigments
Toner Mixing/Blending
Pneumatic Conveying
Pigment Blending
Micronizers
Packaging
Paint Mixing
Spray Dryers

Chemical
Fertilizer Spray Dryers
Calcium Hypochlorite
Polyethylene Resins
Coke - Briquetting Process
Tire/Specialty Rubbers
Catalyst Manufacturing
Plastic Fibers
Cellulose Fibers
Polystyrene Fluff
Packaging
PVC

Cement and Rock Dust
Crushing/Grinding
Raw Mill/Finish Mill
Packing Machines
Kaolin Processing
Material Loading
Material Handling/Transport
Coal Mill
Clay Grinding
Bentonite Crushing
Silo Bin Vents

Metals
Electric Arc Furnace
Desulphurization Furnace
Induction Furnaces
Mold Cooling Lines
Shot Blast/Grinding
Ladle Melt Furnace
Sand Shakeout/Sand Reclaim
BOF Furnace
Caster

We custom manufacture PulsePleat elements to fit almost any OEM style of pulse-jet baghouse.

BHA engineers can help you select the right media, size, and construction to fit your collector – without any capital modifications.

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Other BHA Manufacturing Facilities: Slater, Missouri USA, Salisbury, Missouri USA Newport News, Virginia USA, and Folkston, Georgia USA. BHA has service & technical engineers in the United States, Mexico, Canada, Australia, and Japan.

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