

**WOKU**  
Filtermedien GmbH & Co. KG

**BEIJERS**  
BEJERTECH YHTIÖ

**BLF** Bad Lauchstädter  
Filtermedien GmbH & Co. KG

**kti** TEKNIikka

Your reliable partner  
for environmental protection

**WOKU**  
**BALTICA**  
Bendra Lietuvos-Vokietijos UAB



## Our Companies

### Production site in Beckum-Neubeckum



Wolfgang Kupke  
with his sons Lars, Sven and André

# WOKU

Established in 1979, our company specialises in developing and manufacturing innovative textile filter elements for filtration technology and solid-liquid separation.

Although the German textile industry has been confronted with grave difficulties in recent decades and still faces many of them today, we are proud to have successfully overcome the challenges of these years.

Today we employ a workforce of more than 110 dedicated employees, technicians and engineers at three production sites in Europe. Professional work performance, modern company-owned production halls and administration buildings and the use of first class raw materials from well-known suppliers guarantee the highest quality of our products at fair prices.

With our two production sites in Beckum and Goethestadt Bad Lauchstädt, our business remains based in Germany in acknowledgement of our responsibility for the future of our children and later generations.

With our production site in Kaunas we support development and economic growth in Lithuania.

We see ourselves as an important member of the respective region in which we offer jobs and manufacture high quality products. As a recognised Chamber of Industry and Commerce company we provide young apprentices with the opportunity of acquiring a training in a technical field or in business administration.



Quality lies in the details





## Our Philosophy

Our many years of experience in processing technical textiles on leading-edge, computer-aided manufacturing machines has made us one of the largest filter manufacturers in Europe.

From the outstart of our family business, our central ambition has always been to satisfy the needs of our customers at all times. For this reason, we design and manufacture individually tailored solutions and also serial products for and together with our customers.

We deliver reliable quality all over the world in the shortest time possible. Our unfailing commitment to customers and suppliers has made us the partner of many operators and notable system manufacturers.

We are proud not only to have preserved jobs but also to have increased them in recent years, and to have not made use of temporary employment agencies. All our employees have permanent positions with a work contract, fair pay and social security.

Our motivated and well-trained employees would be pleased to advise you on site at your own premises.

We look forward to working with you!

**The Kupke family and all the team**



Production site in Beckum-Neubeckum

# WOKU



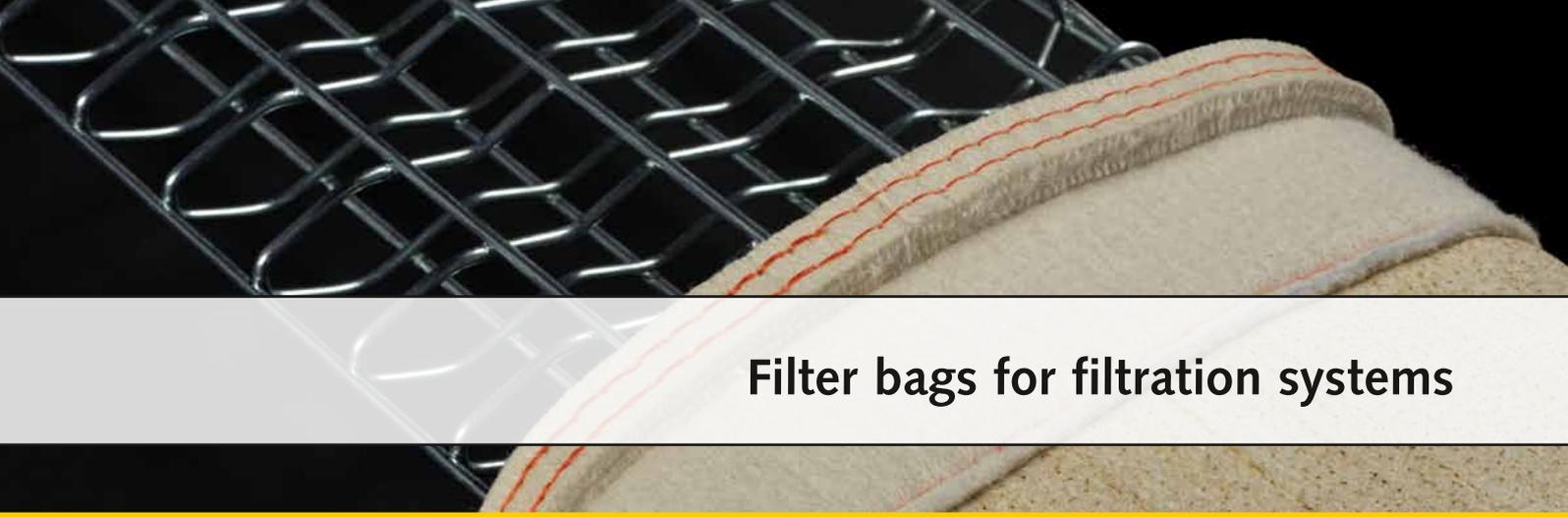
Production site in Goethestadt Bad Lauchstädt

# BLF



Production site in Kaunas, Lithuania

# WOKU BALTICA



## Filter bags for filtration systems



### Filter bags

With the help of leading-edge computer-aided manufacturing technology, we produce customised filter bags for all types of filtration systems.

The selection of high-quality technical fabrics and needle felts with different surface finishes and special treatments and fittings allows our filter bags to achieve a long service life with optimum filtration efficiency, low pressure losses and best regeneration results.

### Seamless circular-knit filter bags

Seamless circular-knit filter bags are primarily used in the wood-processing industry. The special production method generates a seamless filter bag with a special looped surface from which the dust cake can effortlessly be removed during the cleaning cycle.

Seamless circular-knit filter bags reduce the filter system's pressure losses and energy consumption while increasing air throughput and ensuring outstanding separation performance.



Conductive circular-knit filter bag



Snap ring with sewn double-beaded gasket



# Woven fibreglass bags with ePTFE membrane

## Woven fibreglass bags

For many decades we have been producing a large range of woven fibreglass bags with ePTFE membrane for the widest variety of hot gas applications.

Thanks to our know-how, our sophisticated production processes, our optimal design and the use of highest-quality raw materials, our fibreglass filter bags with ePTFE membrane achieve

- Highest filtration efficiency,
- Low differential pressures,
- Efficient regeneration,
- Long service lifetimes.

Our products are tailored precisely to the support cage in stringent adherence to the respective dimensions and models. All seams are sewn with high-quality PTFE sewing thread.

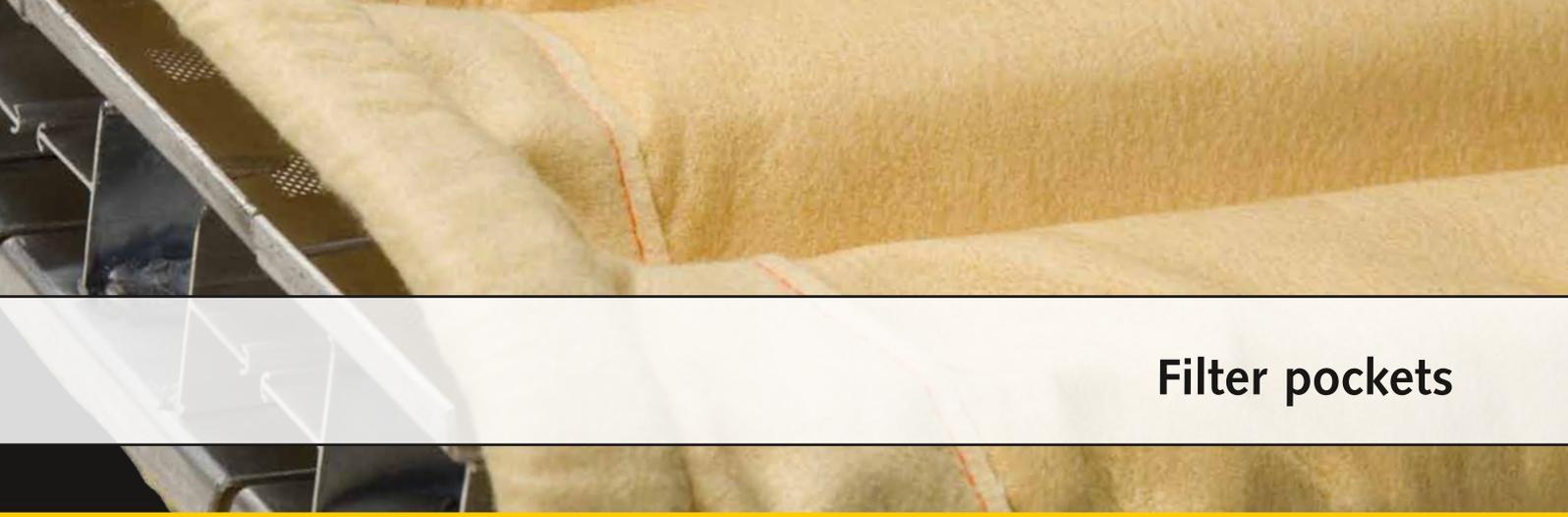
Special hot-gas media for the filter tops and bottoms ensure optimum sealing and maximum protection against wear.

To ensure an optimum fit between filter bag and support cage, we also supply the matching support cages in a variety of models and steel qualities.

Packed in cardboard boxes, each in its own single plastic bag, our fibreglass filter bags with ePTFE membrane are safely delivered to customers all over the world.



Quality that  
pays off



# Filter pockets

## Filter pockets

To ensure optimum performance and service lifetimes, it is essential that no detail is neglected during the production of textile filter pockets.

We produce system-dedicated filter pockets in the widest variety of designs, dimensions and qualities according to your process parameters, thus ensuring long service lifetimes with optimum filtration results.

High-quality support cages, aluminium profile frames and further accessories such as

- Clamping frames
- Torsion springs
- Mouth pieces
- Pocket supports
- Lubricant coatings for jet nozzles
- Purge air hoses and hose covers

are delivered on request along with your filter pockets.



Filter pockets with sewn-on felt seals



## Filter elements



### Multi-filter pockets

We manufacture multi-filter pockets for silo-top filters and individual station extraction from selected technical fabrics and needle felts in a variety of special finishes. We always keep a range of standard models in stock and ready for delivery to you at all times.



### Star filters

Star filters for industrial vacuum cleaners are available for delivery at short notice in all sizes, designs and qualities. The high-quality filter media used in manufacturing are most compelling due to their long service life while also ensuring best results even for very fine grades of dust.

### Filter cassettes

These special filter cassettes with tops of galvanised steel plate are made of high-quality technical needle felts and are ready to install.

### Available designs

- Three-row
- Four-row
- Six-row

Special designs in stainless steel with pleated filter panels (increased filter surface area) or for the high-temperature range are also available upon request.



# Food-grade filter elements



Cuff with stainless steel ring



Snap ring with double cord



Snap ring with single cord



Disk with bound edges



Disk with internal seams



Single packing

### Food-grade filter elements

Filter elements in product and CIP filters are decisive for the respective process. They need to meet high demands and be suitable for contact with food and beverages. For this reason, special filter media and finishing techniques are used to meet the different specifications and highest quality standards.

- Conformity to EU Directives No. 1935/2004\* and No. 10/2011\*
- Conformity to FDA 21 CFR\*
- With or without ePTFE membrane
- Antistatic grade (conductive) available

\*Depending on the individual components selected, the filter elements can be produced to comply with EU Directive No. 1935/2004, EU Directive No. 10/2011 and/or FDA CFR 21.

Other versions can be developed according to client specifications.

# Exhaust filter for fluid-bed driers

## Exhaust filter for fluid-bed driers

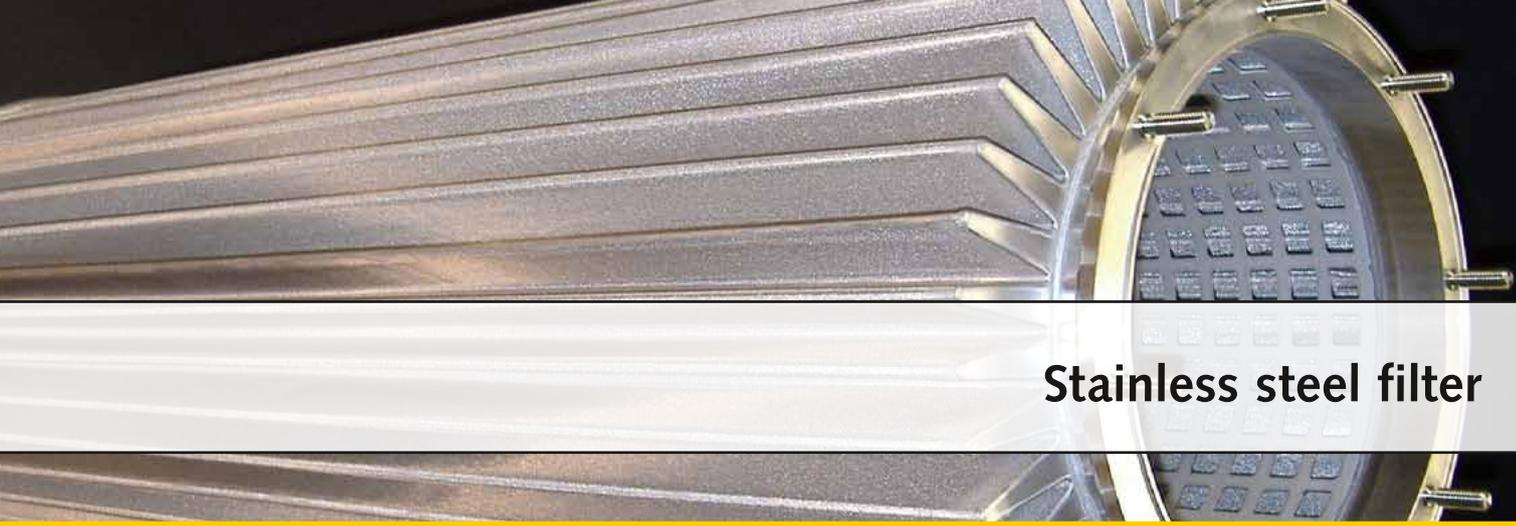
We design exhaust filters in close collaboration with our customers. Our many years of experience, careful selection of materials and professional processing provide you with an original product of highest OEM quality.

The various dimensions and designs are custom-fit to the different applications according to the special requirements of our customers from the pharmaceutical, chemical and food and beverage industries.

Our special qualities have been tried and tested in practice over decades. We can also provide you with exhaust filter tubes for high shear mixers, connection sleeves and outlet sleeves.

Our repair service is available for all used filter units.





# Stainless steel filter

### Stainless steel filters

Stainless steel filters manufactured from a wide variety of bonded, high-level filtration layers of stainless steel wire mesh are used in a multitude of applications in the chemical and pharmaceutical industries.

Our stainless steel filters are made to order according to the requirements of our customers and are available as a cylindrical filter cage or as a pleated cartridge.

### Benefits

- High-performance filtration
- Long service life
- High mechanical loading capacities
- Electropolished
- Also for hot-gas filtration up to 500°C





# Filter cartridges

## Filter cartridges

Our filter cartridges are made from selected pleatable spinning fleeces or needle felts and are available for all system types and applications.



**Jet filter cartridges**  
with three- or four-lug flange



**DIN filter cartridges**



**DIN filter cartridges**  
with exterior support cage, open on both ends or on one end / bottom with hole



**Flange cartridges**



**Threaded filter cartridges**  
with interior thread



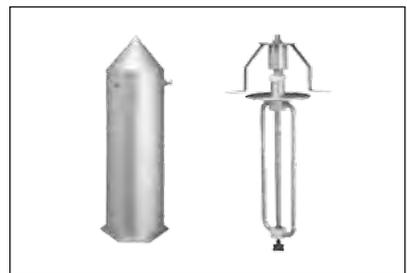
**Filter cartridges**  
with snap lock



**TS filter cartridges**  
with push-on flange on both ends  
**Filter cartridges**  
with pins



**Filter bag replacement filter cartridges**  
for clean gas- or raw gas-sided installation, up to 250° C



**Accessories**  
Flow-control cylinders, rotating air jets, venturi nozzles, cartridge retainers, pre-coating powders, cleaning valves and controls

# Welding smoke extraction

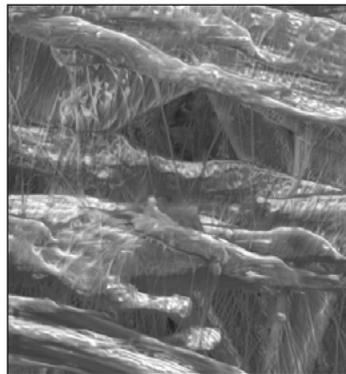


## Filter cartridges for welding smoke extraction

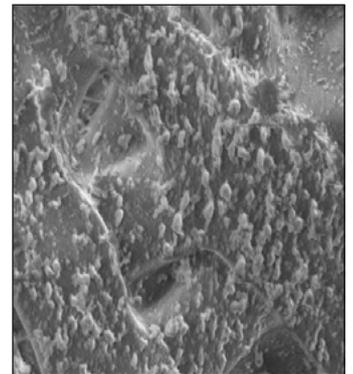
Work such as welding, plasma cutting and thermal metal-cutting processes generates fumes, gases and particles that are classified as hazardous substances. These extremely fine particles can be inhaled deep into the alveolar ducts of the lungs. Some metals lead to the formation of substances that can cause serious respiratory diseases and even cancer.

The optimum solution for such applications is the use of filter cartridges with a laminated ePTFE membrane coating. Our ePTFE membrane filter cartridges comply with dust classes H12 and H13 in accordance with EN 1822 under the applicable filter surface load. Other filter media do not achieve this level of filtration performance!

When purchasing your filter cartridges it is, therefore, essential to choose the best quality available for the protection of your workforce and the environment.



**WOKU high-performance ePTFE membrane**



**A competitor's ePTFE membrane**



## Pre-coating powder for filter cartridges

Welding fumes can sometimes also contain sticky particles. When installing new filter cartridges, it is, therefore, helpful to coat them with a layer of special protective powder before the dust comes into contact with the filter medium. This pre-coating (application of a separating layer between the filter medium and the dust cake) increases the service life of the filter cartridges considerably and greatly improves cleaning efficiency.

# Donaldson Ultraweb® & Power Core®

## Ultraweb® filter cartridges

As a Donaldson Filtration distribution partner, we not only stock all the company's generic standard filter cartridges but also its complete range of round and oval Ultra-Web® filter cartridges. Ultra-Web® nanofibres are manufactured in a special production method that produces extremely thin fibres with a diameter of 0.2 – 0.3 microns. They are the finest synthetic fibres used today in filtration technology. These nanofibres are woven into a tissue-like mesh with tiny interstitial spaces that is applied to a wide variety of substrate materials.

### Advantages

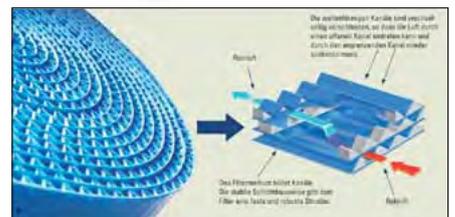
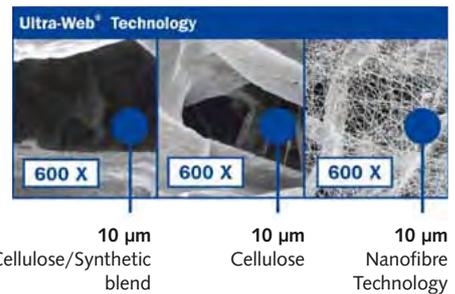
- Surface-oriented release of submicron and larger dust particles
- Improved cleaning efficiency
- Slow, stabilised pressure drop
- Clean exhaust air
- Longer filter life, higher cost savings

## PowerCore® UltraWeb®

PowerCore® is an innovative filtration concept. It combines proprietary Ultra-Web® nanofibre technology with leading-edge filter media expertise to create a unique and revolutionary filtration technology. In combination with the proprietary Ultra-Web® filter medium, the special honeycomb structure of the PowerCore® filter packs captures more dust on the filter surface than conventional filter elements.

### Advantages

- Higher efficiency with lower clean-gas emissions, also for submicron particles
- Improved cleaning efficiency
- Reduced pressure drop
- Reduced energy consumption
- Longer filter life, higher cost savings
- Fast filter replacement - shorter downtimes



# WAM filter elements

## WAM filter elements

The Italian WAMGROUP is the global leader in the development and production of components for bulk goods technology.

With over 2000 employees, WAM is a strong and reliable partner all over the world.

As a WAM distribution partner, we can provide you with all the requisite original filter elements for round and polygonal dust filters, silo-venting filters, breather filters and fume and dust filters.

In addition to all the standard WAM filter elements, we can also supply you with the complete range of standard WAM spare parts, and even complete WAM filter systems.



# WAM filter elements



**Filter cartridges** for ZAZ 6030 loading bellows  
Old until end of 2007  
New from 2008



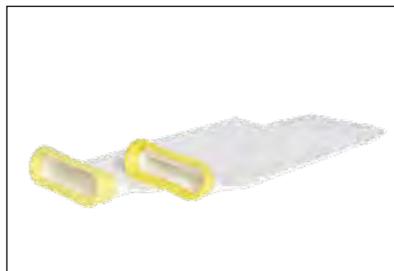
**Cartridge**  
KFEC until May 2003 WAMECO  
Replacement on clean-gas side



**Cartridge**  
KFES until May 2003 WAMECO  
Replacement on raw-gas side



**Filter pocket**  
KFET until 2003, WAMAIR  
KFNT from 2003, WAMAIR, HOPPERJET



**Filter bag**  
KFEF until 2003, WAMFLO, WAMECO  
KFNE from 2003, WAMFLO, WAMECO



**POLYPLEAT® element**  
KFEW, WAMAIR, WAMFLO, SILOTOP



**Filter bag**  
KFEM until May 2003, WAMECO  
KFNM from May 2003, WAMECO



**Multifilter pocket**  
KFED, WAM Dustshake – R01  
KFED, WAM Dustshake – R02



**Cartridge**  
KFNC from May 2003 WAMFLO,  
HOPPERTOP

# Filter panels



## Filter panels

Because of their design, high-performance filter panels offer excellent performance with minimum space requirements. They are made of high-quality, pleatable synthetic fleece materials and offer low filtration resistance, excellent cleaning qualities and outstanding filtration results.

The use of our filter panels can also achieve energy savings of 3–4.5 bar due to the low cleaning pressures.

Special Venturi nozzles for high-performance filter panels optimise cleaning performance.

## Spare element for sintered element filter panels



## Spiral tube filtration elements

Special coiled spiral-tube filtration elements are a sophisticated alternative to sintered filtration elements. They offer excellent cleaning and filtration characteristics due to the laminated ePTFE membrane and low differential pressure, particularly in comparison to conventional sintered rigid body elements. Available as a compact filtration element or as a simple spiral tube.



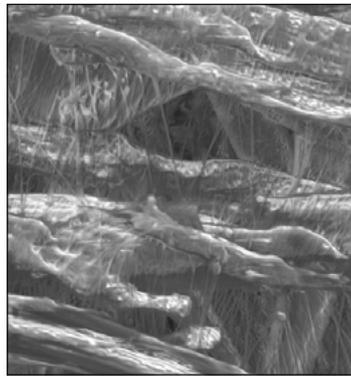
# Fume extraction systems for laser, plasma and flame cutting tables

## Filter panels for thermal cutting

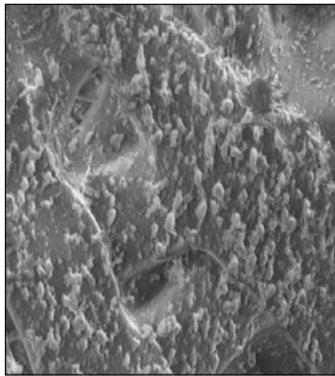
Work such as welding, plasma cutting and thermal metal-cutting processes generates fumes, gases and particles that are classified as hazardous substances. These extremely fine particles can be inhaled deep into the alveolar ducts of the lungs. Some metals lead to the formation of substances that can cause serious respiratory diseases and even cancer.

The optimum solution for such applications is the use of filter panels with a laminated ePTFE membrane coating. Our ePTFE membrane filter panels comply with dust classes H12 and H13 in accordance with EN 1822 under the applicable filter surface load. This quality is tested and certified by an independent institute. Other filter media do not achieve this level of filtration performance!

When purchasing your filter panels, it is, therefore, essential to choose the best quality available for the protection of your workforce and the environment.



**High-performance WOKU ePTFE membrane**



**A competitor's ePTFE membrane**

## Pre-coating powder for filter panels

Welding fumes can sometimes also contain sticky particles. When installing new filter panels, it is, therefore, helpful to coat them with a layer of special protective powder before the dust comes into contact with the filter medium. This pre-coating (application of a separating layer between the filter medium and the dust cake) increases the service life of the filter panels considerably and greatly improves cleaning efficiency.



## Sinter element filter panels

### Sinter element filter panels

Sinter elements are special rigid-body filter panels made of sintered polyethylene granulate with a special water-repellent PTFE coating embedded in the base body.

They have a very resistant, porous structure and provide three times the filter surface of conventional textile filters.

Sinter element filter panels are frequently used in downstream safety filters (control filters) in the chemical and pharmaceutical industry.

They are generally characterised by a long service life and the highest filtration efficiency, even in the case of extremely fine dust particles.

### Properties

- Very low clean-gas values  $< 0.2 \text{ mg/m}^3$  can be achieved (depending on dust)
- High product recovery
- Constant volume flow
- Constant differential pressure
- Very long service life
- Reduced maintenance requirements
- Fibreless filter element
- Wipe-clean surfaces
- Particularly suitable for abrasive dusts
- Conductive grade also available (antistatic)





## SINBRAN® filter elements

### SINBRAN® filter elements

SINBRAN® filter elements are rigid-body filter elements made of sintered, porous polyethylene tubes. The tube surfaces are coated with a high-filtration ePTFE membrane.

The laminated tubes are joined together to create rigid-body filter elements that form the actual filter element itself.

In addition to custom sizes, the filter elements are available with 12 or 18 single tubes in lengths of 950 mm, 1260 mm and 1500 mm.

Custom sizes are also available on request.

### Properties

- Highest filtration rates, even in the case of weakly agglomerating dusts and high levels of fine dust
- Low pressure drop
- High cleaning efficiency
- High mechanical stability
- Long service lifetimes.
- Large filter surface in minimum space
- Antistatic grade to ATEX ( $R < 10^8 \Omega$ ) available
- Heat resistant to max. 75°C continuous operating temperature (without chemical loading)
- Excellent chemical resistance
- Clean-in-place cleaning





# Support cages

## Support elements

The combination of high-quality filtration and support elements is decisive for optimal operation of the filtration system and for the service life of the filtration medium.

Experience has shown that insufficient wire thickness, or poorly manufactured or corroded support elements, for example, can reduce the service life of the filtration element.

## We supply support cages

- Round, square, star-shaped
- One-piece or divided with double ring, claws or special metal ring coupling
- With or without venturi nozzles
- Raw, galvanised, epoxy-coated or stainless steel

Assembly aids and tools are also available.



Special CIP design



Bottom pan edge pressed on



Bottom pan with rolled edge



# Support frames and pocket inserts

## Bag frames

Pocket frames are built into filter pockets. They are manufactured in the widest variety of sizes and designs. New designs can also be manufactured to your specifications, drawings or prototypes. They can be produced in raw, galvanised, epoxy-coated or stainless steel.

## Support frames

Support frames are oval and flat-oval support cages for use in flat filter bags and pockets. They can be produced in raw, galvanised, epoxy-coated or stainless steel.

We can also supply you with high-quality mouth pieces and torsion springs.

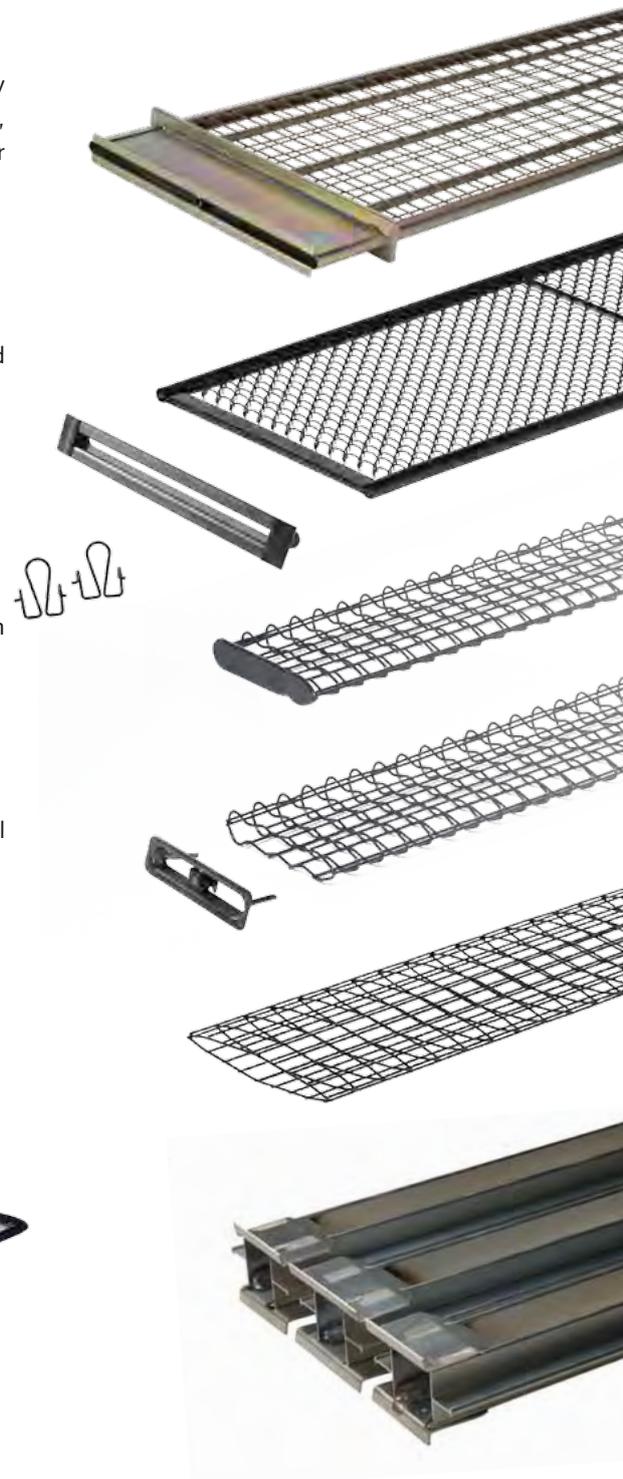
## Aluminium profile frames

Aluminium profile frames are made of a special aluminium profile. They are used in two, three or four channel filter pockets.

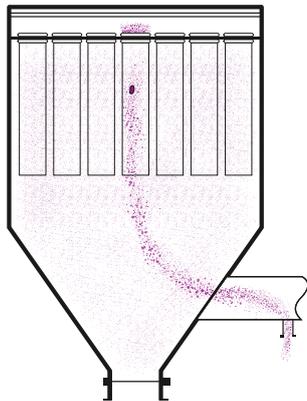
## Inserts

Inserts for multi-filter pockets are made of round spiral wire mesh. We deliver all dimensions in the highest quality, including PVC edge protection.

All stainless steel products can be pickled and passivated on request.



# Contrast powder



## Fluorescent contrast powder

Fluorescent contrast powder is used for rapid and precise identification of leakage points in filtration systems. The fluorescent powder is filled into the filtration system, follows the path of least resistance and accumulates at leakage points. Ultraviolet light is then used to quickly and accurately identify the leakage and its cause.

### Benefits

- Decades of successful application
- Easy to use
- Shortens downtime
- Helps reduce costs

Can be delivered from stock in different colours: yellow, pink, green, red, orange

Packaging units of 1.5 kg or 4.5 kg



## UV lights

UV light is used to make the fluorescent powder glow as brightly as possible. Our custom-designed compact flashlight is one of the strongest of its kind.

- The LED output is comparable to that of a 150 W light.
- The beam is 15 times brighter than in regular LED lights.
- Inspection range of up to 6 m.

You can also obtain spare glasses from us.

**Just ask for our supplementary brochure with detailed instructions.**



# Pre-coating powder

## Pre-coating powder

Are you having problems with wet, oily and sticky dusts and gases blocking your filter element?

WOKU pre-coating powder can boost the performance of textile and pleated filtration elements and protects the filtration element with its special structure.

The pre-coating powder is introduced into the filtration system when new filtration elements have been installed. It then forms a supporting filtration layer over the surface of the new filtration elements. This initial supporting filtration layer, consisting of a multitude of pores, prevents the ingress of dust particles into the filtration media and thus effectively prevents clogging or caking.

### Benefits

- Increases the efficiency of your system
- Reduces caking
- Improves cleaning
- Can prolong service life
- Inert
- pH-neutral
- Safe and easy to use

Moreover, the pre-coating powder is lighter than the lime usually used and is not removed, or not substantially removed, from the filtration elements during cleaning.

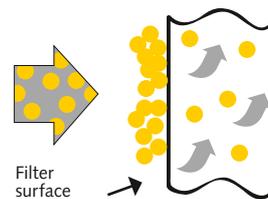
### Recommended doses

- 250 g/m<sup>2</sup> filter surface for filter bags/pockets
- 150 g/m<sup>2</sup> filter surface for pleated filter cartridges/panels

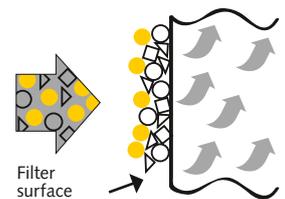


Filter bags in a galvanising plant  
Without pre-coating

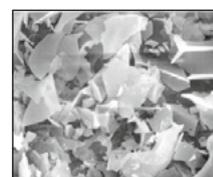
Without pre-coating



With pre-coating



- ● ● Particles
- ➔ ➔ ➔ Air flow
- ◇ ○ Pre-coating



The special structure under the REM  
microscope

# Accessories



## Hose clamps

High-quality hose clamps facilitate the installation of filter bags and increase their service life by reducing leakages and abrasion.

## Access door seals

Access door seals in filtration systems should be checked at regular intervals for signs of damage and leakages. If they are damaged, even the smallest leakage can cause problems in the filtration system as false air can be drawn into it.

- Extraction efficiency can decrease.
- Condensation can lead to clogging of the filter elements or to corrosion in doors and walls.

In particular seals that are exposed to high temperatures or strong temperature fluctuations should be checked annually!



## Bag caps and bag suspension assemblies

The correct tensioning of suspended filter bags in many system models is an important factor in ensuring optimum filtration processes.

Bag caps fitted with springs are the first choice for this purpose. The filter bags are permanently tensioned by means of a tension spring in the cap system. This model is easy to install and reduces maintenance times as regular adjustment of the tension in the filter bags is not required. This makes flaccid filter bags which form creases a thing of the past.

WOKU manufactures compatible bag caps for suspended filter bags according to technical drawings or specimens in a variety of qualities.





## Cleaning components for pulse-jet filtration systems

### Venturi nozzles

Venturi nozzles intensify the cleaning pulses by guiding additional secondary air into the filter elements.

When checking your filtration system, please pay attention to the condition of the Venturi nozzles as these are also parts that are subject to wear and tear.



### Diaphragm valves / Pilot valves / Pilot valve boxes

Diaphragm valves enable the compressed air pulse for cleaning the filtration elements in the dust-extraction filters and route the pulse into the filtration elements via blow pipes. Pilot valves actuate the diaphragm valves that trigger the compressed air pulses. They are connected singly, directly or multiply via a pilot valve box.

Only cleaning systems that are working optimally guarantee effective regeneration of the filter elements and correct functioning of the filtration system.



### Spare part sets for diaphragm valves

Diaphragm and pilot valves should be checked annually to ensure that the filter cleaning process proceeds optimally.

Important: Prior to beginning servicing work, please ensure that the components are disconnected from any source of pressure or electrical current supply. Pressure and electrical power lines must only be reconnected when the valves have been completely reassembled.

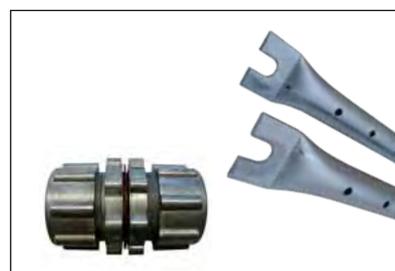


### Blow pipes / Nozzle bars / Wall brackets

Perfectly manufactured and dimensioned blow pipes generate an optimal cleaning pulse in the centre of the filter element.

Important: Blow pipes are also subject to wear and must be checked regularly.

Wall brackets for blow pipes facilitate the installation of blow pipes through the wall of the filtration system (without welding).



REGLER

ALARM



max  
mbar  
min

CE

REL



ALARM

## Cleaning controls and display systems



DDO\*



Only control and display systems that are working optimally will allow your filtration system to give its best performance.

### Pressure difference gauge

Simple pressure difference displays measure the differential pressure between the clean gas and the raw gas sides of a filtration system and display the value.



### Differential pressure switch

Differential pressure switches are used to actuate filter valve controls. These measure the pressure difference between the clean gas and the raw gas sides of the filtration system. The cleaning process begins when the highest differential pressure setting is exceeded and is stopped when the differential pressure falls below the lowest value set.



### Filter valve control systems

Filter valve control systems with built-in differential pressure regulators for the electrical actuation of the cleaning valves allow differential-pressure-dependent cleaning of the filter elements. These controls monitor the differential pressure in the filter and only clean the filter elements when necessary.



### Benefits

- Optimises the cleaning cycles
- Regenerates the filter elements only when necessary
- Excludes the possibility of "overcleaning"
- Minimises strain on the filter element
- Conserves compressed air / energy



### Line cleaners

Clogged pneumatic measuring lines distort measurement results and can lead to control problems. This can be remedied with line cleaners that prevent clogging in pneumatic lines for pressure, differential pressure and vacuum measurement. Typical applications include areas in which the media to be filtered contain organic substances such as cereal flours or also inorganic dusts such as cement, gypsum, lime etc.



# Dust measurement technology

## Broken bag detector

The broken bag detector is a dust sensor that operates on a triboelectric basis (charge transfer upon impact or circulation of particles on conductive surfaces). It provides the user with immediate information about the possible passage of dust through the filtration system. Any problems that occur are reported at an early stage so that appropriate countermeasures can be initiated in good time.

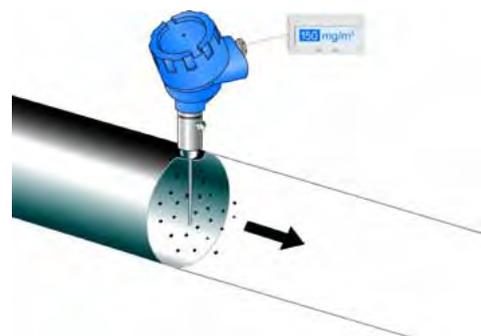
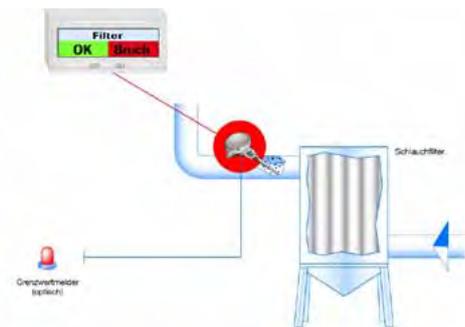
## Dust measurement technology

Early recognition and precise monitoring of emission values is required in many applications for the optimal operation of filtration systems.

Ageing filter elements and the corresponding maintenance measures can be optimised with the help of dust measurement technology so that downtimes are consequently minimised.

The dust measurement sensors were specifically designed to reliably measure the clean gas content behind filtration systems. The measurement technology works on the basis of triboelectric charging so that, in contrast to other dust detectors, dust sediments on the sensor are not critical and do not lead to distorted measurement results or even to disruptions in operation.

Please request our special brochures on dust measurement technology.



# Air-conditioning technology

## Air-conditioning technology

Our programme also offers filter elements for air-conditioning systems and devices of all kinds: for air-conditioners in offices, warehouses, schools, industrial halls, clean rooms and laboratories in the pharmaceutical and food and beverage industries.



Paint-stop filter pads of fibreglass in rolls or cut to order



Holders and clip-on frames



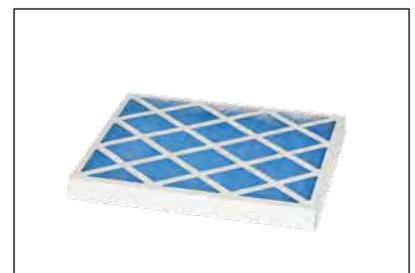
Folding carton filters for painting systems and paint spraying booths



Z-line filters in various frame designs



Filter cells in various frame designs



Micro-pleat Z-line filters

# Air-conditioning technology



Pocket filters of synthetic or fibreglass fleece fabrics



Compact filters



Suspended particle filters



Grease separation filters for hot steams with oils and grease or for the condensation of vapours



Rubberised-hair filter pads and round filters for high dust concentrations and specific coarse dusts



Activated carbon filters with loose material filling or as pleated cartridges



Textile air-distribution systems



Textile air-distribution systems



Textile air-distribution systems

We deliver products manufactured to the DIN EN 779 / 2002 or EN 779 / 2012 standards.

# Rubberised-hair filters



## Rubberised-hair filters

Rubberised-hair filters are made of a special natural fibre-latex compound and provide optimum filtration for large concentrations of dust and specific coarse dusts.

They are used as humidity-resistant filters to clean the intake air of fans, combustion engines and compressors, e.g. in the cement industry, foundries and power plants.

Rubberised-hair filters are particularly economical and have very low initial pressure differentials, even when volume flows are strong.



## Properties

- Even depth structure
- High rigidity
- Elastic
- Very high dust-holding capacity

Rubberised-hair filters are available in the widest variety of sizes as:



- Filter pad sheets
- Round filters closed on one side
- Round filters open on both sides



# Conveyor trough textiles and felts

## Conveyor trough textiles and felts

WOKU-TEX conveyor trough textiles for pneumatic transport and ventilation systems processing dust-shaped or fine-grained bulk goods.

### Application areas

- Pneumatic conveyor troughs
- Silo floors
- Trams and railway vehicles
- Ships

Our conveyor trough fabric can be perfectly adapted to your application by selecting different types of weave, thickness and air permeability.

- Woven from high-strength multi-filament polyester yarns
- With sealed edges

Available for special applications in explosion-protected anti-static design.

We provide meta textiles and special para-aramid textiles for application temperatures of up to 250° C. These high-temperature qualities are produced with heat-resistant edge treatment.

We also offer abrasion-resistant conveyor trough felts with a special latex coating on request.

## Special hose for the ventilation of bulk goods

The special hose is used to aerate free-flowing goods in silos or transport containers. It is made of 100% high-strength polyester, consists of circular woven textile and has controlled air permeability, thanks to a special line weave. The special hose is delivered with a one-sided polyurethane coating to increase wear resistance and enhance the air outflow.

### Further properties

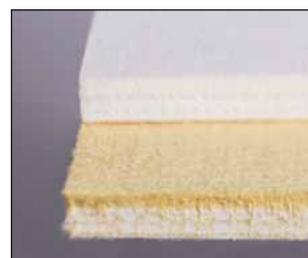
- Harmless in contact with food
- Resistant to ageing, ozone and environmental conditions
- Heat resistant from -30° C to +80° C



Transporting bulk powder goods



Storing and aerating bulk powder goods



Conveying trough felts

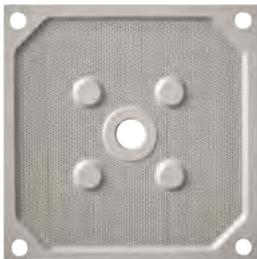
# Solid-liquid separation



## Filter press cloths

Filter press cloths are designed as pull-through or throw-over cloths – depending on the type of system. They can be fitted with edge and support pin reinforcements made of needle felt, Velcro, eyelets, welded binding holes or coated edges.

The special fabric selected for the respective process features optimum separation characteristics, low caking moisture and efficient rejection of caking. The necks are made of a special fabric or can be additionally sealed on request.



## Filter panels

These filter panels made from highest quality thermoplasts for chamber or membrane filter presses are manufactured by the most modern production technology available. The filter panels are characterised by excellent chemical durability and dimensional accuracy.

We supply you with filter panels in the greatest diversity of dimensions, qualities and designs. We also custom-build according to technical drawings or samples.



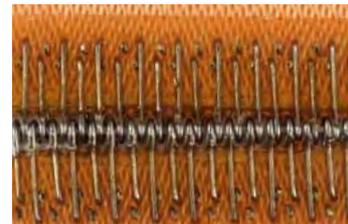
## Segment coverings for rotary filters

Segment coverings are manufactured to an exact fit. Specially developed fabrics that are suitable for shrink-fitting onto the segments are used for this purpose. We also offer special stretch fabrics that do not require shrink-fitting for certain applications. Zips and Velcro are also processed according to the requirement of the customer.

# Solid-liquid separation

## Filter belts

Filter belts for vacuum belt filters and belt filter presses are manufactured from fabrics adapted to the respective filtration process. They have an even fabric structure, are abrasion-resistant and have faultless directional stability. The edges are ultrasonically welded or sealed, the connections are secured by extremely resilient precision seams.



## Filter bags

Filter bags of different materials and filtration grades allow the selection of a suitable filter bag to suit the respective operating conditions. The filter bags are made of high-quality monofilament fabrics (nylon, polypropylene, polyester) or needle felts (polypropylene, polyester) and are available in different sizes and filtration grades.



## Filter fleeces for gravitational belt filters

Filter fleeces for gravitational belt filters are used in many industries to extract solids from fluids such as cooling lubricants, low viscosity oils, sanding and drilling oil emulsions or washing fluids. We supply various high-quality filter fleeces in all widths for the filter systems of the widest variety of manufacturers.

## Further products

Anode bags • Filter blanks for rotary disc filters • Filter segments for plan filters • Candle filters • Screen baskets made of metal wire fabric and perforated plate • Rotary drum filter covers • Centrifugal bags • and much more



## Materials and treatments



### Materials and treatments

We manufacture our products from high-quality needle felts, textiles and non-woven textiles. We have a large number of specialised equipment and coatings to optimise filtration results and service life:

- Oleophobic/hydrophobic
- Siliconised
- PTFE single-fibre impregnation or coating
- Conductive (anti-static)
- Spark-resistant
- Flame-retardant
- Micro-fibres
- Asymmetrically-designed customised products
- ePTFE membranes
- Hybrid filter materials
- Micro-porous foam coatings
- Nano-coatings
- and more

A small selection of  
filter media

# Materials and treatments

## Antistatic

Depending on the type of dust being filtered, it is possible for static charges to occur on the filter elements.

In mills, the timber and chemical industries, mining and many other industries and applications, the risk of explosion is extremely high due to explosive dusts.

Antistatic filter media with surface resistance values of  $< 10^8$  Ohm (measured according to DIN 54345 Parts 1 and 5)

- Are permanently conductive due to premium class stainless steel fibres in the supporting fabric
- Offer explosion protection due to permanent electrostatic load discharge
- Are specially designed for Ex zone applications
- Are certified by DEKRA EXAM GmbH



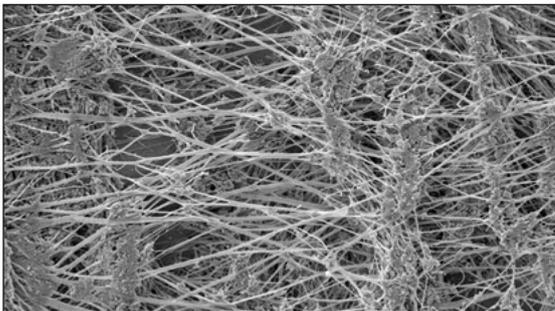
## Needle felts and textiles for the food and beverage industry

Needle felts and textiles used for foodstuff filtration must meet special requirements. In addition to optimum filtration and cleaning properties, their food-safety also plays a decisive role. For these demanding applications, we offer a range of certified filter media – with and without ePTFE membrane – with compliance statement to EU Directives No. 1935/2004 and 10/2011, and/or to Federal Regulation FDA 21 CFR.

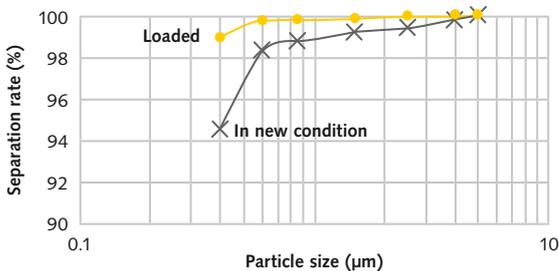


**Food-grade needle felt with conductive supporting scrim, conform according to EU Directive No. 1935/2004, 10/2011.**

# ePTFE membranes



REM microscopic image of a PTFE membrane



Fractionated filtration efficiency

## ePTFE membranes

Strictly speaking, standard needle felts are used as an initial barrier for incoming dust particles. The particles form a dust cake on the filtration media and are responsible for separating the particles during the rest of the process. Dust particles should only separate on the surface of the filtration media and not penetrate deeper into the media - this is the technical intention. However, in standard filter media, the fine particles gradually penetrate the filtration media over time, which leads to an increase in differential pressure. In most cases, the particles can only be removed with difficulty once they have penetrated the media. The results: an increase in the filtration system's energy consumption due to the increased frequency of cleaning processes, the filter material is subject to greater use and wear, the service life of the filter elements is shortened.

In many cases an ePTFE membrane can solve the problem. The ePTFE Membrane is a tautened, three-dimensional, highly porous film that is applied to diverse filtration media by means of a special lamination process. It acts as a permanent dust cake and prevents the fine particles from penetrating deeper into the needle felt. The finest incoming dust particles are separated directly on the surface of the membrane thus achieving optimum surface filtration. Due to the very smooth membrane surface, the dust cake is simply removed during cleaning.

## Benefits

- Lowest emission rates – almost zero emission possible
- Excellent cleaning performance
- High air-to-cloth ratios with reduced pressure loss
- Fewer cleaning cycles
- Energy conservation
- Increased service life
- Excellent chemical durability
- Absolute surface filtration due to the microporous ePTFE membrane
- Steady extraction volume flow

Our programme offers a wide range of filter media with ePTFE membrane. Please don't hesitate to ask us about them, we would be pleased to provide further advice and information.

# SMP-TEX – super-micro pores

## SMP-TEX

Particles that penetrate deeply into the filter media can only be removed with difficulty by cleaning. This leads to an increase in the differential pressure over time and ultimately to clogging of the filter media so that the filter elements must be replaced. One of the most important factors in the development of innovative filter media for filtration systems is always the optimisation of surface-oriented particle separation.

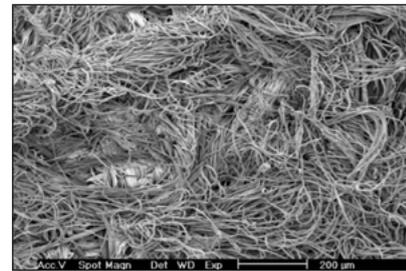
### Surface-oriented particle separation

- Reduces particle deposits and lowers the differential pressure,
- Reduces cleaning frequency due to longer filtration cycles,
- Conserves energy and lowers operating costs.

The innovative SMP-TEX filter media were specifically developed for the separation of finest, dry dust particles. Innovative high-tech fibres and a special treatment method are used in production, whereby extremely fine pores are generated on the upstream side of the filter media. These extremely fine pores are responsible for optimum surface filtration and a low rate of residual pressure loss. Even the finest dust particles are separated on the surface and the penetration of particles in the cross-section of the filter material is reduced to a minimum.

### Benefits

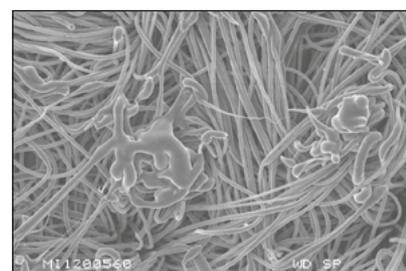
- Extremely fine micropores
- Emissions below 1 mg/m<sup>3</sup> possible
- Extremely good cleaning results due to the smooth surface
- Low differential pressure
- Low compressed air consumption
- Stable operating performance
- Cost reduction due to less compressed air, filter replacements, transport and waste
- Suitable for air recirculation (dust category "M")
- Much larger open filter surface in comparison to standard filter media of dust category "L" or "M" as not calendered



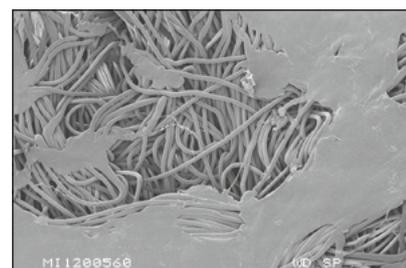
Upstream side of the innovative SMP-TEX textile  
Air permeability 100 l/dm<sup>2</sup> min at 200 Pa



Upstream side\* of a 550 g/m<sup>2</sup> standard needle felt  
Singed surface, air permeability 150 l/dm<sup>2</sup> min at 200 Pa



Upstream side\* of a 600 g/m<sup>2</sup> fine fibre needle felt,  
singed surface, air permeability 70 l/dm<sup>2</sup> min at 200 Pa



Upstream side\* of a standard fibre needle felt, calendered  
surface, BIA dust category "M", air permeability 110 l/dm<sup>2</sup>  
min at 200 Pa

\* The same enlargement scale is used in all four images.



## Service

**Tensile-elongation tester to test the mechanical rigidity of filter media**



**Microscopic examination of the filter media**



**Examination on the filter testing station**



### Laboratory

#### Precise, reliable, reproducible

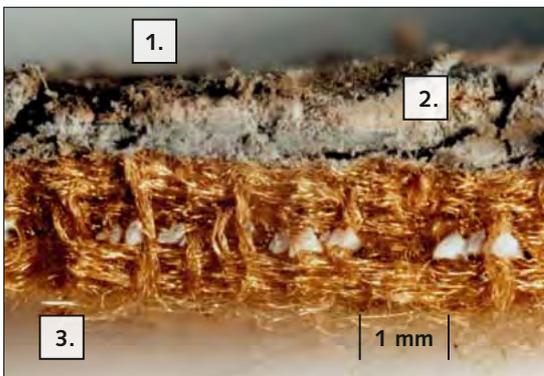
Our own corporate laboratory conducts all the requisite physical and chemical textile investigations, including visual inspection of dust and sludge samples and of used filter media. Separation and cleaning tests as well as tests on the separation efficiency of filter media helps us find the best solutions to problems. The results of these tests frequently allow conclusions to be drawn about problems in the filter. They help to clarify the reasons for these problems and indicate possible solutions. We would be pleased to check your filter media and supply you with a summary of the analysis results in a test report.

#### Cleaning filter media

##### Gentle, environmentally friendly, cost-effective

As a special service we offer the regeneration of used filter bags, filter pockets and filter cartridges. Cleaning is performed at our plant in Neubeckum as gently as possible using dry and/or wet processes and without releasing dust or sludge into the environment.

We naturally check the filter elements and eliminate signs of wear such as holes, chafe marks, etc. (where possible). Before a filter set is cleaned, we recommend a free inspection and cleaning test of two or three filter elements to determine whether the cleaning result will be satisfactory.



#### Cross-section

1. Raw gas side; upstream side
2. Dust cake
3. Clean gas side





## Service

### System inspection and assembly

#### Fast, professional, flexible

Our qualified installation team naturally also removes and installs filter elements and inspects other important system components. On request we can pre-coat equipment and perform a leakage test with fluorescent contrast powder. Your filter will be returned to you ready for operation and in the shortest time possible to minimise downtime.

### Maintenance and servicing agreements

Many filtration system components are subject to wear and should be inspected at regular intervals to ensure that your filter system operates to its optimum level and does not become a cost factor.

#### Regular servicing of your filter systems

- Increases operation reliability,
- Prolongs the service life of the individual components,
- Reduces unscheduled downtime,
- Ensures compliance with the statutory requirements,
- Protects our environment and fellow human beings,
- Helps reduce the overall costs of your system to a minimum.

We offer you maintenance and servicing agreements individually tailored to your system and requirements, and would also be pleased to draw them up in cooperation with you. Quickly, straightforwardly and at previously agreed costs.

#### We also offer

- Volume flow measurements
- Differential pressure measurements
- Gravimetric dust measurements



# Fibre table

	Resistant to				
	Continuous temperature in ° C *	Short-term temperature in ° C *	Acids	Alkalis	Hydrolysis (heat and moisture)
Polyvinylidene chloride (PVDC)	70	95	1	2	2
Polyvinyl chloride (PVC)	75	80	1	1	2
Cotton (BW)	80	95	4	3	3
Polypropylene (PP)	90	100	1	1	1
Polyamide 6 (PA 6)	95	110	4	2	1
Polyolefin temperature-resistant	100	120	1	1	1
Polyamide 11 (PA 11)	100	140	4	2	2
Polyacrylonitrile copolymer (PAN)	110	115	3	3	2
Polyamide 6.6 (PA 6.6)	110	115	4	2	2
Polyacrylonitrile homopolymer (PAN)	125	140	2	3	2
Polyester (PES)	150	150	3	4	4
Polyphenylene sulphide (PPS)	190	200	1	1	1
m-Aramid	200	220	3	3	4
Polyimide-amid	200	240	3	3	3
Polyimide (PI)	240	260	2	3	3
Polytetrafluorethylene (PTFE)	250	280	1	1	1
Glass	260	345	3	3	1

No liabilities ensue from the provision of this information.  
\* Depending on process conditions, fluctuations in continuous temperature resistance can occur.

Grading: 1 = excellent, 2 = good, 3 = limited, 4 = bad

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