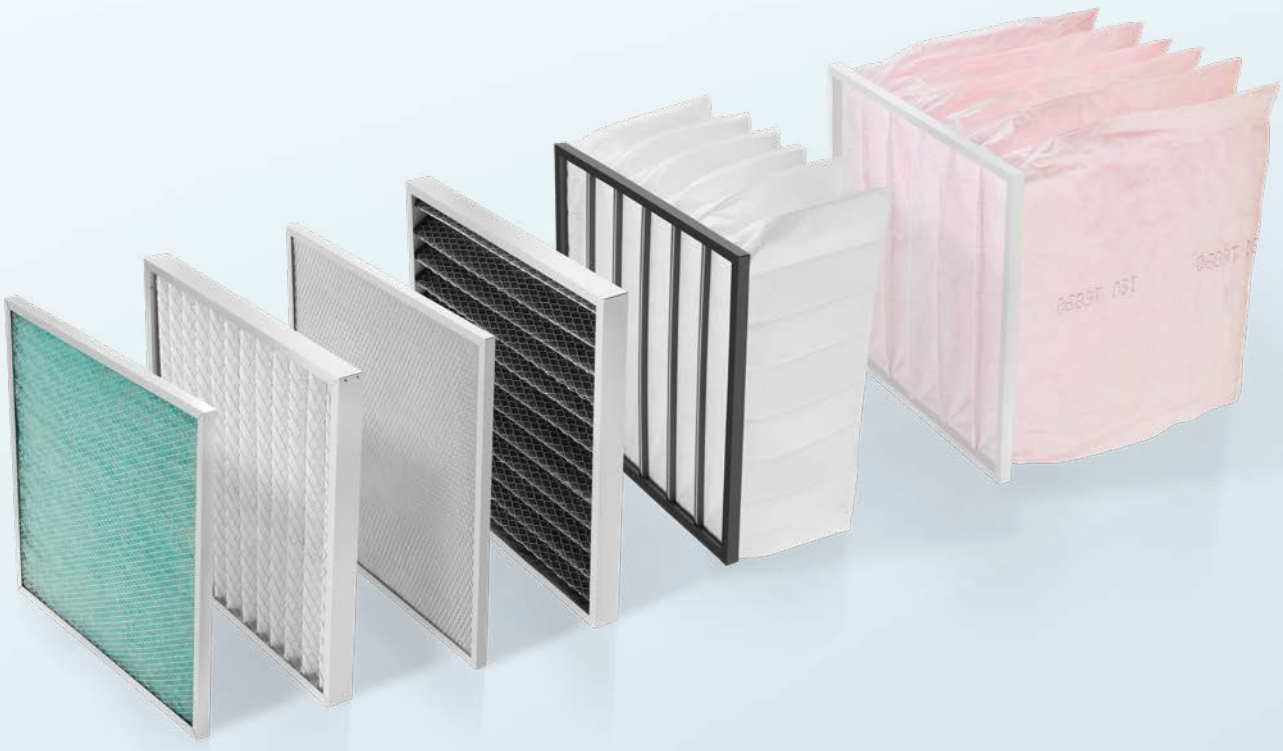
BWF Envirotec

HVAC Filters

Filter solutions for general and custom ventilation



The History of the Company

From the establishment of the company until today

BWF Envirotec is the world's leading supplier of complete industrial flue gas filtration solutions. BWF Envirotec's growing international presence is based on 15 production and distribution locations as well as a worldwide partner network. The headquarters of BWF Envirotec is located in Offingen, Bavaria.

BWF ENVIROTEC, POLAND

1995	The company started its activity as F.O.S. Filtertechnik Polska Sp. z o. o.
1999	Setting up the trade office in Warendorf, Germany
2005	F.O.S. Filtertechnik Polska Sp. z o. o. changes its name into ORWAT Filtertechnik Sp. z o. o.
2009	Construction of a new production hall for the Filtration Department and Warehouse
2017	ORWAT Filtertechnik Sp. z o. o. becomes a part of BWF Offermann, Waldenfels & Co. KG
2019	Renaming the company as BWF ORWAT POLAND Sp. z o. o.
2021	Construction of new warehouse
2022	Change of company name into BWF Poland Sp. z o.o.
2026	Launch of production of compact and HEPA filters

OUR OFFER INCLUDES:

- Pocket filters
- Cassette filters
- Compact filters
- Filter mats
- Filters for painting walls
- Absolute filters
- Glass pocket filters
- Filtering foam
- Hauben pocket filters
- Activated carbon filters
- Metal grease filters
- Filters with carbon mat
- High temperature filters HT
- Activated carbon
- Compact carbon filters
- Mounting frames
- Fine filters
- Wedge filters
- Columbus filters
- Sludge bags
- Roller filters
- Multi pockets

ISO 16890

Standard for air filters used in general ventilation

The **ISO 16890 Standard** introduced in 2017 requires filter manufacturers to test filters and report on their filtration efficiency.

These changes mark a new stage of development in the standard filter testing and classification process.

It provides reliable data on the actual filter efficiency, filtration efficiency, and thus enables the optimal selection of the filter depending on the environmental requirements. This standard measures the efficiency of the air filter in the particle size range from 0.3 µm to 10 µm. It classifies filters into 4 groups as ISO Coarse; ISO ePM10; ISO ePM2.5; ISO ePM1.

ISO 16890 CLASSIFICATION

MINIMUM REQUIREMENT			
	ePM1 min.	**ePM2.5 min.**	**ePM10 min.**
ISO Coarse	–	–	< 50 %
ISO ePM10	–	–	≥ 50 %
ISO ePM2.5	–	≥ 50 %	–
ISO ePM1	≥ 50%	–	–

PARTICLE DIAMETER SIZE RANGE	
Efficiency	**Size Range**
ePM10	0.3 ≥ x ≥ 10
ePM2.5	0.3 ≥ x ≥ 2.5
ePM1	0.3 ≥ x ≥ 1

EN 1822

HEPA filter test and standards

The EN 1822 Standard defines the testing and classification of absolute filters. This standard divides absolute filters into 3 different groups as E, H and U.

E – EPA filters efficient air filters
H – HEPA filters high efficiency air filters
U – ULPA filters ultra-low penetration air filters

EN 1822 Standard, provides a detailed classification system based on their filtration efficiency and ability to capture particles of various sizes. It outlines testing methods such as the leak test, the efficiency test, and the scanning test to ensure the filters meet their specified performance criteria.

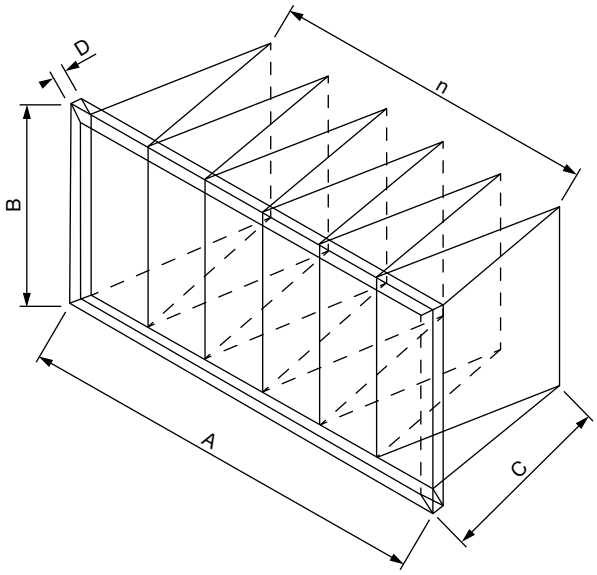
EN 1822 STANDARD

GROUP	CLASS	INTEGRAL VALUE		LOCAL VALUE	
		Efficiency [%]	Penetration [%]	Efficiency [%]	Penetration [%]
EPA	E10	≥ 85	≤ 15		
	E11	≥ 95	≤ 5		
	E12	≥ 99.5	≤ 0.5		
HEPA	H13	≥ 99.95	≤ 0.05	≥ 99.75	≤ 0.25
	H14	≥ 99.995	≤ 0.005	≥ 99.975	≤ 0.025
ULPA	U15	≥ 99.9995	≤ 0.0005	≥ 99.9975	≤ 0.0025
	U16	≥ 99.99995	≤ 0.00005	≥ 99.99975	≤ 0.00025
	U17	≥ 99.999995	≤ 0.000005	≥ 99.9999	≤ 0.00001

Pocket Filters

The most frequently used filtering element in ventilation systems

Filter pockets are produced in a metal or synthetic frame. The number of pockets depends on the technical aspects of ventilation systems. The raw materials used in the production process, filter medium and production technology guarantee proper filtration properties and feature a long service life (as desired by customers).



POCKET FILTERS AxBxC, n
Dimensions:
A [mm] - length
B [mm] - width
C [mm] - pocket length with frame
D [mm] - frame thickness
n [pcs] - quantity of pockets

STANDARDS

Pocket filters are manufactured to standards:

- ISO 16890
- PN EN 779:2012

Fire rating:

- F1 wg DIN 53438

MATERIALS

The arrangement of polyester or polypropylene fibres with a progressive structure guarantees a minimum ratio between filter efficiency and resistance.

CONSTRUCTION

Pocket filters in metal frames

A filter frame made of galvanised sheet steel guarantees long-term corrosion resistance. Filtering pockets stitched with industrial sewing machines ensure a long-term bond. Mounted in the frame on steel wires glued to the frame with temperature-resistant adhesive. Depending on the dimensions, the in-curved edge of the wire ensures proper adherence to the frame and prevents it from slipping off and coming unglued. The sides of pocket packages are stuck to the frame and sealed with technical foam which guarantees a proper sealing.

Pocket filters in plastic frames

The filter frame is made from black plastic. Pockets are joined together with a specially designed profile made from plastic using a pneumatic machine or sewing machines. Both of them provide suitable adhesion and fitting in the filter frame. The sides of pocket packages are stuck to the frame and sealed with technical foam, which guarantees proper sealing.

STANDARD DIMENSIONS

Frame sizes in pocket filters are fully standardized. The most popular are:

- 592 x 592 mm
- 490 x 592 mm
- 287 x 592 mm
- 287 x 287 mm

Frame thickness:

- 20 mm, 25 mm

Pocket length:

- 200 mm, 300 mm, 360 mm, 500 mm, 600 mm

BWF Envirotec produces non-standard dimensions upon request or according to a sent format.

APPLICATION

- **G2, G3, G4** – in ventilation and air-conditioning installations of rooms with average air purity requirements, e.g. hotels, office buildings, shopping centres, etc.
- **M5, M6, F7, F8, F9** – in ventilation and air-conditioning installations of rooms with high air purity requirements, e.g. hospitals, food and electronics industries, etc.

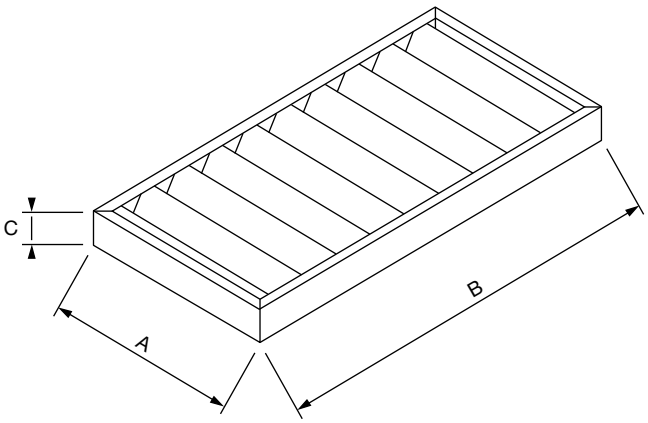
TECHNICAL DATA POCKET FILTERS

CLASSIFICATION ACCORDING TO THE STANDARDS OF PN EN 779:2012		G3	G4	M5	M6	F7	F8	F9
FILTRATION EFFECTIVENESS ACCORDING TO ISO 16890	%	COARSE	COARSE	ePM10 50 - 70	ePM10 60 - 80	ePM1 40 - 65	ePM1 65 - 90	ePM1 80 - 90
		final results are given in the offer or when ordering						
Frame dimension	mm	592 x 592						
Airflow	m^3/h	3400	3400	3400	3400	3400	3400	3400
Initial pressure drop	Pa	18 - 55	22 - 65	45 - 65	55 - 95	90 - 140	95 - 175	110 - 195
Recommended final pressure drop	Pa	250	250	450	450	450	450	450
Max. permissible operating temperature	°C	plastic frame 80, metal frame 100						
Pocket length	mm	200, 300, 360, 500, 600						
Number of pockets	pcs	6 or 8						

Cassette Filters

Commonly used filters for pre-treatment

Cassette filters are most frequently used as the first filtration level in air conditioning and ventilation units. Our technical potential enables us to produce filters using a minipleat filter medium (to increase filter surface) or lying flat. Depending on the dimensions of the filter, additional bars are installed. The unit is branded with a dimension label to help to identify the product properly.



CASSETTE FILTER
A [mm] - width
B [mm] - length
C [mm] - frame thickness

STANDARDS

Cassette filters are manufactured to standards:

- ISO 16890
- PN EN 779:2012

Fire rating:

- F1 wg DIN 53438

MATERIALS

Arrangement of polyester or polypropylene fibres with a progressive structure guarantees a minimum ratio between filter efficiency and resistance.

CONSTRUCTION

Cassette filters – media lying flat

A filter frame made of galvanised sheet steel guarantees long-term corrosion resistance. A filter medium is positioned between two meshes made from galvanized sheet steel. Meshes enable stabilization and proper functioning of the filter medium. The frame is closed with a blind rivet.

Cassette filters – pleated material (z-line)

A filter frame made of galvanised sheet steel guarantees long-term corrosion resistance. The filter medium is pleated by machine on galvanised sheet steel mesh. The mesh enables stabilization and proper functioning of the filter medium. The frame is closed with a blind rivet and inductively welded.

STANDARD DIMENISONS

Frame made from galvanized sheet metal, plastic or cardboard:

- 592 x 592 mm
- 287 x 592 mm
- 625 x 500 mm

Frame thickness:

- 20 mm, 25 mm,
- 50 mm, 96 mm, 100 mm

APPLICATIONS

- **G2, G3, G4, M5** – used in air-conditioning and ventilation units in rooms with average requirements of air purity e.g.: hotels, office buildings, shopping centres etc.

BWF Envirotec manufactures non-standard dimensions upon request or according to drawings and specifications of our customers

TECHNICAL DATA CASSETTE FILTERS

CLASSIFICATION ACCORDING TO THE STANDARDS OF PN EN 779:2012		G3	G4	M5
FILTRATION EFFECTIVENESS ACCORDING TO ISO 16890	%	COARSE	COARSE	ePM10 50-70
		final results are given in the offer or when ordering		
Frame dimension	mm	592 x 592		
Construction		flat or pleated, depending on the thickness		
Airflow	m^3/h	2500	2500	2500
Initial pressure drop	Pa	20 - 45	30 - 55	50 - 75
Recommended final pressure drop	Pa	250	250	450
Max. permissible operating temperature	°C	plastic frame 80, metal frame 100		
Frame thickness	mm	6 - 100		

Cassette Filters

Cassette filters with thermosetting pleat – without steel mesh

In response to the market needs, we introduce a new technical solution for cassette filters to our catalogue – the innovation based on the elimination of the steel mesh from the filter structure.

Cassette filters are the most frequently used filters of the first stage filtration in air conditioning and ventilation units. The new technical solution enables non-woven filter fabric to be pleated with the use of thermal treatment, which results in a stiff pleat placed in the filter frame. This design enables the elimination of the steel mesh as an additional filter frame. Thanks to this, we obtain less weight and a larger filtration area while maintaining the highest quality parameters of the filter.

TECHNICAL DATA

Standards:

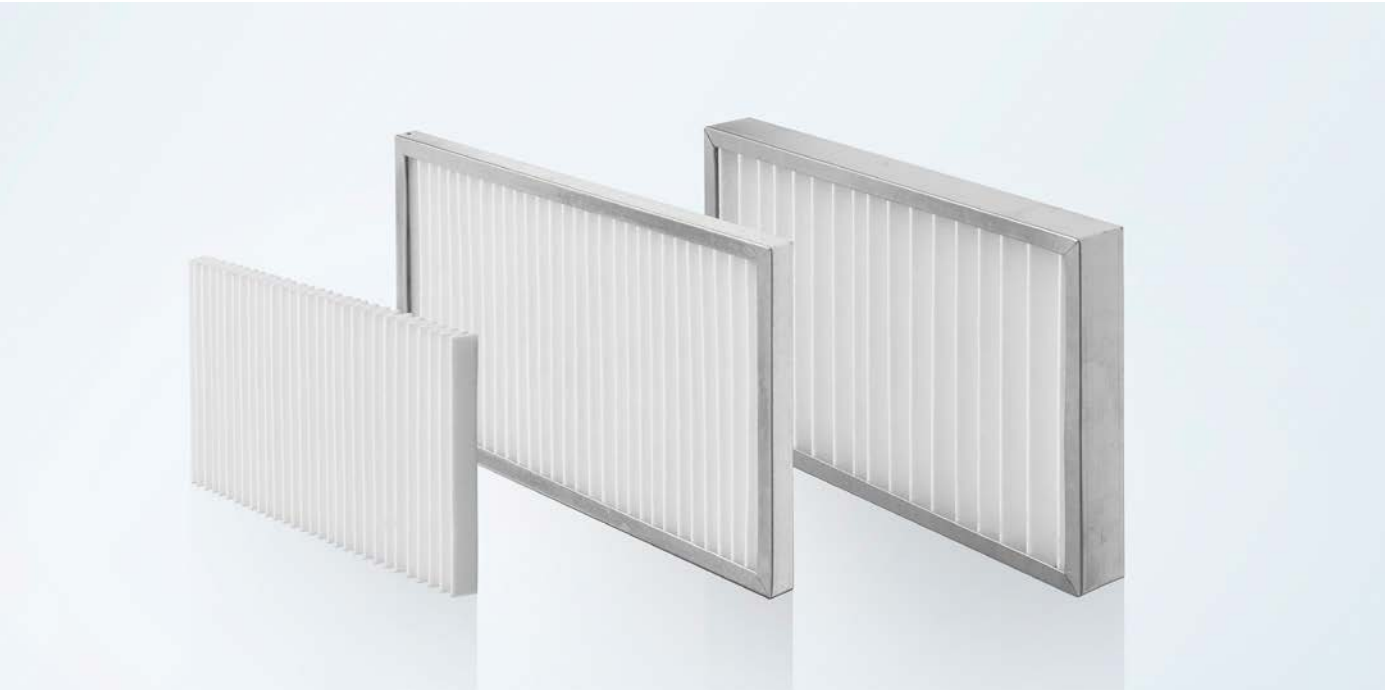
- ISO 16890
- PN EN 779:2012

Flammability class:

- F1 according to DIN 53438

Structure:

- pleat height: 20 mm – 100 mm
- frame thickness: 20 mm – 100 mm
- frame type: galvanized steel or plastic



Compact Filters

Used as fine filters or absolute filters depending on filter classification

FILTRATION CLASS

M6, F7, F8, F9 acc. standards:

- ISO 16890
- PN EN 779:2012

H10, H11, H12, H13 acc. standards:

- EN 1822:2009

FRAME DIMENSIONS AND TYPE

Plastic frame

- 592 x 287 x 287 mm
- 592 x 592 x 287 mm
- 592 x 490 x 287 mm

Standard 4V – 4 humps
Optional 3V – 3 humps or 2V – 2 humps

MATERIALS

The filter medium is made from fibreglass, waterproof paper characterised by high efficiency, formed of micro-fibreglass warp and a mixture of synthetic fibres. Filters available in our offer fall within classes M6 – H13, therefore they can be used in clean rooms in which air purity requirements are high. Filters are available in versions to operate in high temperatures (HT) or carbon fibre.

APPLICATION

Used as final stage filters in air-conditioning and ventilation systems or as pre-filters before absolute filters to extend filter life. Filters are good for many sectors such as: medicine, chemical industry, pharmacological industry and many others.

CONSTRUCTION

Frame is injection moulded, made from polystyrene.

TECHNICAL DATA COMPACT FILTERS

FILTRATION CLASS	dimensions [mm]		M6	F7	F8	F9	H10	H11	H12
FILTRATION EFFECTIVENESS ACCORDING TO ISO 16890		%	ePM10 70	ePM1 50	ePM1 70	ePM1 85	x	x	x
Type	592 x 592 x 287	m^3/h	3400	3400	3400	3400	4000	3000	3000
	592 x 490 x 287		2700	2700	2700	2700	3200	2400	2400
	592 x 287 x 287		1700	1700	1700	1700	2000	1500	1500
Initial pressure drop		Pa	60	70	80	105	180	230	230
Recommended final pressure drop		Pa	250	250	250	250	300	450	450
Max. permissible operating temperature		°C				70			
Number of humps		pcs				4			

Filter Mat

Perfect for many industrial branches

STANDARDS

Filter classification:

- ISO 16890
- PN EN 779:2012

Fire rating:

- F1 wg DIN 53438

MATERIALS

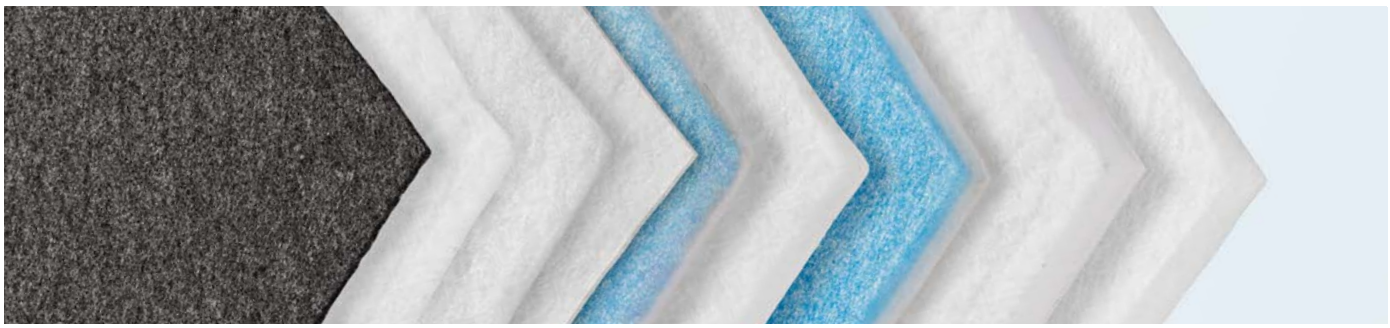
Arrangement of polyester or polypropylene fibres with a progressive structure, thermally or mechanically hardened, or by binding measures.

APPLICATION

Used in air-conditioning and ventilation units in rooms with average requirements for air purity e.g.: hotels, office buildings, shopping centres etc.

DIMENSIONS

Available in rolls or to exact specifications.



TECHNICAL DATA FILTER MAT

FILTRATION CLASS		G2	G3	G3	G4	G4	G4	M5	M5	M5	Carbon mat
Type		6305	6333	92130	93180	93181	94270	95592	95591	95590	5165
Grammage/Weight	g/m²	100	130	130	220	220	380	320	500	600	260
Material		100 % PET									Activated carbon-coated polyester
Roll dimensions	m	2 x 100	2 x 80	2 x 60	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 20	2 x 125
Thickness	mm	4 - 6	8	10 - 14	19 - 21	16 - 19	22 - 24	18 - 20	16 - 19	20-24	6
Max. permissible operating temperature	°C	100									150
Colour		White	White	White-blue	White-blue	White	White	White	White with mesh	White with mesh	Black

Paint-Stop Mat and Filter Paper

Basic elements for spray booths

The most frequently used filter mats used in spray booths are: ceiling mat M5, filter mat Paint-Stop and filter paper type labyrinth.

MATERIAL: PAINT-STOP MAT

100 % glass fibre with a progressive structure with laminated discharge side. The material is silicone free and acetone resistant. A green colour is on the air outlet side.

Available dimensions

Thickness: 1”, 2”, 3” or 4”. Mat is available in rolls, the most popular widths are: 0.75 m; 1 m; 1.25 m; 1.5 m; 2 m.
It is possible to cut it to any size.

MATERIAL: LABYRINTH TYPE FILTER PAPER

Two layers of pleated, perforated cardboard glued together. Two versions are available: brown or a white-brown colour.

Available dimensions

- Available widths: 0.75 m; 0.90 m and 1.00 m.
- Each pack includes 10 m.
- Can be cut to desired dimensions.

Application

Used in spray booths and painting walls to collect paint particles and remove them from the air precisely.

TECHNICAL DATA PAINT-STOP MAT

FILTRATION CLASS		G2	G2/3	G2/3
Type		96950	96950	96950
Grammage/Weight	g/m²	210	240	350
Material		Paint-Stop		
Roll dimensions	m		j/w	
Thickness	inch	2“	3“	4“
Max. permissible operating temperature	°C		100	
Colour		White-green		

TECHNICAL DATA FILTER PAPER

KIND		ANDREAE STARTER	ANDREAE ORGINAL
Type		Without stops	With stops
Material		Cardboard	
Roll dimensions	m	j/w	
Max. permissible operating temperature	°C	100	
Colour		White/bronze	

*** For more information visit our website*

Absolute Filters

Elements of the final filtration stage in ventilation systems

FILTRATION CLASS

H10, H11, H12, H13, H14, U15 acc. standards

- EN 1822:2009

MATERIAL

Waterproof paper is made from high efficiency fibreglass, formed of micro-fibreglass warp and a mixture of synthetic fibres.

CONSTRUCTION

Filter made from pleated materials is called minipleat. Depending on the type, it can be separated by an aluminium foil separator or cotton threads separator, or glue. Filter medium is placed in an MDF frame (wooden board), made from aluminium or galvanised sheet. Normally, from the front of the frame an elastic polyurethane seal is placed.

STANDARD DIMENSIONS

Frame dimensions (width x height):

- 305 x 305 mm
- 305 x 610 mm
- 457 x 457 mm
- 610 x 610 mm

Frame thickness:

- 68, 78, 150, 292 mm

APPLICATION

Used as final stage filters in air-conditioning and ventilation systems. Used in many sectors such as: medicine, chemical industry, pharmacological industry and many others where high air quality is required.

TECHNICAL DATA

FILTER CLASS	Frame size [mm]		H13	H13	H13
Frame thickness		**mm**	78	150	292
Minipleat thickness		**mm**	58	120	120
Type	610 x 610	**m³/h**	670	1920	1920
	305 x 610		335	950	950
	305 x 305		155	440	440
Initial pressure drop		**Pa**	150	250	250
Recommended final pressure drop		**Pa**	450	550	550
Max. permissible operating temperature		**°C**		80	

BWF Envirotec in the Industry

We work for you every day
experience, quality, development

BWF Envirotec, Poland offers a wide range of air filters suitable for use in various branches of industries and services.

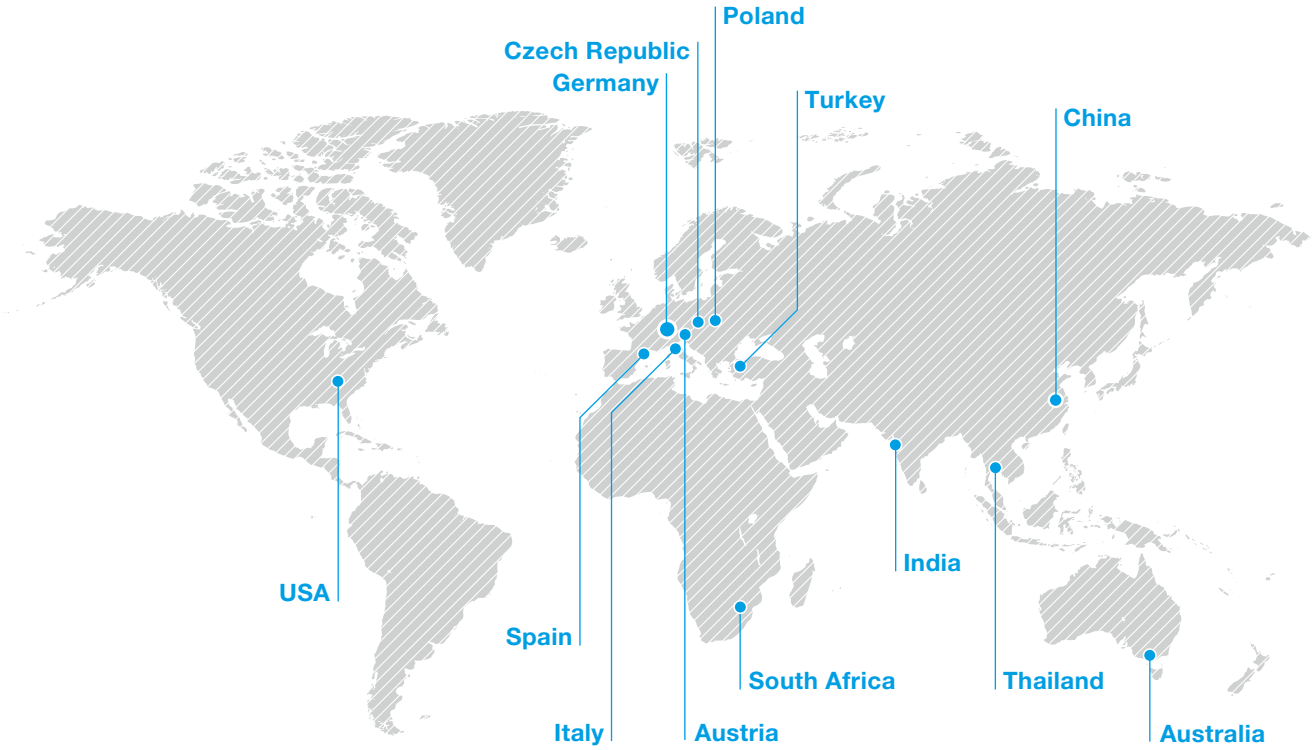
Our filters are used by the following industries:

- Automotive
- Hotels
- Hospitals
- Pharmaceutical industry
- Chemical industry
- Wood processing
- Food industry (dairies)
- HVAC installers and service technicians

Our Locations

Working for you worldwide

BWF Envirotec's growing international presence is based on 15 production, sales and services locations as well as a worldwide partner network.



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