

...



MFI-PLA



MFI-E10-SPC

Mini Pleat filter insert type MFI



MFI-H14-SPC

Mini Pleat filter insert type MFI, construction SPC



EUROVENT-ZERTIFIZIERUNG

Eurovent certification



TESTED TO VDI 6022

## MFI

### COMPACT CONSTRUCTION FOR LARGE VOLUME FLOW RATES

Prefilters or final filters for the separation of fine dust and particulate filters for the most critical requirements in ventilation systems

- Filter groups ISO ePM10, ISO ePM1 (fine dust filter) and EPA, HEPA (particulate filter)
- Performance data tested according to ISO 16890 or to EN 1822-1 and ISO 29463-2 to ISO 29463-5
- Eurovent certification for fine dust filters
- Meets the hygiene requirements of VDI 6022
- High energy efficiency class according to Eurovent
- Optimised energy efficiency of the PLA-ECO construction in ISO ePM1
- Filter media for special requirements, glass fibre papers, with spacers made of hot-melt adhesive or textile threads
- Low initial differential pressure due to ideal pleat position and largest possible filter area
- Compact V-design with low installation depths
- Fitting into standard cell frames for filter walls (type SIF), into mounting frames (type MF), or into universal casings (type UCA) for duct installation

#### Optional equipment

- ATEX construction for protection zones 1 and 2 as well as 21 and 22



ATEX-ZERTIFIZIERUNG

ATEX construction optional

## Description

---

### Application

- Mini Pleat filter insert type MFI for the separation of fine dust and suspended particles such as aerosols, toxic dusts, viruses and bacteria from the supply and extract air in ventilation systems with large volume flow rates and the requirement for long filter life
- Fine dust filter: Prefilter or final filter for the separation of fine dust in ventilation systems.
- Particulate filter: Main or final filter used for the most critical requirements of air cleanliness and sterility in areas such as industry, research, medicine, pharmaceuticals, and nuclear engineering

### Special characteristics

- Optimised energy efficiency of the PLA-ECO construction in ISO ePM1
- Leakage test is standard for all particulate filters of classes H13, H14

### Classification

- Eurovent certification for fine dust filters
- Meets the hygiene requirements
- Certificate of conformity for use in areas with a potentially explosive atmosphere

### Nominal sizes

#### Filter classes

##### Filter groups

- ISO ePM10 to ISO 16890
- ISO ePM1 to ISO 16890
- EPA according to EN 1822
- HEPA according to EN 1822

##### Filter classes

- ePM10 80%
- ePM1 55%
- ePM1 65%
- ePM1 85%
- E10
- E11
- H13
- H14

## General Information

---

### Options

- Number of filter packs
- FNU: Flat seal on the upstream side
- FND: Flat seal on the downstream side
- OT: Oil mist test (only for filter classes H13, H14)
- OTC: Oil mist test with certificate (only for filter classes H13, H14)

### Construction

- PLA: Frame made of plastic
- PLA-ECO: plastic frame, optimised energy efficiency
- GAL: Frame made of galvanised steel
- SPC: Frame made of galvanised steel, powder-coated RAL 9010, pure white
- EX: protection zones 1 and 2 and 21 and 22 (only in combination with galvanised steel frame)

### Construction features

- Compact V-design
- Fine dust filter (filter groups according to ISO 16890) as standard without seal, optionally with flat seal
- Filter classes E10, E11, H13 and H14 as standard with flat seal
- Filter classes E11, H13 and H14 with protection grid on the downstream side

### Materials and surfaces

- Filter media made of high-quality, moisture-resistant glass fibre papers, pleated
- Spacers provide a uniform spacing of the pleats
- Joint sealing compound made of permanently elastic two-component polyurethane adhesive
- Frame made of plastic (option), galvanised steel or of galvanised sheet steel, powder-coated RAL 9010, pure white

### Standards and guidelines

- Test according to ISO 16890; international standard for general room air distribution; classification of arrestance efficiency based on the measured fractional arrestance efficiency, which is processed into a reporting system for the fine dust arrestance efficiency (ePM)
- For fine dust filters, the fractional arrestance efficiency of a certain size range is determined by aerosols (DEHS and KCl)
- The filters are classified into filter groups ISO ePM10 and ISO ePM1 depending on the tested values
- Testing of particulate filters to EN 1822 (EPA, HEPA and ULPA filters): European standard for the testing of filtration performance in the factory, particle counting method using a liquid test aerosol
- Uniform classification of particulate filters according to efficiency, using a test aerosol whose average particle size lies within the minimum efficiency (MPPS)
- Particulate filters are classified according to the values determined for the local filtration efficiency and the overall filtration efficiency as EPA (filter classes E10, E11, E12), HEPA (filter classes H13, H14) or ULPA (filter classes U15, U16, U17)
- Hygiene conformity: VDI 6022, VDI 3803, DIN 1946 Part 4, ÖNORM H 6020, SWKI VA 104-01 and SWKI 99-3 and EN 13779

### Classification

- Eurovent certification for fine dust filters
- Meets the hygiene requirements
- Certificate of conformity for use in areas with a potentially explosive atmosphere

## TEKNISK INFORMATION

Technical data, Quick sizing, Specification text, Order code, Related products



Fractional efficiency ePM10 [%] to ISO 16890	80	–	–
Fractional efficiency ePM1 [%] to ISO 16890	–	60	85
Initial differential pressure [Pa] at nominal volume flow rate	90	110	140
Recommended final differential pressure [Pa]	450	450	450
Max. operating temperature [°C]	80	80	80
Maximum relative humidity [%]	100	100	100

Filter class according to EN 1822	E10	E11	H13	H14
Efficiency [%] according to EN 1822	> 85	> 95	> 99.95	> 99.995
Initial differential pressure [Pa] at nominal volume flow rate	160	160	265	300
Recommended final differential pressure [Pa]	450	450	600	600
Max. operating temperature [°C]	80	80	80	80
Maximum relative humidity [%]	100	100	100	100

#### Specification text

Mini Pleat filter insert type MFI for the separation of fine dust and suspended particles such as aerosols, toxic dusts, viruses and bacteria from the supply and extract air in ventilation systems. . Use as fine dust filters, i.e. as prefilters or final filters in ventilation systems; or as particulate filters, i.e. main or final filters for the most critical requirements of air cleanliness and sterility in areas such as industry, research, medicine, pharmaceuticals, and nuclear engineering. Compact depth construction, suitable for systems with high volume flow rates and a requirement for long filter life. The filter medium is made of high-quality, moisture-resistant glass fibre papers, with spacers. Low initial differential pressure due to ideal pleat position and largest possible filter area. Mini Pleat filter inserts available in market sizes, filter groups ISO ePM10, ISO ePM1 (fine dust filters) and EPA, HEPA (particulate filters). As a fine dust filter (filter groups according to ISO 16890) as standard without seal, optionally available with flat seal, as a particulate filter Mini Pleat filter inserts are equipped with a flat seal. Filter classes E11, H13 and H14 as standard with grip protection on the downstream side. Mini Pleat filter insert as fine dust filters are certified according to Eurovent. Mini Pleat filter inserts MFI are hygienic conform to VDI 6022.

The filter insert MFI with optional EX protection MFI-EX may be used in areas with a potentially explosive atmosphere of zones 1 and 2 and zones 21 and 22 (EX II 2G Ex h IIC Gb and EX II 2D Ex h IIIB Db).The filter must be grounded. All conductive and dissipative parts must be connected together and grounded. Conductive dusts are excluded from the application. Under no circumstances should metallic foreign materials enter the filter. Ambient temperature range:  $-40\text{ °C} \geq T_a \geq +80\text{ °C}$ .

#### Special characteristics

- Optimised energy efficiency of the PLA-ECO construction in ISO ePM1
- Leakage test is standard for all particulate filters of classes H13, H14

#### Materials and surfaces

- Filter media made of high-quality, moisture-resistant glass fibre papers, pleated
- Spacers provide a uniform spacing of the pleats
- Joint sealing compound made of permanently elastic two-component polyurethane adhesive
- Frame made of plastic (option), galvanised steel or of galvanised sheet steel, powder-coated RAL 9010, pure white

#### Construction

- Compact V-design
- Fine dust filter (filter groups according to ISO 16890) as standard without seal, optionally with flat seal
- Filter classes E10, E11, H13 and H14 as standard with flat seal
- Filter classes E11, H13 and H14 with protection grid on the downstream side

#### Construction

PLA: Frame made of plastic

PLA-ECO: plastic frame, optimised energy efficiency

GAL: Frame made of galvanised steel

SPC: Frame made of galvanised steel, powder-coatedRAL 9010, pure white

EX: protection zones 1 and 2 and 21 and 22 (only in combination with galvanised steel frame)

#### Sizing data

- Filter group [ISO 16890]
- Efficiency [%]
- Filter class [EN 1822]
- Volume flow rate [m<sup>3</sup>/h]
- Initial differential pressure [Pa]
- Nominal size [mm]

MFI	-	ePM1	-	65%	-	SPC	/	592 x 592 x 292	x	8	/	PD	/	FND	/	OT
1		2		3		4		5		6		7		8		9

### 1 Type

MFI Mini Pleat filter insert

### 2 Classification

ePM10 Fractional efficiency ePM10 to ISO 16890

ePM1 Fractional efficiency ePM1 to ISO 16890

E10 Particulate filter according to EN 1822

E11 Particulate filter according to EN 1822

H13 Particulate filter according to EN 1822

H14 Particulate filter according to EN 1822

### 3 Efficiency [%]

according to ISO 16890 (not with E10, E11, H13, H14)

### 4 Construction

PLA Frame made of plastic

PLA-ECO plastic frame, optimised energy efficiency

GAL Frame made of galvanised steel

SPC Frame made of galvanised steel, powder-coated RAL 9010, pure white

EX Protection zones 1 and 2 as well as 21 and 22 (only in combination with GAL)

### 5 Nominal size [mm]

B x H x T

### 6 Number of filter packs

6

8

### 7 Protection grid

No entry: none

PD Protection grid on the downstream side (only for filter classes E11, H13, H14)

### 8 Seal

No entry: none

FNU Flat seal on the upstream side

FND Flat seal on the downstream side

### 9 Testing

No entry: no leakage test

OT Oil mist test (only for filter classes H13, H14)

OTC Oil mist test with certificate (only for filter classes H13, H14)

### MFI-H13-SPC/592x592x292x8/PD/FND/OT

**Filter class** H13 particulate filter according to EN 1822

**Construction** frame made of galvanised steel, powder-coated RAL 9010, pure white

**Nominal size** 592 x 592 x 292 mm

**Number of filter packs** 8

**Protection grid** downstream side

**Seal** Flat seal on the downstream side

**Test** oil mist test

## Variants, Dimensions



Nominal sizes

• B x H x T [mm]

MFI-PLA



MFI-E10-SPC



## MFI-H14-SPC



Mini Pleat filter insert type MFI, construction SPC

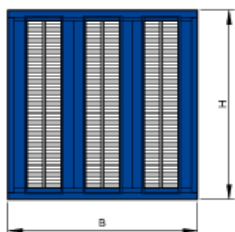
①			Number of filter packs	Filter class	②		③	④	⑤
B [mm]	H [mm]	T [mm]			qv [l/s]	qv [m³/h]	ΔpA [Pa]	m²	kg
592	287	292	6	ePM10 80 %	590	2125	90	7,6	3
592	490	292	6	ePM10 80 %	983	3540	90	13,7	4
592	592	292	6	ePM10 80 %	1181	4250	90	16,8	4,5
592	287	292	6	ePM1 60 %	590	2125	110	7,6	3
592	490	292	6	ePM1 60 %	983	3540	110	13,7	4
592	592	292	6	ePM1 60 %	1181	4250	110	16,8	4,5
592	287	292	6	ePM1 85 %	590	2125	140	7,6	3
592	490	292	6	ePM1 85 %	983	3540	140	13,7	4
592	592	292	6	ePM1 85 %	1181	4250	140	16,8	4,5

①			Number of filter packs	Filter class	②		③	④	⑤
B [mm]	H [mm]	T [mm]			qv [l/s]	qv [m³/h]	ΔpA [Pa]	m²	kg
592	287	292	6	ePM10 80 %	590	2125	90	7,7	4
592	490	292	6	ePM10 80 %	983	3540	90	14,2	6
592	592	292	6	ePM10 80 %	1181	4250	90	17,5	6,5
592	287	292	6	ePM1 60 %	590	2125	110	7,7	4
592	490	292	6	ePM1 60 %	983	3540	110	14,2	6
592	592	292	6	ePM1 60 %	1181	4250	110	17,5	6,5
592	287	292	6	ePM1 85 %	590	2125	140	7,7	4
592	490	292	6	ePM1 85 %	983	3540	140	14,2	6
592	592	292	6	ePM1 85 %	1181	4250	140	17,5	6,5

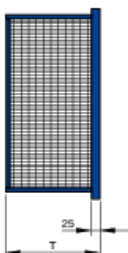
...

①			Number of filter packs	Filter class	②		③	④	⑤
B [mm]	H [mm]	T [mm]			qv [l/s]	qv [m³/h]	ΔpA [Pa]	m²	kg
592	287	292	6	E10	590	2125	160	7,7	4
592	490	292	6	E10	983	3540	160	14,2	6
592	592	292	6	E10	1181	4250	160	17,5	6,5
592	287	292	8	E11	417	1500	160	13,6	7
592	490	292	8	E11	694	2500	160	25	10
592	592	292	8	E11	833	3000	160	30,6	12
592	287	292	8	H13	417	1500	265	13,6	7
592	490	292	8	H13	694	2500	265	25	10
592	592	292	8	H13	833	3000	265	30,6	12
592	287	292	8	H14	417	1500	300	13,6	7
592	490	292	8	H14	694	2500	300	25	10
592	592	292	8	H14	833	3000	300	30,6	12

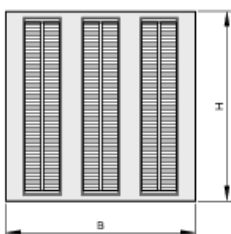
MFI-PLA



MFI-PLA



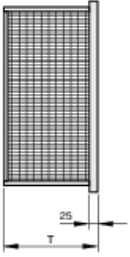
MFI-GAL/-SPC



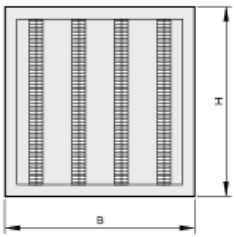
MFI-GAL/-SPC



...



MFI-GAL/-SPC



MFI-GAL/-SPC

