# Product Data Sheet
## Filter Elements EFST..V

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|---|---|---|

### Field of application

Type EFST filter elements of filtration grade V are mainly designed for separating coarse dust contaminants (dust filtration, dry-type filtration) from compressed air flows, e.g. for eliminating dust from granulate fillings in adsorption dryers or activated carbon absorbers. Larger quantities of liquid drops are also separated (wet filtration). Filtration grade V is therefore used, if increased amounts of solid or liquid coarse contaminants are to be removed from the compressed air flow.

### Features

Type EFST filter elements of filtration grade V consist of a pleated filter media compactly located between the two stainless steel cylinders and therefore completely integrated in the filter element.

Thanks to the pleating technology the effective filter surface is increased many times, resulting in a higher dirt collecting capacity and a longer service life. At the same time the flow resistance and therefore differential pressure generated by the filter element are considerably reduced. The media is located in the two stainless steel cylinders. In this way, breaking off completely or in parts of the filter layer used for filtration is impossible.

All the features mentioned above are a contribution to a filter element which has a long service life (high dirt collecting capacity) combined with economic efficiency (low differential pressure) and maximum operating safety (integrated design).



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## Basic Data

| Model | Nominale volume flow (VN)*1 | Max. operating pressure | Min./Max. operating temperature |
|---|---|---|---|
| EFST 25 | 35 m³/h (1.00) | --- | +2°C - +65°C |
| EFST 30 | 50 m³/h (1.00) | | |
| EFST 50 | 70 m³/h (1.02) | | |
| EFST 70 | 100 m³/h (0.67) | | |
| EFST 90 | 160 m³/h (0.87) | | |
| EFST 110 | 330 m³/h (0.91) | | |
| EFST 120 | 500 m³/h (0.92) | | |
| EFST 130 | 800 m³/h (0.91) | | |
| EFST 140 | 1,000 m³/h (0.93) | | |
| EFST 170 | 1,500 m³/h (0.92) | | |
| EFST 180 | 2,000 m³/h (0.95) | | |
| EFST 190 | 2,500 m³/h (0.95) | | |

*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure
The factor in brackets specifies the relation of the flow of the filter element for each cm² of surface compared to the EFST30 reference element.

## Purity classes according to ISO 8573-1

| Contamination | |
|---|---|
| Solid particles *2 | Class 6 |
| Water content | --- |
| Total oil content*2 *3 | Class 4 |

*2 - typical result, on the assumption of suitable inlet concentrations as well as operating and marginal conditions.
*3 - the amount of oil vapour is not taken into account and may reduce the purity class.

## Volume flow conversion factors

### «F1» - Pressure (in bar)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.125 | 0.25 | 0.38 | 0.50 | 0.63 | 0.75 | 0.88 | 1.00 | 1.13 | 1.25 | 1.38 | 1.50 | 1.63 | 1.75 | 1.88 | 2.00 | 2.13 |

| 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | >400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.1 | 5.1 | 6.5 | 7.6 | 8.5 | 9.3 | 9.9 | 10.5 | 11.0 | 11.5 | 11.9 | 12.3 | 12.7 | 13.0 | 13.0 | 13.0 | 13.0 |

### «F2» - Temperature (in °C)

| 2 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.07 | 1.05 | 1.04 | 1.02 | 1.00 | 0.98 | 0.97 | 0.95 | 0.94 | 0.92 | 0.91 | 0.89 | 0.88 | 0.87 |

### Calculation of the converted volume flow

| Converted volume flow VK | Nominal required volume flow $VN_{min}$ |
|---|---|
| *VK = VN x F1 x F2* | $VN_{min}$ *= VK / F1 / F2* |

*VK* : Converted volume flow calculated for the operating conditions
$VN_{min}$: Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions




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## Maintenance rules

| Pressure range | |
|---|---|
| 0-4 bar | Replacement of filter element once a year, the latest on a differential pressure of 50 mbar |
| 5-16 bar | Replacement of filter element once a year, the latest on a differential pressure of 350 mbar |
| 17-50 bar | Replacement of filter element once a year, the latest on a differential pressure of 500 mbar |
| > 50 bar | Replacement of filter element once a year, the latest on a differential pressure of 750 mbar |

## Product specific data

| Specification | |
|---|---|
| Differential pressure, dry*4 | 10 mbar |
| Differential pressure, wet*4 | 20 mbar |
| Separation efficiency (nominal)*5 | 99.99% (3µ) |
| Separation efficiency ( ISO 12500-3 )*6 | 95% (5µ) |
| Residual oil content (nominal) | --- |
| Residual oil content ( ISO 12500-1 ) | --- |

*4 - measured at 7 bar and at nominal volume flow, model EFST30
*5 - after initial occurring of a filter cake in the surface filtration phase
*6 - measured referring to ISO 12500-3 at 1 bar(a) and equivalent volume flow, model EFST30, new condition

## Materials

| Component | |
|---|---|
| Filter media | Cellulosic fibres, impregnated (acrylic basis) |
| Bonded joint | PU (polyurethane) |
| Cylinders | Stainless steel 1.4301 |
| End caps | EFST25-170: PA6 (polyamide), 30% glass fibres ; EFST180-190: aluminium anodised |
| Sealing materials | NBR |



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## Dimensions

| Model | Height (total height) | ∅ | ∅ Inlet (inside) |
|---|---|---|---|
| EFST 25 | 53 mm (53 mm) | 42 mm | 17 mm |
| EFST 30 | 57 mm (57 mm) | 51 mm | 24 mm |
| EFST 50 | 73 mm (73 mm) | 51 mm | 24 mm |
| EFST 70 | 142 mm (142 mm) | 51 mm | 24 mm |
| EFST 90 | 118 mm (124 mm) | 75 mm | 44 mm |
| EFST 110 | 218 mm (224 mm) | 75 mm | 44 mm |
| EFST 120 | 318 mm (324 mm) | 75 mm | 44 mm |
| EFST 130 | 508 mm (514 mm) | 75 mm | 44 mm |
| EFST 140 | 510 mm (510 mm) | 92 mm | 55 mm |
| EFST 170 | 760 mm (760 mm) | 92 mm | 55 mm |
| EFST 180 | 612 mm (612 mm) | 140 mm | 96 mm |
| EFST 190 | 762 mm (762 mm) | 140 mm | 96 mm |

## Classification according to Pressure Equipment Directive 2014/68/EU for group 2 fluids

| Models | Volume | Category |
|---|---|---|
| All models | Filter elements are not part of the Pressure Equipment Directive 97/23/EC | |

## Other directives

| Model | |
|---|---|
| All models | --- |



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