Filter elements
V_T, ZP_T, XP_T, A_T

ZANDER filter elements for the *ZANDER* housing series S are designed as high-capacity surface filters for coarse separation of particles (V_T), coalescing depth filters for separation of liquid and solid particles of 0.01µm size with a filtration efficiency of up to 99.99999% (ZP_T, XP_T), and activated carbon filters for additional adsorption separation of aerosol components with simultaneous reduction of oil vapour (A_T).

The core of the filters is the pleated and up to 4-layer filter fabric consisting of a coated borosilicate microfibre-fabric with a void volume of more than 96%, surrounded by another filter and support fabric made from polypropylene (ZP_T,XP_T). The drainage layer, comprising an innovative, ageing-resistant filter material with an improved performance, is already incorporated in the pleated filter fabric. As a result, any external foam sock is superfluous. The filter fabric is machine-produced and therefore of a consistently high quality. The machine pleating ensures that up to four times the filter surface is available compared with a wrapped element of the same size. The enlargement of the filter surface achieved by pleating results in a reduction of velocity through the filter fabric, and therefore in a reduction of differential pressure with simultaneous improvement of dirt holding capacity and separation behaviour.

The filter element cylinders consists of high-quality electropolished stainless-steel mesh with large perforations and stainless-steel endcaps.
The filter elements are fixed in the stainless-steel housings with an integrated standard "click-lock" connection.

Basic technical data:

	V_T	ZP_T	XP_T	A_T
Filtration efficiency	99.99% (3µm)	99.9999% (1µm)	99.99999% (0.01µm)	---
MPPS[*1]-filtration efficiency	---	99.99% (0.1-0.5µm)	99.9999% (0.1-0.5µm)	---
Residual oil content	---	≤ 0.5 mg/m³ [*2]	≤ 0.01 mg/m³ [*2]	≤ 0.003 mg/m³ [*3]
Differential pressure[*4]	20 mbar	30 mbar	90 mbar	30 mbar

*1: in relation to MPPS particle size 0.1-0.5 µm (most penetrating particle size)
*2: in relation to 1 bar absolute, 20°C for an inlet concentration of 20 mg/m³
*3: in relation to 1 bar absolute, 20°C for an inlet concentration of 0.01 mg/m³
*4: differential pressure in new state, dry, at nominal capacity

Capacity[*5]:

Model	Nominal
09	220 m³/h
13	500 m³/h
14	780 m³/h
18	1470 m³/h
19	1950 m³/h

*5: capacity calculated at 1 bar absolute and 20°C at 7 bar working pressure

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Specification
V_T, ZP_T,
XP_T, A_T

Materials used	
Filter fabric	Microfibre fabric, coated (V_T) Borosilicate microfibre fabric with polypropylene homopolymer support-fabric (ZP_T,XP_T) Microfibre fabric enriched with activated carbon, parafil-fibre fabric (A_T)
Drainage layer	Parafil-fibre fabric incorporated in the filter fabric (ZP_T,XP_T)
Rib mesh	Stainless steel VA 1.4306, electropolished
Endcaps	Stainless steel VA 1.4305
Sealing materials	EPDM (ethylene-propylene-dien)
Bonding materials	Polyurethane adhesive, solvent-free

Temperature range	
Nominal	+1°C to +120°C (V_T, ZP_T, XP_T) +1°C to +40°C (A_T)
Maximum (short-term)	+1°C to +150°C (V_T, ZP_T, XP_T) A_T use for temperatures >60°C not advisable because of high proportion of vapour

Differential pressures at nominal capacity	**V_T**	**ZP_T**	**XP_T**	**A_T**
Differential pressure in new state dry [*1]	0.02 bar	0.03 bar	0.09 bar	0.03 bar
Differential pressure saturated [*2]	0.07 bar	0.10 bar	0.22 bar	---
Bursting pressure filter element	approx. 5 bar	. 5 bar	approx. 5 bar	Approx. 5 bar

*1: measured at 7 bar working pressure with model 09 as example
*2: impact of test aerosols after 60 minutes with an inlet concentration of >20 mg/m³, measured at 7 bar working pressure, model 09

Filtration efficiency	**V_T**	**ZP_T**	**XP_T**	**A_T**
Filtration efficiency at nominal capacity	99.99% (3µm)	99.9999% (1µm)	99.99999% (0.01µm)	---
MPPS [*3] filtration efficiency at nominal capacity	---	99.9999% (0.1-0.5 µm)	99.9999% (0.1-0.5 µm)	---
Residual oil content at nominal capacity	---	≤ 0.5 mg/m³ [*4] (1 bar a, 20°C)	≤ 0.01 mg/m³ [*4] (1 bar a, 20°C)	≤0.003 mg/m³ [*5] (1 bar a, 20°C)
Average residual oil content at nominal capacity attained on validation	---	---	---	---

*3: most penetrating particle size – the particle size that is most difficult to separate
*4: in relation to 1 bar absolute, 20°C for an inlet concentration of 20 mg/m³
*5: in relation to 1 bar absolute, 20°C for an inlet concentration of 0.01 mg/m³

Direction of flow	
Filtration of solid particles/liquid particles	from inside to outside
Filtration of pure solid particles	from inside to outside (standard) or from outside to inside

Capacity calculated at 1 bar absolute and 20°C at 7 bar working pressure	
Model	**Nominal**
09	220 m³/h
13	500 m³/h
14	780 m³/h
18	1470 m³/h
19	1950 m³/h

Production / quality assurance
Development, manufacture and quality assurance in accordance with DIN EN ISO9001, supplemented by ZANDER's own TQM (Total Quality Management)