

Viledon Filters Create a Climate of Confidence

New!

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Freudenberg
Filtration Technologies



High indoor air quality is not a matter of course ...

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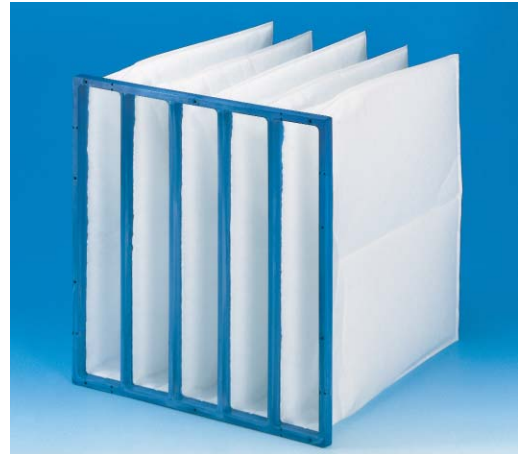


Recently, indoor climate control systems have become the focus of increasing interest, since among the causes cited for Sick Building Syndrome are poorly maintained and hygienically inadequate HVAC (Heating, Ventilating and Air-Conditioning) systems. To protect the health of the staff concerned, and also for reasons of production-specific or technological conditions, tougher requirements have to be applied for the performance capabilities of air filters in HVAC systems. The air filters used have to ensure that the content of dusts, bacteria, moulds, and biological constituents in the intake air to rooms does not exceed that of the local outside air in any category. Care must thus be taken to ensure that the air filters cannot themselves become sources of air constituents producing health hazards and unwanted odours.

The dust concentration in the atmosphere, like the different particles it comprises, depends on the meteorological situation and specific local conditions, such as emission sources. One cubic meter of outside air, for example, may have between 10 and 80 billion particles in suspension. The proportion of potentially allergy-triggering pollens, most of which are larger than 10 µm, is often as much as several thousand per cubic meter during the spring months. High all-year round coarse-dust loadings are encountered in heavy-industry regions and in rural districts featuring high concentrations of natural particles and seasonal peaks due to agriculture and airborne pollen.

In large conurbations, especially, the outside air is heavily polluted with fine dusts from industrial facilities, road traffic and other combustion processes. The substances include soot, exhaust gas aerosols, abraded particles, vapours, etc. In addition, the outside air also contains micro-organisms like bacteria, spores and moulds in a size category of approx. 1 µm.

Under these environmental conditions, high-quality fine filtration is essential for supplying people in air-conditioned rooms with clean „healthy“ air to breathe.



Viledon WinAir pocket filters for a good indoor climate

Viledon WinAir pocket filters have been developed specifically for indoor climate control and meet all hygiene requirements for HVAC systems to EN 13779 and the German VDI Guideline 6022. They offer high operational dependability over lifetimes of at least 1 year in the prefilter stage and not less than 2 years in the second filter stage, given the volume flow of 3.400 m³/h (per 1/1 filter element) usual in indoor climate control applications and average on-site conditions¹⁾.

To extend the lifetime of downstream fine filters, an effective prefilter stage will often be required.

The WinAir 35 and WinAir 45 Coarse Filters offer stable arrestance of coarse dusts and are particularly well suited as prefilters upstream of fine filters. Their high dust holding capacity at a low pressure drop ensures long useful lifetimes.

The WinAir 50 Fine Filter provides an optimum combination of stable arrestance towards fine dusts, high dust holding capacity, low pressure drop and required useful lifetime.

The WinAir 75 up to WinAir 98 Fine Filters ensure high room air quality by very good arrestance of fine dusts and micro-organisms, with a low pressure drop.

The filter media of WinAir 35 up to WinAir 50 are progressively structured, i.e. layers of differing fiber diameters are arranged in line, with

... but a matter of confidence.

the density increasing towards the clean-air side. The filter media of the WinAir 75 up to WinAir 98 have a 3-layer progressive structure, with a high-arrestance microfiber layer being surrounded by a prefilter layer and a support layer. This provides an optimum of filter performance and dust holding capacity. In the case that old single-stage filter systems are to be operated with Filter Class F7 to EN 779, we advise using the Viledon NanoPleat cassette filters Type MV 85 HSN. Under critical on-site conditions, such as abrasive or sticky dusts, high volume flows, and if process safety does not permit any compromises, the field-proven Viledon Compact or MaxiPleat filters satisfy even the toughest of requirements for operational reliability and cost-efficiency.

Viledon filters are manufactured in our own plants using sophisticated, often patented processes, and over decades of use have proved their distinctive excellence of quality, their cost-efficiency and their operational dependability. Numerous customers appreciate not only our innovative vigor and global presence, but also our professional applications engineering con-

sultancy on the spot. Our Quality Management System to ISO 9001, plus our Environmental Management System to ISO 14001, ensure the consistently high performance and environmental compatibility of all our products.

Viledon WinAir pocket filters: The design features at a glance

- ▶ Very good filtration characteristics, thanks to the progressive and 3-layer progressive structure of the nonwoven filter media made of synthetic-organic fibers and microfibers
- ▶ High functional reliability due to leakproof-welded filter pockets foamed into the PUR front frame
- ▶ The microbiologically inactive filters offer no nutrient medium for the growth of microorganisms
- ▶ No risk of glassfiber breaks and shedding, since there is no glassfiber content at all
- ▶ Corrosion-free, moisture-resistant up to 100% rel. humidity, self-extinguishing to DIN 53438 (Fire Class F1) and disposal-friendly
- ▶ Eco-friendly, containing no PVC or halogens
- ▶ Simple and safe to install, suitable for all commonly used support frames.



Reg. No. 1420

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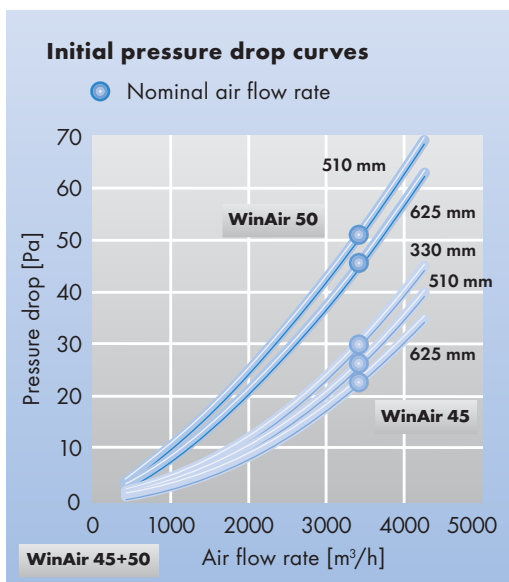
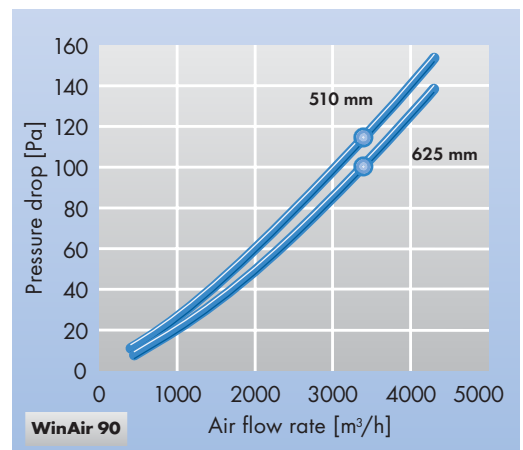
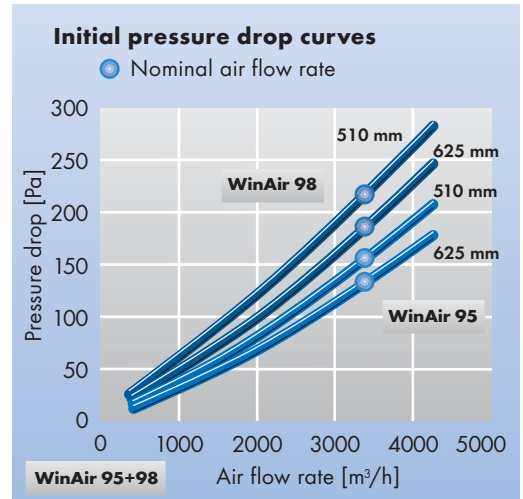
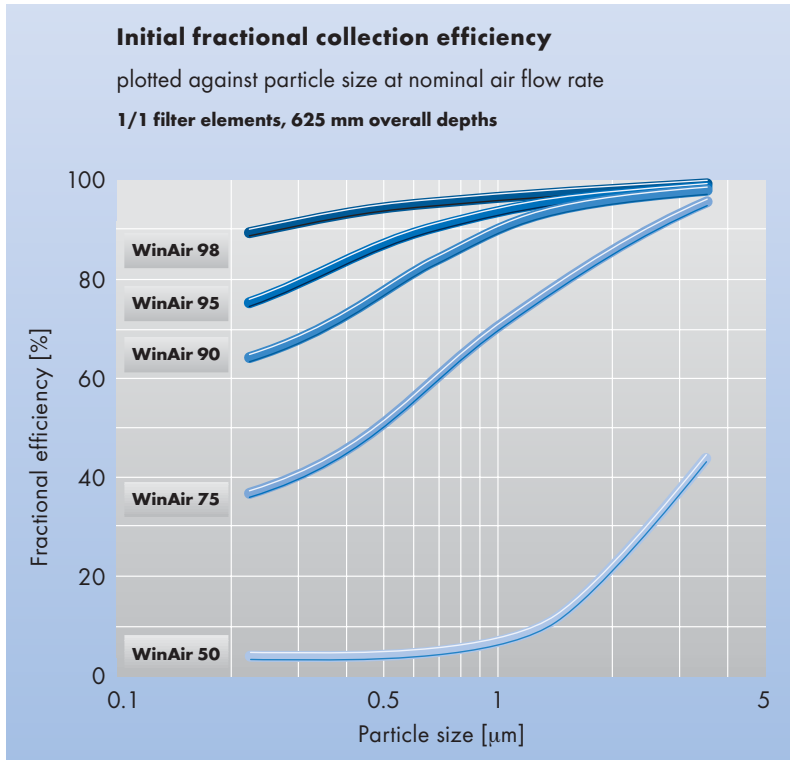


Technical data		WinAir 45	WinAir 50	WinAir 75	WinAir 90	WinAir 95	WinAir 98
Filter Class to EN 779		G 4	F 5	F 6	F 7	F 8	F 9
Dimensions of 1/1 element W x H	mm	595 x 595	595 x 595	595 x 595	595 x 595	595 x 595	595 x 595
Overall depth	mm	330/510/625	510/625	510/625	510/625	510/625	510/625
Number of pockets		5	5	8	8	8	8
Nominal air flow rate	m ³ /h	3.400	3.400	3.400	3.400	3.400	3.400
Initial pressure drop	Pa	30/27/24	51/47	93/76	117/101	153/135	216/185
Final pressure drop ²⁾	Pa	250	450	450	450	450	450
Average arrestance	%	90/91/92	96/97	> 99	> 99	> 99	> 99
Average efficiency (0.4 µm)	%	—	40/44	72/77	85/88	91/93	96/97
Average fractional efficiency (1 µm)	%	—	57/59	85/88	93/95	95/96	97/98
Filtering area	m ²	2.0/3.0/3.7	3.0/3.7	4.8/5.4	4.8/5.4	4.8/5.4	4.8/5.4
Thermal stability, temporary peaks	°C	70 80	70 80	70 80	70 80	70 80	70 80
Moisture resistance, rel. humidity	%	100	100	100	100	100	100

The filter elements are also available in the undersizes 5/6 (492x592 mm), 1/2 (289x592 mm) and 1/4 (289x289 mm). The technical data of the WinAir 35 coarse filter can be found in the corresponding data sheet.

¹⁾ Corresponds to an annual average figure of approx. 15 µg/m³ for PM10 dusts (≤ 10 µm) in accordance with the German Federal Environment Agency (www.Umweltbundesamt.de).

Technical filter test data to EN 779

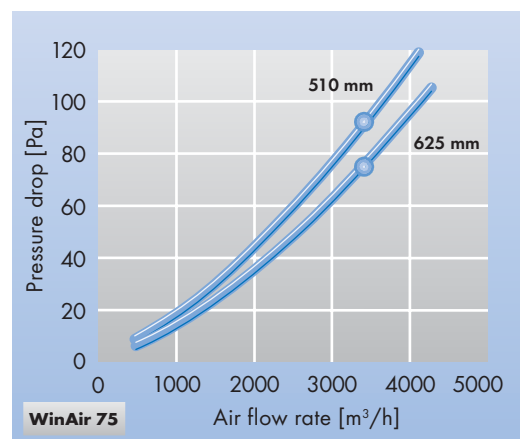


2) For cost-efficiency or system-specific reasons it may be appropriate to change the filters before reaching the stated final pressure drop. It can also be exceeded in certain applications.

The figures given are mean values subject to tolerances due to the normal production fluctuations. Our explicit written confirmation is always required for the correctness and applicability of the information involved in any particular case.

Subject to technical alterations.

You will find instructions on how to handle and dispose of loaded filters in our information on product safety and eco-compatibility.



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