

Compact Filter – HS-Mikro Pak 4V PPE

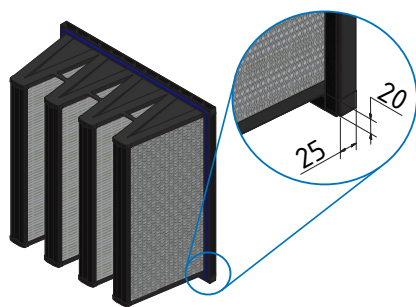
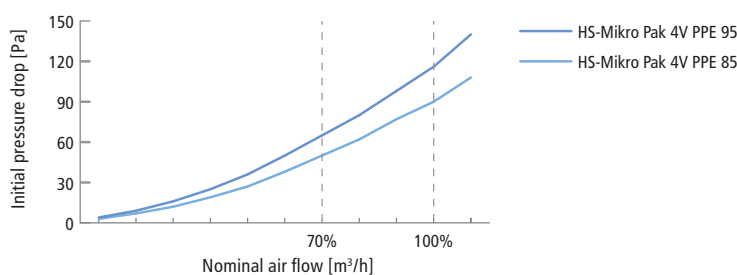


HS-Mikro Pak 4V PPE offers impressive performance thanks to the use of the latest, energy-efficient filter media, which are brought into a perfect pleat geometry by our innovative pleating center. This ensures minimal design resistance. The revolutionary nanofiber filter media offers dust holding capacities of up to >1.1 kg with standard dimensions, which is up to twice the usual dust load for compact filters. At the same time, it is characterized by an incomparably low operating pressure difference. As a result, the operating energy requirement of the HS-Mikro Pak 4V PPE is 25% below the energy classification value for energy class A+, at just 650 kWh/a. The filter medium is extremely robust, tear-resistant and completely moisture-resistant. HS-Mikro Pak 4V PPE is therefore not only suitable for realizing considerable energy saving potential in HVAC systems, but also particularly suitable for process air applications, including power generators such as gas turbines and compressors, as well as for offshore applications. It meets the requirements of VDI 6022 and thanks to the extremely low operating pressures and high dust holding capacity, it is possible to significantly extend maintenance intervals depending on the application

Typ:	HS-Mikro Pak 4V PPE		<div>Energy class comparable mit Eurovent 4/21</div> <div><div>Low energy consumption</div><div><div>A+</div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div><div>High energy consumption</div></div></div>
	85	95	
Class EN 779	F7	F9	
Class ISO 16890	ePM1 60%	ePM1 80%	
Initial-ΔP [Pa] (A / B)	50 / 90	65 / 110	
Recc. final ΔP	600		
Max. temp. [°C]	65°		
Dimensions [mm]			
Width	Height	Depth	
592	592	292	3400 5000 7,5
592	490	292	2800 4100 5,3
592	287	292	1700 2500 3,2

Please ask for other desired designs.

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Detail: flange dimension (without gasket)
Displays also options 1 & 2.

Frame	corrosion resistant plastic
Operational conditions	<ul style="list-style-type: none"> max. rel. h. 100 [%] max. temp. 65 [°C]
Spacers	thermoplastic (minipleat)
Filtermedia	fully synthetic filter medium with progressive nanofiber structure for maximum moisture resistance and extreme mechanical resilience as well as maximum dust holding capacity
Combustible	YES
Options	<ol style="list-style-type: none"> 1.) burst protector / protection screen 2.) foamed gasket on the clean air side of the flange
Example applications	<ul style="list-style-type: none"> main filter for gas turbines pre- and mainfiltration for particle and finedust removal main filter for comfort air filtration ultimate alternative to any other energy saving main HVAC filter

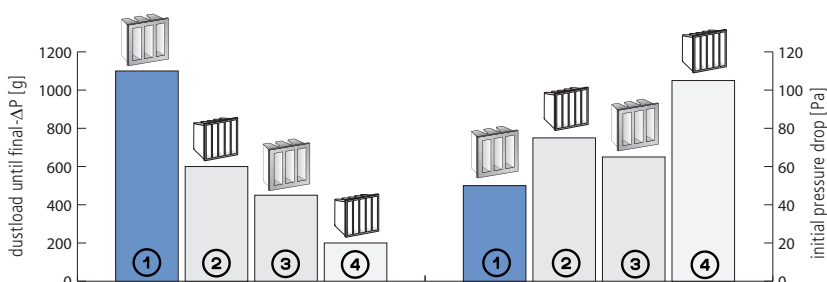
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Nanofiber media offers unmatched performance potential

The high-performance Micro-Pak 4V PPE filters are characterized by their impressive performance characteristics, which are achieved through a filter media designed for maximum energy efficiency. The advanced construction with PFAS-free nanofibers enables high flow rates with low resistance. Robust coarse fibers form a stable random fiber mesh that retains large amounts of dust, while the finest fiber nets in the media composite also reliably separate submicron particles despite maximum air permeability. Our special manufacturing processes are also designed to get the best out of the filter medium. Even with these highly resistant filter media, they enable the precise formation of an optimum pleat geometry. Our advanced production facilities enable us to optimize the design filter resistance and thus offer users unprecedented service life and energy benefits.

HS-Mikro Pak 4V PPE in comparison with other filters

Energy efficiency, CO₂ footprint and service costs - in short "life cycle costs" - remain a key issue in the procurement of capital and consumer goods. HS-Mikro Pak 4V PPE 85 can achieve a consumption of less than 650 kWh/a thanks to perfect product coordination. This means that the operating energy requirement according to the Eurovent model is approx. 25% below the entry-level requirements for energy class A+. Depending on the application, it is even possible to skip one or even two replacement intervals thanks to the longevity of this filter type. HS-Mikro Pak 4V PPE can absorb up to twice the expected amount of dust than conventional energy-saving compact filters until the final pressure drop is reached. The difference becomes clear when looking at different filter types in terms of initial pressure drop and dust holding capacity, where HS-Mikro Pak PPE shows its outstanding properties:



Cl. ePM1	60%	60%	60%	55%
kWh/p.a.	650	950	850	1400
Energyclass ¹	A+	A	A+	C / D
Dustholding	1100 g	600 g	480g	200g
Initial-ΔP	-	-	-	-

60%	60%	60%	55%
650	950	850	1400
A+	A	A+	C / D
-	-	-	-
50 Pa	75 Pa	65 Pa	105 Pa

Filter #1: HS-Mikro Pak 4V PPE 85, Filter #2: energysaving bag filter (wave structure), Filter #3 usual rigid bag filter (V-Bank), Filter #4: low budget bag filter

¹⁾ Energyclass is comparable to Eur.vent 4/21

The extra edge in security

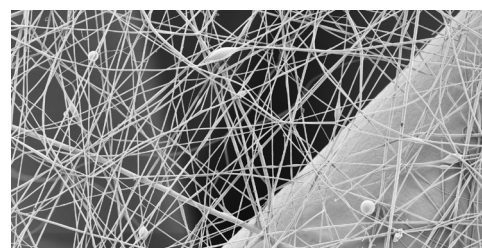
The fully synthetic structure of the filter and the elimination of glass fiber media opens up new possibilities. Glass fiber media contain acrylic binders. These are hydrophilic, so that moisture in glass fiber filters may lead to expansion of the filter medium, which on the one hand greatly reduces the tear resistance when wet and on the other hand increases the pressure difference. These effects do not occur with HS-Mikro Pak 4V PPE. The filter medium is extremely tear-resistant under all conditions so that no grip or burst protection is required for normal applications and even for gas turbines under difficult working conditions (fog) or other force generators.

These filters are also particularly suitable and certified for use in areas that fall under the EC 1935/2004 directive, for example, due to the choice of materials and the complete absence of glass fibers and other hazardous substances.

The fine nanofiber web of the active layer is clearly visible in the SEM image:

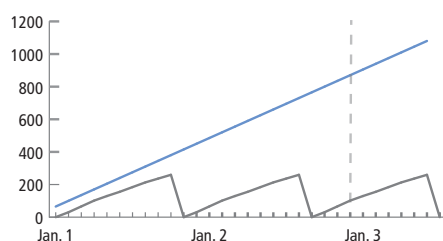
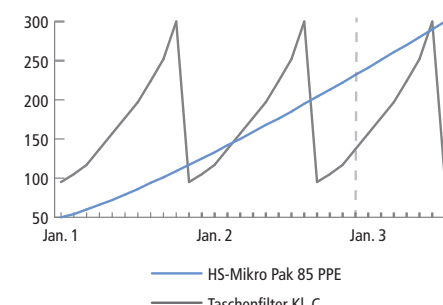


10 μm



2 μm

The diagrams show HS-Mikro Pak 4V PPE 85 in comparison with an inexpensive standard pocket filter over the course of three years:



The time axis shows the replacement intervals (peaks) and the mandatory replacement after 24 months in accordance with VDI 6022. Industrial processes and power generators that benefit from extreme life cycles can be operated cost-effectively for much longer. Hygiene-related applications can reduce maintenance and save significant amounts of energy.

