viledon®

Viledon® filtration solutions

improve your energy- and climate protection balance

energy efficiency
performance

Freudenberg
Filtration Technologies

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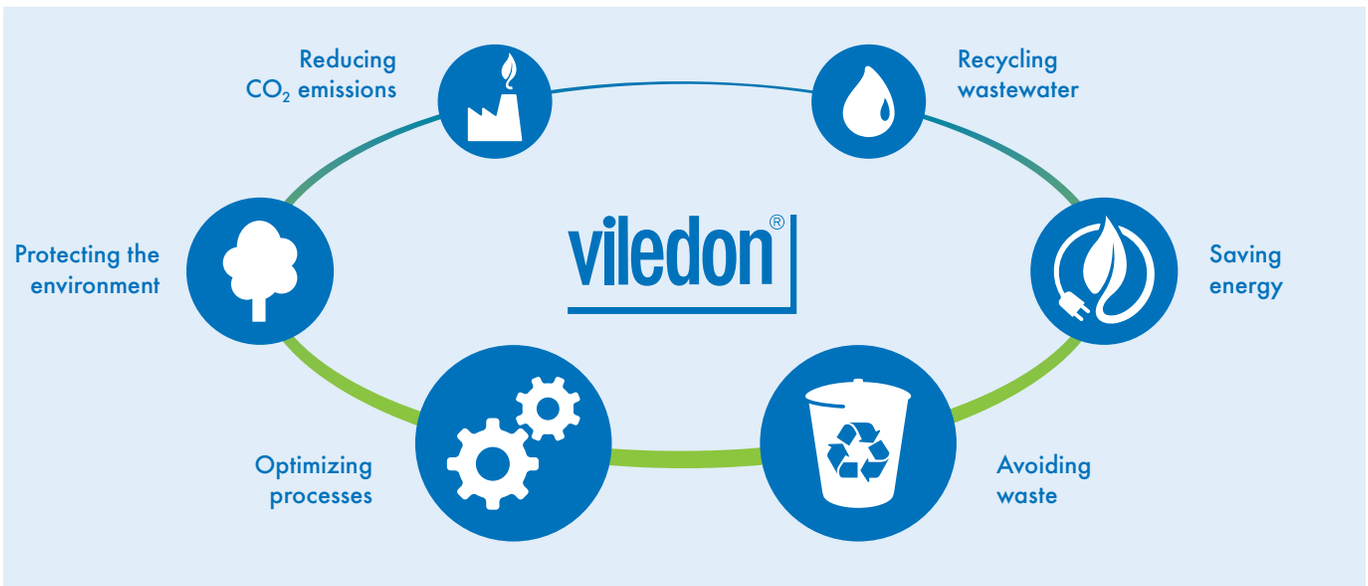
Commitment to sustainability
For us it all begins at the production stage



High energy costs, limited resources, increased demands on the environment – the need for sustainable technologies is greater than ever. In this context, the provision of clean air and pure liquids is one of the major challenges facing our society, now and in the future.

Freudenberg Filtration Technologies makes an important contribution in this area by developing high-performance filtration solutions that boost the efficiency of industrial processes, conserve resources, protect people and the environment and help to improve the quality of life.

The ultimate sustainability of filtration solutions is already largely determined at the production stage. Our activities here are diverse: we conserve resources during production, avoid waste, reduce the use of materials, use recycled raw materials, and offer disposal-friendly and space-saving product alternatives.

Our contribution to mankind and the environment

Learn more about how we make the issue of sustainability the focus of our work on a daily basis – simply scan the QR code to read up on our website.

A couple of specific examples:

- In the manufacture of filter mats, we use **recycled fibers**. We collect the scrap material that arises during production and reuse it for the production of our filter mats.
- Also Viledon® fiber bags for dust removal technology consist of nonwoven polyester materials based on **recycled plastics**.
- Each produced square meter of hydrotexx Eco, a filter medium in pool & spa filter cartridges used in swimming pools, contains **recycled polyester material** from at least six reused plastic bottles.
- Compared to traditional needle felt media, the production of Viledon® NEXX filter bags requires **50 % fewer resources** to achieve a higher filtration efficiency.

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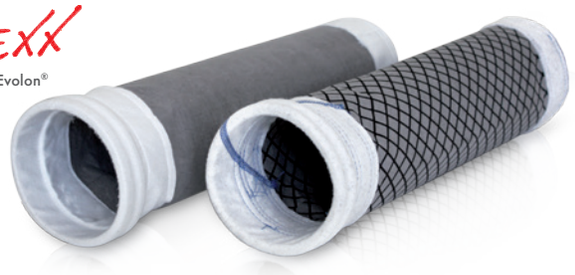
Sustainable filtration solutions
Save resources with Viledon®

More and more companies perceive their obligation to society as a whole and explicitly acknowledge this in their values for responsible economic behavior. Profitable growth, ecological and social responsibility are closely linked. Sustainability has a direct impact on positive business results if more efficient work equipment and processes lead to energy and cost savings. Freudenberg Filtration Technologies has taken on this task and supports customers worldwide with innovative solutions.

sinTexx Plus filter cartridges

For our Viledon® sinTexx Plus filter cartridges, we use grooved polyester media with nanofibers, which are much more efficient at removing dust than conventional media. The result is less power and compressed air consumption and a longer lifespan.

viledon® NEXX
Made with Evolon®

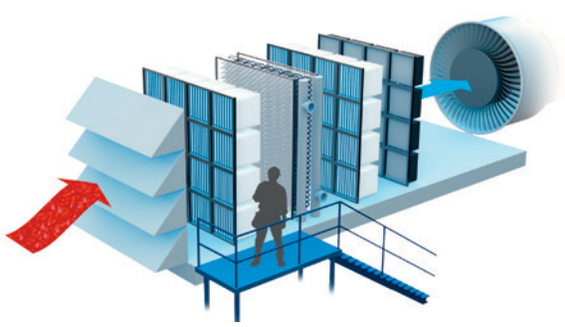


NEXX filter bags

Thanks to their optimized filtration performance, using Viledon® NEXX filter bags saves compressed air for cleaning processes and power consumption for fans. The filter bags also achieve lasting low clean gas values of < 1 mg/m³.

Viledon® eee.Sy

With Viledon® eee.Sy, our turnkey air intake system for gas turbines and compressors, we ensure not only improved energy efficiency of the turbo machines, but also lower energy consumption and increased system profitability through the use of waste heat.



Viledon® Water Solutions

Sustainable use of the precious resource of water is becoming increasingly important. With Aquabio system technology, Viledon® Water Solutions offers energy-efficient and cost-saving solutions for wastewater treatment by using methods such as recovering energy and redirecting treated water back into the process to reduce fresh water and wastewater costs.

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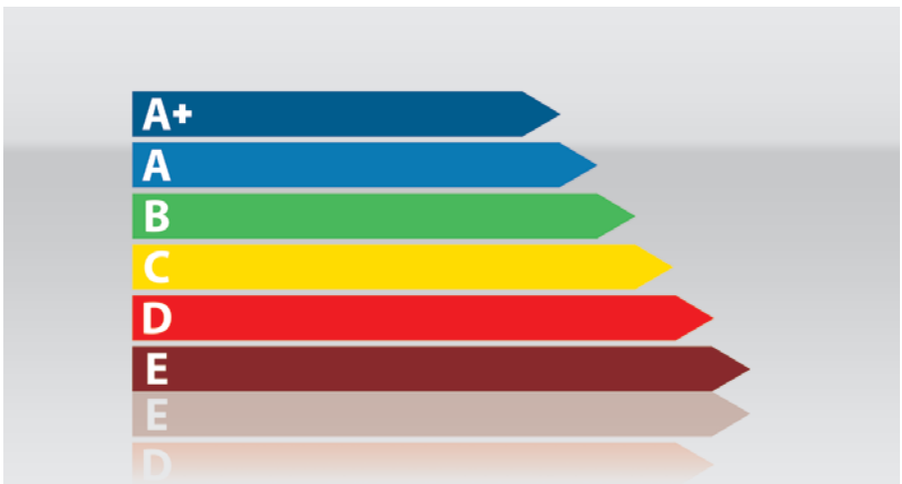
Energy consumption is visible
Energy efficiency classification according to EUROVENT 4/21



Significant cost reduction

Rising energy costs and the need to reduce CO_2 emissions are increasingly focusing attention on the energy consumption of air-conditioning systems. In fact, there is a substantial potential for savings because ventilation systems require a disproportionate amount of energy. In office buildings, the proportion is around 40 % of the total consumption; in cleanrooms, it is even 80 %.

Energy-efficient air filters at a glance

Energy-saving measures include the use of highly efficient frequency – controlled fans. Alongside that, a relatively simple and effective method of achieving significant cost reduction is the use of top-quality, energy-efficient air filters.

To make it easier for users to choose the most energy-efficient air filters, experts at Freudenberg Filtration Technologies introduced their own energy efficiency classification system some years ago. Based on this work, a European energy efficiency classification system for air filters was developed by the European Committee of manufacturers of air handling and drying equipment (EUROVENT). This is described in the EUROVENT Guideline 4/21. Class A stands for excellent energy efficiency values, class E for very poor.

Determination of energy efficiency classes

In the laboratory method for testing air filters described in the European standard EN 779:2012, both filtration efficiency and pressure difference as a function of dust loading are measured at 3,400 m^3/h. This testing procedure uses the synthetic ASHRAE test dust. From the mean pressure difference averaged over the course of dust loading, a representative energy consumption level can be calculated. On the basis of these figures, it is then possible to simulate the energy performance of a filter over an operating period of one year (6,000 operating hours) in a laboratory. This representative energy value is used for a classification of air filters into energy efficiency classes.

EUROVENT CERTIFIED PERFORMANCE AIR FILTERS CLASS M5 – F9 www.eurovent-certification.com

Classification as per EUROVENT 4/21 following laboratory testing for annual energy consumption at 3,400 m^3/h

Filter class*	M5	M6	F7	F8	F9
ME**	–	–	≥ 35 %	≥ 55 %	≥ 70 %
	M_G = 250 g ***		M_F = 100 g ***		
A+	0 – 450 kWh	0 – 550 kWh	0 – 800 kWh	0 – 1,000 kWh	0 – 1,250 kWh
A	> 450 – 600 kWh	> 550 – 650 kWh	> 800 – 950 kWh	> 1,000 – 1,200 kWh	> 1,250 – 1,450 kWh
B	> 600 – 700 kWh	> 650 – 800 kWh	> 950 – 1,200 kWh	> 1,200 – 1,500 kWh	> 1,450 – 1,900 kWh
C	> 700 – 950 kWh	> 800 – 1,100 kWh	> 1,200 – 1,700 kWh	> 1,500 – 2,000 kWh	> 1,900 – 2,600 kWh
D	> 950 – 1,200 kWh	> 1,100 – 1,400 kWh	> 1,700 – 2,200 kWh	> 2,000 – 3,000 kWh	> 2,600 – 4,000 kWh
E	> 1,200 kWh	> 1,400 kWh	> 2,200 kWh	> 3,000 kWh	> 4,000 kWh

* *According to EN 779:2012* ** *Minimum efficiency* *** *Threshold of dust loading with ASHRAE test dust*

There's a lot of money in pure air
Reduce energy costs with Viledon®

energy efficiency
performance

Less pressure drop saves energy

A large part of the energy consumption in ventilation and air conditioning (HVAC) systems can be attributed to pressure drops. Up to half of the energy consumption results from the use of filters.

The fan in an HVAC system consumes electrical energy during operation, for example, to overcome the filter's resistance. In the case of variable-speed fans, energy consumption will continually increase as a result of the air filters' pressure drop. Many conventional filters display unfavourable resistance behaviour. Here, acting sustainably means reducing the pressure drops in the air filter systems to thereby save valuable energy, avoid unnecessary costs, and reduce CO_2 emissions.

For the energy-optimized operation of HVAC systems – while still ensuring that filter efficiency is adequate to deliver the necessary indoor air quality – we recommend Viledon® air filters in energy efficiency classes A and B. These filters have a large dust holding capacity combined with a low pressure drop curve, which cause lower energy consumption.

Important information

1 Pa = 1 €

1 pascal less of pressure drop per filter corresponds to savings of 1 euro per year (8,500 operating hours, volume flow 3,400 m³/h).

Compact pocket filter T60

MaxiPleat cassette filter MX98

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Global responsibility
We act out of conviction

Acting in a sustainable manner in the machinery and plant engineering industry – which also includes filtration – means that companies optimize their technology solutions in terms of energy efficiency, resource-saving operation, lower life-cycle costs and environmental and health protection.

Freudenberg Filtration Technologies is committed to responsible management as a basis for entrepreneurial success and long-term development. We are convinced that economic efficiency, social responsibility and the protection of the environment are strongly linked. Sustainable production processes and products are not always obvious at first glance. This is why we have chosen to support the VDMA's "Blue Competence" initiative. This defines robust sustainability criteria and standards, which are in turn validated by the performance of the initiative's membership.

The Freudenberg Group has also signed the United Nations Global Compact and committed itself to continuing to operate its business sustainably and on the basis of values. Accelerating the development and diffusion of environmentally friendly technologies and promoting environmental awareness are just two of the 10 principles on which the Global Compact is based. With the careful use of precious resources and our energy-efficient solutions, we make an important contribution to the environment on a daily basis.

BLUEcoMPETENCE
Alliance Member
Partner of the Engineering Industry Sustainability Initiative

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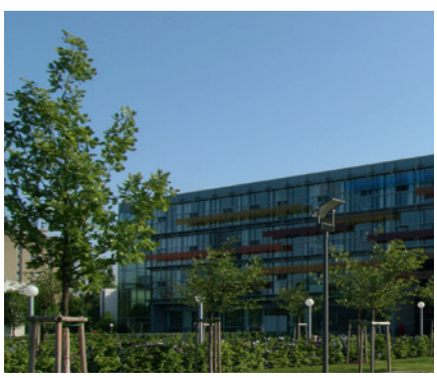
Successful savings achieved
Case studies with Viledon® air filters

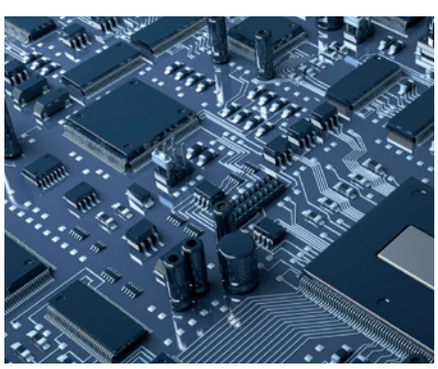
Numerous businesses from a wide range of industries have already chosen energy-efficient filter solutions from Viledon® and have verifiably reaped the benefits ever since. By directly comparing the previously used filter with a new Viledon® system, cost savings as well as reductions in CO_2 emissions could be realized.

Cold storage for confectionery

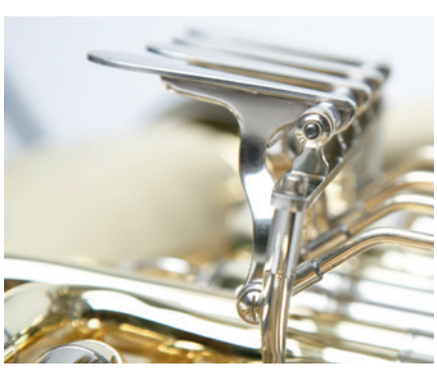


Hospital

Thermal spa



Clean room for microelectronics



Metal-working company

Airport

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