

MARCH 2017

VILEDON NEWS

IN FOCUS: JUBILEE

60 YEARS OF FILTRATION SOLUTIONS FOR ENHANCED QUALITY OF LIFE

INNOVATING TOGETHER: THE RECIPE FOR SUCCESS



“A nonwoven is a structure of fibers (...) of any type and origin, which in some way have been joined together into a nonwoven (...) and in some way connected”, according to online encyclopedia Wikipedia. We know that everything started at Freudenberg in 1957 with just such a nonwoven. That is why we are celebrating 60 years of filter technology and looking forward to many more years of innovation.

The original idea of Freudenberg, a pioneering company based in southern Germany, was to manufacture filter mats for paint shops. From these beginnings, Freudenberg Filtration Technologies has developed over the last 60 years into one of the world's market leaders in filtration technology. The innovative spirit of the currently 2,300 employees has always played an

important role in the company's development. Whether it concerns the form or the application area of filter media, or the development of novel filter solutions, innovative ideas have always been the force that has enabled Freudenberg Filtration Technologies to open up new markets or set new standards in filter performance.

New materials for new markets

One example of this would be the micronAir® automotive cabin air filter. With the introduction of this product at the end of the 1980s, Freudenberg was the first company that not only considered the air in the interior of vehicles, but also developed an effective solution. Dust, soot, pollen, harmful gases and odors inside automobiles became a thing of the past. The reward for this idea was that micronAir® has to this day made Freudenberg a market leader in the global automotive industry.

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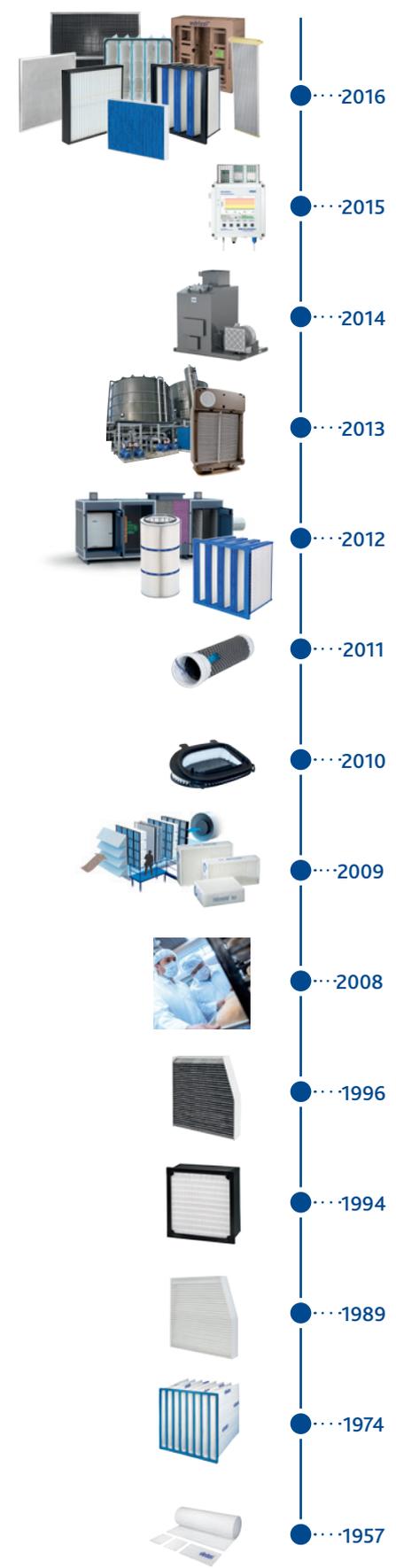
Nonwovens have got better and better

The nonwovens necessary for high-quality filtration solutions are continually being further developed. For example, Viledon® NEXX filter hoses remove dust in extremely dusty steelworks and foundries in a highly resource-efficient manner that is also particularly energy efficient. These hoses are based on Evolon®, a material made of microfilaments that was developed and patented by Freudenberg. Depending on the application, these filter media are also being constantly improved in other areas of air purification.

Filter systems expand the portfolio

Freudenberg Filtration Technologies has progressively moved beyond simply producing filter mats to offer customers complete filter systems. The company's portfolio has been expanded with the

introduction of cassette filters, pocket filters, HEPA filters, filter hoses and cartridges. A comprehensive range of services completes the company's fully integrated offering. With Viledon® filterCair, the filtration specialist offers a complete air quality management service for the optimization of processes, as well as the maintenance and upkeep of technical systems. In addition, Viledon® Engineering provides a service that includes the planning, construction, operation, monitoring and maintenance of complete filtration plants. In recent years, water and gas-phase filtration have been added to the company's established air filtration offering. Here as well, innovative new technologies such as ChemControl pellets, Honeycomb modules (HM®) or Aquabio membrane bioreactors complement the filter mats that first launched Freudenberg into the filtration business.



Producing Viledon® filter mats in 1957 ...



... and today

Global player with more than 30 sites

Today, Freudenberg Filtration Technologies is an internationally operating company and a reliable partner in air, liquid and gas-phase filtration. The technologies we develop make industrial processes cleaner, safer and more energy-efficient – thus supporting the sustainable business

practices of our customers. In the future, we aim to continue using our expertise and knowledge to support our customers as extensively as possible: for people, for our environment and to help protect our natural resources. Here's to the next 60 years of experience. Ideas. Future. ■



Freudenberg headquarters in Weinheim, Germany – then and today

ACCURATE ANALYSIS

OUR WEINHEIM FILTER LAB ALSO HELPS PAINT SHOPS SOLVE QUALITY CHALLENGES



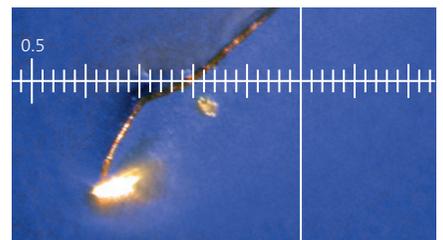
State-of-the-art technology and years of experience come together in the filter lab

When it comes to painting cars, nothing less than “brilliant” is an acceptable result. But what if the paint shop has to deal with the ingress of dust and dirt? The filter laboratory of Freudenberg Filtration Technologies can help with eliminating the problem.

One dust particle. One cotton fiber. One trace of glue. Because of their negative effect on quality, very small particles are constantly capable of having an extremely serious effect on the production processes of paint shops. In the multi-stage filtration systems used by such facilities, it is not easy to find the source of contamination. This often requires precise testing under laboratory conditions.

The problem is analyzed in our test lab

At the filter specialists in Weinheim, the dust and dirt are thoroughly investigated. Base and clear lacquers from the sample panels are precisely analyzed under the microscope by our experts – “also in cross-section”, as emphasized by Jürgen Becker, Market Segment Manager for Surface Treatment at Freudenberg Filtration Technologies. What is the nature of the contamination? What is its possible source? On the basis of their investigations, the team provides clear recommendations on where the painting process needs to be improved so that the acute problem can be remedied and the usual painting quality restored. ■



A cotton fiber in paint under a light microscope

ISO 16890

CAN IT HAPPEN SOONER?

THE NEW ISO 16890 CAN REPLACE EN 779 MUCH MORE QUICKLY

Small mistake, big impact. One false wording on the cover page of the new test standard for the assessment and classification of air filters can considerably reduce the transitional period, which was actually set at 18 months. The validity of the old EN 779 standard is now in the hands of individual countries and can be withdrawn at any time. In the UK and The Netherlands, ISO 16890 is already the only valid standard.

It is a lapse that allows European countries to act differently and has created uncertainty among manufacturers, distributors and users of air filters. Two countries have already completely revoked the old standard. In the remaining countries, the transitional period may still continue until mid-2018. However,

Freudenberg Filtration Technologies strongly urges its customers to quickly familiarize themselves with the new ISO 16890 standard and to initiate the switchover so as to be as independent as possible from individual national decisions. Freudenberg has already fully adopted ISO 16890 and offers comprehensive support and information for affected users. ■

Fast support, online or via email:

[www](http://www.freudenberg-filter.com) www.freudenberg-filter.com
> ISO 16890

@ iso16890@freudenberg-filter.com



CLOSER TO REALITY

WHAT ISO 16890 MEANS FOR THE GAS TURBINE AND COMPRESSOR INDUSTRY



Dust is not just dust – this is a truism for anyone concerned with the subject of air filtration. The new ISO 16890 standard takes this into account. Thanks to different fine dust classes, air filters can be more specifically selected in the future. This is an advantage for operators of gas turbines and compressors, as the plant location also has an influence on the selection criteria of the filters.

PM1, PM2,5 and PM10. Instead of just one particle size, the new ISO 16890 standard takes account of the complete particle spectrum. Environmental conditions also play a major role in the supply air of industrial installations. In the desert there is sand to contend with while offshore, there is a lot of salt in the ambient air, which influences the selection of the filters in different ways.

Based on the filter evaluation described in ISO 16890, Freudenberg Filtration Technologies has developed e.FFECT (electronic Freudenberg Filter Efficiency Calculating Tool). The new software helps operators of gas turbines and compressors to better adapt multi-stage filter systems to the ambient conditions and the desired degree of purity of the intake air. ■



The ambient air, for example containing soot, salt or sand, plays a decisive role

You can find out more about ISO 16890 in the gas turbine and compressor industry and e.FFECT at

www.freudenberg-filter.com
> ISO 16890

In the next edition of Viledon® News:

i [What ISO 16890 means for surface treatment.](#)

ISO 16890

FILTER SPECIALISTS' KNOWLEDGE

WE PREPARE YOU FOR THE NEW ISO 16890

The most pressing issue surrounding industrial air filtration consists of three letters and five digits: ISO 16890, the paradigm shift in the testing and evaluation of air filter classes. The replacement of the old EN 779 test standard has major implications in many areas – including in the classification of the energy efficiency of individual air filters. This means that the calculation and classification of EUROVENT 4/21 must be revised and adapted to the new ISO 16890 standard.

In a scientific article, Dr. Thomas Caesar, Director of Filter Technology at Freudenberg Filtration Technologies, explains the new evaluation concept, which is based on Key

Energy Performance (kep) figures that allow direct measurement of the energy efficiency of air filters.

On January 1, 2018, the revised version of EUROVENT 4/21 will become mandatory for EUROVENT certification. Once you have read the article, you will know today already. ■

You can find Dr. Caesar's scientific article at

www.freudenberg-filter.com
> Company > News



All four parts of the new ISO 16890 can be downloaded from here for a charge:

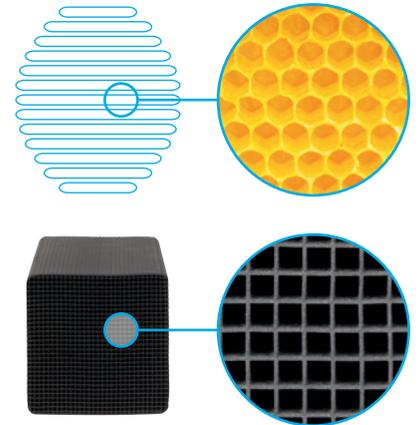
www.iso.org
> Search: ISO 16890

Find a summary of all changes here:

www.freudenberg-filter.com
> ISO 16890

A SAFE PASSWORD: HONEYCOMB

FILTER SOLUTIONS ENSURE DATA SECURITY IN DATA CENTERS



The honeycomb structure makes the Viledon® Honeycomb Module (HM®) unique

When protecting a data center, one thinks of special security doors and windows that prevent breaks-ins. Or an effective firewall that prevents unauthorized access to the network. But do you think of corrosive gases that can enter a company's data center via the ventilation system? This is where Viledon® Honeycomb Modules (HM®) work to ensure pure room air.

The world is digital. Communication is digital. And companies are too. Computer programs and electronic data: the digital DNA of a company is held in its server rooms. Information and communication data needs to be secure while always remaining available. In many data centers, the risk factors that make a data failure likely enter via the air conditioning and ventilation system.

Dust and heat are dangers

“The risk of corrosion for electronic components, the risk of malfunctions, failures and data loss is particularly high in conurbations”, explained Dr. René Engelke, Market Segment Manager Gas-Phase Filtration at Freudenberg Filtration Technologies. Dust particles attack the sensitive electronics. Harmful gases, which are usually produced during the combustion of fossil fuels, cause corrosion. In addition, the room temperature in data centers is now higher, which also increases the risk of corrosion.

The solution: a honeycomb

The key to achieving room air that is not only clean but also pure is found in nature. Honeycombs have a special channel structure that Freudenberg Filtration Technologies has used in the Viledon® Honeycomb Modules (HM®) and combined with activated carbon – for optimum filtration performance. The unique Versacomb™ technology filters corrosive noxious gases extremely economically

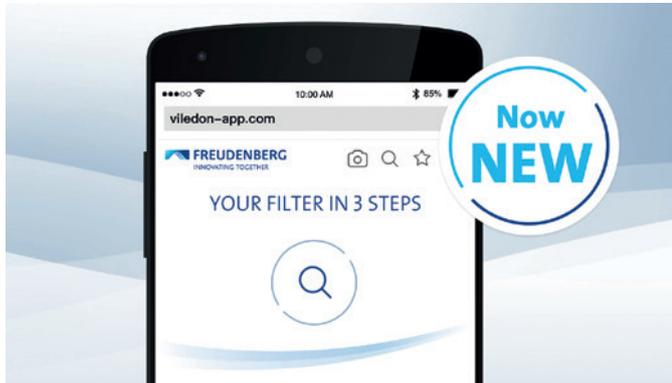
and energy efficiently, as a high flow rate is ensured thanks to minimal pressure drop. The maintenance-friendly modules are also space saving and easy to install in standard filter housings. This is how easy it is for Honeycomb to ensure data security – perhaps in your data center soon. ■



Viledon® Honeycomb Module (HM®) overview

HOW WOULD YOU PREFER TO HAVE THE NEW VILEDON PRODUCT CATALOGUE?

COMPREHENSIVE INFORMATION AND EXPERT KNOWLEDGE IN AN APP FOR THE FIRST TIME



For our jubilee year, the Viledon® product catalogue 2017/2018 runs to an impressive 148 pages. In addition to numerous innovations and an extended product range, the new ISO 16890 standard has been integrated for the first time. With the introduction of the new app, Freudenberg Filtration Technologies has made its information offering complete.

TRADE FAIRS AND EVENTS

We look forward to seeing you!

March 28–31, 2017

Wasser Berlin International – International trade fair and congress on water and wastewater, Berlin, Germany

April 5–6, 2017

FILTREX Conference at the world's leading nonwoven trade fair INDEX, Geneva, Switzerland

May 10–11, 2017

Schüttgut – Leading trade fair for granulate, powder and bulk materials technologies, Dortmund, Germany

More new products, up-to-date expert knowledge, an easily detectable product and service portfolio, QR codes linking directly to even deeper information. In the 60th year of its filter business, Freudenberg offers the most user-friendly product catalogue in its history. Printed, on the website or as a brand new app for smartphone or tablet: simply use the medium that is most convenient for you. Whichever you prefer, you will be up to date with the complete product portfolio of Freudenberg Filtration Technologies.

Digitization also has a big advantage: the new app is constantly updated so it is always current. ■

Make your choice

Print Order your printed Viledon® catalogue from viledon@freudenberg-filter.com

Web www.freudenberg-filter.com
> Air Filtration > Viledon® Products

App www.viledon-app.com



CUSTOMER FEEDBACK

YOU NEVER STOP LEARNING ...

... and sometimes learning is especially enjoyable. The seminars and webinars of Freudenberg Filtration Technologies on the subject of ISO 16890 in 2016 were met with great interest and enthusiasm. Learn more about the new EUROVENT Energy rating on October 10 and 12, 2017 at the Viledon® customer days. ■



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