

MARCH 2016

VILEDON NEWS

IN FOCUS: WATER SHORTAGE

USING WATER MORE EFFICIENTLY

UN URGES RESPONSIBLE USE OF A VALUABLE RESOURCE



The United Nations (UN) is saying it clearly: to avoid drinking water becoming scarce, we need to change our behavior. The situation could become a global threat. The largest consumer worldwide is agriculture and industry. Operations with particularly high water requirements can be found in the food and beverage industry. These require a great deal of water for cooking and for heating circuits, as well as for purifying cen-

trifuges, pipes and boilers. This sector in particular is in need of good ideas for the sustainable use of this precious resource. Under the brand name Viledon® Water Solutions (in England under the Aquabio brand), Freudenberg Filtration Technologies is developing just such solutions. Using a unique membrane technology, Freudenberg is able to clean wastewater sufficiently to gain high-purity drinking or process water.

The UN's current "World Water Development Report 2015" clearly sets out the situation. There is still enough water for the world's population, but "radical changes in the use, management and distribution" of the resource must happen fast to avoid water scarcity. By 2050, according to calculations by UN experts, the need for water will increase by 55 percent against current levels. By then, it is predicted that the global population will have reached 9.1 billion compared to 7.3 billion today. In some regions of the world, groundwater resources are already being tapped. This is a fatal mistake, because it causes reserves to dwindle irretrievably.

For this reason, the UN is calling for sustainable approaches to significantly reduce the consumption of water in households and especially in industrial processes. Many companies are already thinking about and looking for technologies that will help them reduce water consumption and wastewater production to become more sustainable and reduce costs. Freudenberg Filtration Technologies is helping them to achieve this aim.

CONTINUED PAGE 2 >

Creating drinking water from wastewater

Membrane bioreactor (MBR) technology from Viledon® Water Solutions enables wastewater to be recycled to drinking water quality and reused as process water. In aerobic and anaerobic processes, the system's ultra-filtration membranes and reverse osmosis membrane filters guarantee the reliable separation of solid particles, bacteria, viruses and germs. Turnkey wastewater treatment plants from Viledon® Water Solutions have been successfully operating in industrial companies for more than 17 years. Every year, the reference systems installed to date recycle almost two billion liters of wastewater to drinking water quality. Freudenberg technology is especially trusted by industrial enterprises with high water demands, of which Wyke Farms and Chivas Brothers are just two examples.



Sustainable and safe: the new water treatment plant at Wyke Farms

Clean water for excellent cheese

With Wyke Farms in Somerset, one of Britain's most prestigious dairy processors and cheese manufacturers has opted for membrane bioreactor (MBR) technology from Freudenberg Filtration Technologies. With the previous wastewater treatment plant, effluent discharge guidelines could no longer be met. And in low-rainfall periods, the groundwater level of the fresh water spring fell to a threateningly low level. With the new plant, Wyke Farms recycles a significant proportion of its water, reducing fresh water consumption and wastewater production while simultaneously reducing costs.

Thanks to the membrane bioreactor, the Glenlivet distillery was able to expand its production capacity



Membrane bioreactor for Glenlivet

Liquor producer Chivas Brothers has also chosen a wastewater plant from Viledon® Water Solutions for its Glenlivet distillery. The new treatment plant features a low-energy membrane bioreactor (MBR). This produces high-quality wastewater that can be disposed of in accordance with the strict water discharge requirements of the Scottish Environmental Protection Agency (SEPA). The new plant is a prerequisite for expanding production capacity to meet the growing global demand for Glenlivet whiskey.

These examples show how much potential exists for the intelligent use of water in many industrial processes, as called for by the UN. Freudenberg Filtration Technologies helps its partners to tap into this potential. ■



VISIT US IN
HALL A2, STAND 520

30.05 – 03.06.2016,
Munich, Germany

IFAT is one of the most important international trade fairs for water, sewage, waste and raw materials management. A thematic focus is water and wastewater treatment, an area for which Freudenberg Filtration Technologies provides innovative solutions.

EFFICIENCY TO THE POWER OF THREE

THREE-STAGE FILTER SYSTEM FOR THE JUNGFER PRINT SHOP GAS TURBINE



Increased efficiency: the new three-stage filter system on the roof of the print shop

Solar Mercury 50 is the gas turbine that was installed as an energy source at the Jungfer print shop in Herzberg by Freudenberg Filtration Technologies partner Turbomach. The machine worked perfectly, but the filter system offered more potential for optimization to follow the latest trend for EPA filtration. Freudenberg solved all the problems with a three-stage filtration system.

The filter system at Jungfer's did not completely prevent dust and was thus not efficient enough. As a consequence, the blades of the gas turbine also needed to be cleaned at regular intervals. "The plant operator also wanted to use the hot exhaust air from the printing processes and to install a water cooler in front of the intake of the gas turbine", explained Andreas Rothmann, Market Segment Manager Turbomachinery Germany at Freudenberg Filtration Technologies.

Making three from two

Once Freudenberg experts had analyzed the system, the solution was clear: a completely new filter house with three-stage filtration needed to be built. This would be able to adequately protect the turbine and increase efficiency.

In the first stage, Viledon® T60 pocket filters ensure the important pre-filtration of coarse dust. The water cooler was placed behind them, followed by the second and third filter stages. Here, Viledon® MX 95 and MX H10 cassette filters remove fine and very fine dust. "Once the preparations had been made, our engineers had just ten hours to construct the new filter house", said Rothmann. "Everything worked fine. The plant operators are very happy with their new solution, because it has brought the desired increase in efficiency." ■

Benefits of the new system

- Longer lifetime and greater efficiency thanks to three filter stages and an upgrade to EPA standards.
- Reliable and clean operation of the gas turbine compressor.
- Use of exhaust air from the printing process.
- Trouble-free operation of the plant: 12 months without changing the filters (forecast).

For more information about this reference project, visit

www.freudenberg-filter.com/en/download-center/references/



Viledon® cassette filter MX98/MXH10

Viledon® Compact pocket filter T60



IN BRIEF

EN 779 IS EN 779:2012

All coarse and fine dust filters of Freudenberg Filtration Technologies have been tested and classified according to the latest EN 779:2012 standard. However, for the sake of simplicity, we often use the shorter term EN 779 in our communications.

So if you see the EN 779 reference on our website, data sheets, test reports, etc., you can be sure that it refers to the currently valid EN 779:2012 standard. ■

PERMANENT CONTROL

THE VILEDON CHEMWATCH ONLINE MONITORING SYSTEM ENSURES SAFE PROCESSES

Acid is no laughing matter for operators of switching and control rooms in the pulp and paper industry or the petrochemical industry. Acidic gases such as hydrogen sulfide, as well as basic substances such as ammonia, damage the sensitive electronics by causing corrosion. The problem is that an oxidized printed circuit board or a defective plug connection can cripple entire production processes.

Viledon® ChemControl filters and filtration systems from Freudenberg Filtration Technologies ensure operational safety. They eliminate harmful acidic gases from the air, thereby reliably protecting electronic components against corrosion. Inside the filters, colorful beads – the Viledon® ChemControl pellets – convert hydrogen sulfide, nitrogen oxide and other gases to inactive solids. But first-class filters and filter systems alone are not enough. “To succeed, we need to provide our customers with real added value”, commented Martin Berger, Global Business Development Manager for industrial filtration solutions. As with classic air and liquid filtration, Freudenberg has already put together a service package for its products in this market segment. This includes, for example, Viledon® ChemDetect corrosion analyses that are necessary to optimize the performance of multi-stage filter systems for pre-, gas phase and fine filtration.

Observe. Record. Check.

Services offered include the online monitoring system Viledon® ChemWatch. This technically sophisticated system monitors, records, checks and thus helps to prevent corrosion. In addition, the system measures and stores temperature, relative humidity and room pressure. “All values can be traced and analyzed for at least 18 months”, explained Renate Tapper, responsible for strategic advance development and innovation in the Industrial Filtration division. Dr. René Engelke, Market Seg-

ment Manager Gas Phase Filtration, continued: “Customers can retrieve the data on their computer via WLAN, for example, and can immediately identify problems and investigate their causes at any time. We provide support, as required.” Another option is a comprehensive service with technicians on site, as already practiced by Freudenberg Filtration Technologies in other markets with Viledon® filterCair. ■



Experts test Viledon® ChemWatch: from left to right, Dr. René Engelke, Martin Berger and Renate Tapper

FOOD AND BEVERAGES

HYGIENIC AIR QUALITY FOR SAFE FOOD PRODUCTION

KARSTEN SCHULZ WRITES ON FOOD HYGIENE FOR THE GERMAN BEHR'S HANDBOOK



Karsten Schulz, Manager Product Segment Engineering at Freudenberg Filtration Technologies, explains the basics of air filtration in food production in eight chapters of a practical reference book (available in German language only).

“We wanted to publish a standard work for users, in which the sometimes con-

fusing subject of ventilation technology is clearly explained. I think we have succeeded”, said Schulz. ■

If you would like to receive a complimentary copy of the 24-pages guide, please send an email to:

[@ viledon@freudenberg-filter.com](mailto:viledon@freudenberg-filter.com)

VILEDON FILTERS IMPRESS THE WORLD'S LEADING STAINLESS STEEL PRODUCER



The production plant of the leading steel producer in Finland

As a trace element in the body, iron is essential for energy metabolism. If inhaled from the air, however, iron is harmful to health. That was precisely the problem facing a stainless steel factory. During the production of ferrochrome, an alloy of iron, chromium and carbon, employees are exposed to iron-containing dusts and high temperatures. Reliable intake air filtration is therefore essential to ensure clean fresh air in workrooms and production halls. Freudenberg Filtration Technologies convinced the company through a comparative on-site test and is now ensuring maximum safety thanks to a new filter system.

The existing filter system for ferrochrome production did not work reliably. The filters only lasted a short while under the difficult conditions and needed to be frequently changed. In the search for a sustainable and efficient solution, the company ran a series of comparative tests. The contact came via Freudenberg Filtration Technologies partner Caverion. During the tests, Freudenberg achieved the best results, surpassing not only the values of the old system, but was also better than a competitor whose plant test had to be stopped after only three weeks. The testing process proved the superiority of the progressively built-up synthetic-organic filter media developed by Freudenberg compared to glass-fiber filters.

T60 filters pass the test with flying colors

For the purposes of the test, a completely new filter wall was built with 16 Viledon® T60 pocket filters of filter class M6. This filter is characterized by extreme toughness, high arrestance, low pressure drop, long service life and high efficiency. This overall package proved completely convincing in practical application. The T60 resisted the harsh conditions for 24 weeks – eight times longer than the competitor's filter. Switching to Freudenberg Filtration Technologies has already paid off. Procurement costs have been reduced, change intervals extended and employee safety guaranteed. ■

Caverion

Our partner Caverion is specialized in the design, construction, operation and maintenance of user-friendly and energy-efficient technical solutions for buildings and industries. Whether for light, energy, heating, cooling, water or ventilation, the company ensures the function and reliability of complex systems.

For more information, visit www.caverion.com

IN BRIEF

NEW PRODUCT PAGES AND SEARCH FUNCTION ON THE WEBSITE

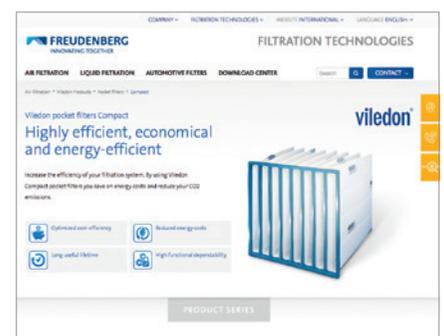
Clear, comprehensive and easy to navigate! With just a few mouse-clicks, you can find out all you need to know about Freudenberg Filtration Technologies, the brands, products and services.

As well as our extensive range of top-quality filters, you can also explore our comprehensive development and installation program for new and retrofitted filter housings. Just take a look inside the download section: Freudenberg Filtration

Technologies has put together detailed information on a variety of topics.

The filtration specialist has made the product pages and product search on the website easier and more user-friendly. Just click and have a look for yourself. ■

www.freudenberg-filter.com



MORE THAN 1.6 MILLION EUROS DONATED

REFUGEE FUNDRAISING PROJECT IS A GREAT SUCCESS

Help was needed, we helped – and we continue helping. A Freudenberg fundraising project for refugee aid ran up to the end of December 2015. Colleagues, shareholders and retired former Freudenberg employees across the globe donated 538,500 Euros. For each Euro donated, the company contributed another two Euros, tripling the sum. By Christmas, the joint donation pot of colleagues, partners and the Freudenberg Group had reached the sum of 1,615,500 Euros.

Since September 2015, the Freudenberg Group has been using the money to support more than 30 local and international refugee projects in which Freudenberg colleagues are also involved as volunteers. The focus is on language training and education as well as the support and integration of refugee children and adolescents. ■



Some of the projects Freudenberg is supporting:

Integration through language

150,000 Euros was donated to the Goethe Institute and its facilities in Germany. Their goal is to improve access to language for young refugees and thus facilitate integration and education.

A new home in Weinheim

The “Pilgerhaus” (Pilgrim House) social facility in Weinheim looks after around 100 young people who have come to Europe alone. Freudenberg donations are helping to support the teaching of German as well as comprehensive therapy and care services for the youngsters.

At home in Kufstein

In Kufstein, Austria, near the Freudenberg Sealing Technologies factory, around 30 young people were thrilled to receive 10,000 Euros for computers, courses and teaching materials.

Aid organizations worldwide

Whether in Italy, Greece or Turkey, a large proportion of the Freudenberg donations will be going to organizations working for refugee relief abroad.

TRADE FAIRS AND EVENTS

We look forward to meeting you!

April 19–21, 2016

POWTECH – Leading trade fair for mechanical processing technologies, analysis and handling of powders and bulk solids, Nuremberg, Germany

April 19–22, 2016

PaintExpo – Leading trade fair for industrial coating technology, Karlsruhe, Germany

May 30–June 3, 2016

IFAT – Leading international trade fair for water, sewage, waste and extractive industries, Munich, Germany

IN BRIEF

NEWS ON LINKEDIN

FOLLOW US AND STAY WELL INFORMED

Perhaps you have seen it already. Freudenberg Filtration Technologies is increasingly active on LinkedIn. “On our LinkedIn profile page, we provide customers, partners and people interested in our products and services with the latest information and topics about various industries”, explained Patrick Olscha, Marketing & Communication Specialist at Freudenberg Filtration Technologies. “We look forward to enjoying direct contact with you via LinkedIn.” ■

Visit us at

www.linkedin.com/company/freudenberg-filtration-technologies



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