

# EUROVENT 2019

## STRENGTHENING THE AIR FORCE

### CAMFIL - 08 MARCH 2019

Three critical factors have made the energy consumption of air filters a huge focus of attention for the ventilation industry. First, energy prices are rising. Secondly, demands to reduce carbon dioxide emissions are becoming stricter. Thirdly, our understanding of the appalling effects of poor air quality on our health and wellbeing is increasing.

To address these trends, a new Eurovent classification system that confirms the performance rating of filters according to international standards came into force on 1 January 2019.

Air filters can be graded from A+ to E using a coloured labeling system that will be familiar to most people from its association with electrical white goods such as fridges and freezers.

Grade A+ represents the lowest energy consumption and E is the highest. The classification will give customers a better understanding of the annual energy consumption, average filter efficiency and minimum filter efficiency making it easier to compare different filters.

Under Eurovent's scrutiny, energy efficiency demands have increased and as a consequence, many filters previously considered A+ have been downgraded to A. Specifiers selecting air filters to Eurovent's new test standard will therefore save money and be assured of maintaining healthy indoor air quality.

The new energy rating follows publication of ISO 16890:2016, the international standard for particle filtration in buildings which replaced previous test standards on June 1, 2018. Participants in the Eurovent

energy classification are obliged to supply a full ISO16890 test report as a basis on which to calculate a filter's energy consumption.

ISO16890 replaces EN 779:2012 in Europe. (There are important differences between ISO 16890 and the standard it supersedes.)

For the first time, ISO16980 tells people specifically what a filter does. For example, a typical air filter of a class that is going to make a difference to IAQ is defined in the new standard as 'ePM1 60 percent minimum' where 'e' means the removal efficiency of the filter, PM1 is the range of particulates and 60 percent is the percentage of particles the filter will remove.

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# ARE YOU READY FOR THE NEW EUROVENT STANDARD 2019?

A+

A

B

C

D

E



## EUROVENT 2019

There are essentially four types of particulate matter (PM) found in air graded by size. They are:

1. Coarse particles, often 10 microns ( $\mu\text{m}$ ) or bigger ( $1\mu\text{m} = 1/1,000^{\text{th}}$  of a millimetre). Examples include visible coarse dust, sand, leaves, hairs and other large organic particles.
2. PM10 – airborne particles  $\leq 10\mu\text{m}$  in diameter including fine dust and organic particles.
3. PM2.5 – airborne particles  $\leq 2.5\mu\text{m}$  in diameter such as pollen, spores and other organic particles.
4. PM1 – airborne particles  $\leq 1\mu\text{m}$  in diameter, including combustion particles, diesel fumes and viruses.

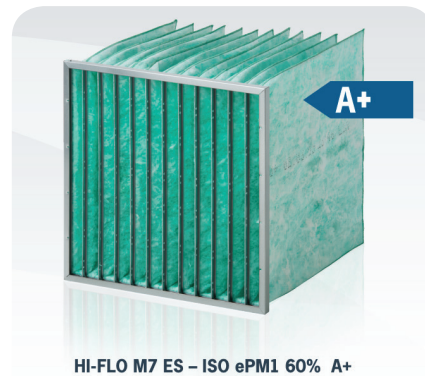
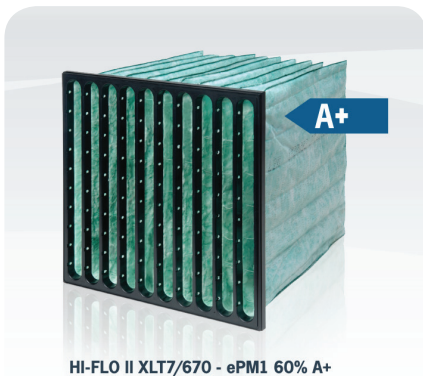
Coarse particles can be filtered by the human body.  $10\mu\text{m}$  particles can be stopped as they enter the throat.  $2.5\mu\text{m}$  particles are dealt with in the lungs and alveoli. Parts of PM1 however, can enter the bloodstream and contribute to serious illness like heart attacks, lung cancer, dementia and emphysema.

That's why it's important to categorise filters on the basis of how efficiently they perform against PM10, PM2.5 and PM1 particle sizes and this is the central purpose of a new global air filtration standard – ISO16890.

Using the right air filter not only saves money, but also maintains healthy indoor air quality. Eurovent's updated rating system for classifying energy efficiency makes it easier for you to find the right air filter with the lowest energy usage and the highest indoor air quality.

### EN ISO16890:2016

- ePMx – efficiency of protection against particles greater than or equal to  $0,3\mu\text{m}$  to  $X\mu\text{m}$
- Average efficiency = average value of initial efficiency and discharged (conditioned) efficiency.
- Final pressure drop: 200 Pa (Coarse), and 300Pa (ePMx)
- Discharge of a complete filter in IPA-vapor
- Test dust: ISO A2/AC Fine ( $\approx$  double dust holding in grams)
- Air flow rate:  $3400\text{ m}^3/\text{h}$  ( $0.944\text{ m}^3/\text{s}$ )
- More equal to real environment



For more than half a century, Camfil has been helping people breathe cleaner air. As a leading manufacturer of premium clean air solutions, we provide commercial and industrial systems for air filtration and air pollution control that improve worker and equipment productivity, minimize energy use, and benefit human health and the environment. We firmly believe that the best solutions for our customers are the best solutions for our planet, too. That's why every step of the way – from design to delivery and across the product life cycle – we consider the impact of what we do on people and on the world around us. Through a fresh approach to problem-solving, innovative design, precise process control and a strong customer focus we aim to conserve more, use less and find better ways – so we can all breathe easier.

The Camfil Group is headquartered in Stockholm, Sweden, and has 30 manufacturing sites, six R&D centres, local sales offices in 26 countries, and 4,480 employees and growing. We proudly serve and support customers in a wide variety of industries and in communities across the world. To discover how Camfil can help you to protect people, processes and the environment, visit us at [www.camfil.com](http://www.camfil.com).