

There are no translations available.

The ISO 16890 standard is the new global standard for testing and classification of air filters, and replaces the existing EN779:2012 norm.

This new ISO 16890 standard is a big change in the way air filters are evaluated, it has been published in December 2016.

Why a new filtration standard – ISO 16890?

The new ISO16890 test method shifts the focus on filtration performance to the classes of particulate matter size (PM) and is therefore a much more realistic test criteria than the theoretical EN779:2012.

This means that with the new ISO 16890 standard filter efficiencies will be determined based on particulate matter size classes PM1, PM2.5 and PM10, which are also used as evaluation parameters by the WHO (World Health Organization) and other authorities. Based on these parameters it will be easier for users to select the right air filter based on their requirements.

2.5 μ = 0.0025mm

10 μ = 0.01mm

What is different?

ISO 16890 – The new group classification

The new ISO16890 standard divides air filters into four groups. A prerequisite for each group is that a filter captures at least 50% of the appropriate particle size range. If a filter, for example, captures more than 50% of PM1 particles, it will be grouped as an ISO ePM1 filter. The respective efficiency is then reported, rounded in 5 % increments.

Alongside fine dust filters, the new ISO standard also evaluates coarse dust filters as ISO coarse: that is, filters that capture less than 50 % PM10.

What does PM1 mean?

PM1 means all Particulate Matter with size smaller than 1 micron (a thousandth of a millimetre), just to be clear:

$$1\mu = 0.001\text{mm}$$

What is particulate matter?

Check out our short video what is particulate matter here <https://youtu.be/yO5tq6vDjVw>

ISO 16890 Group classification:

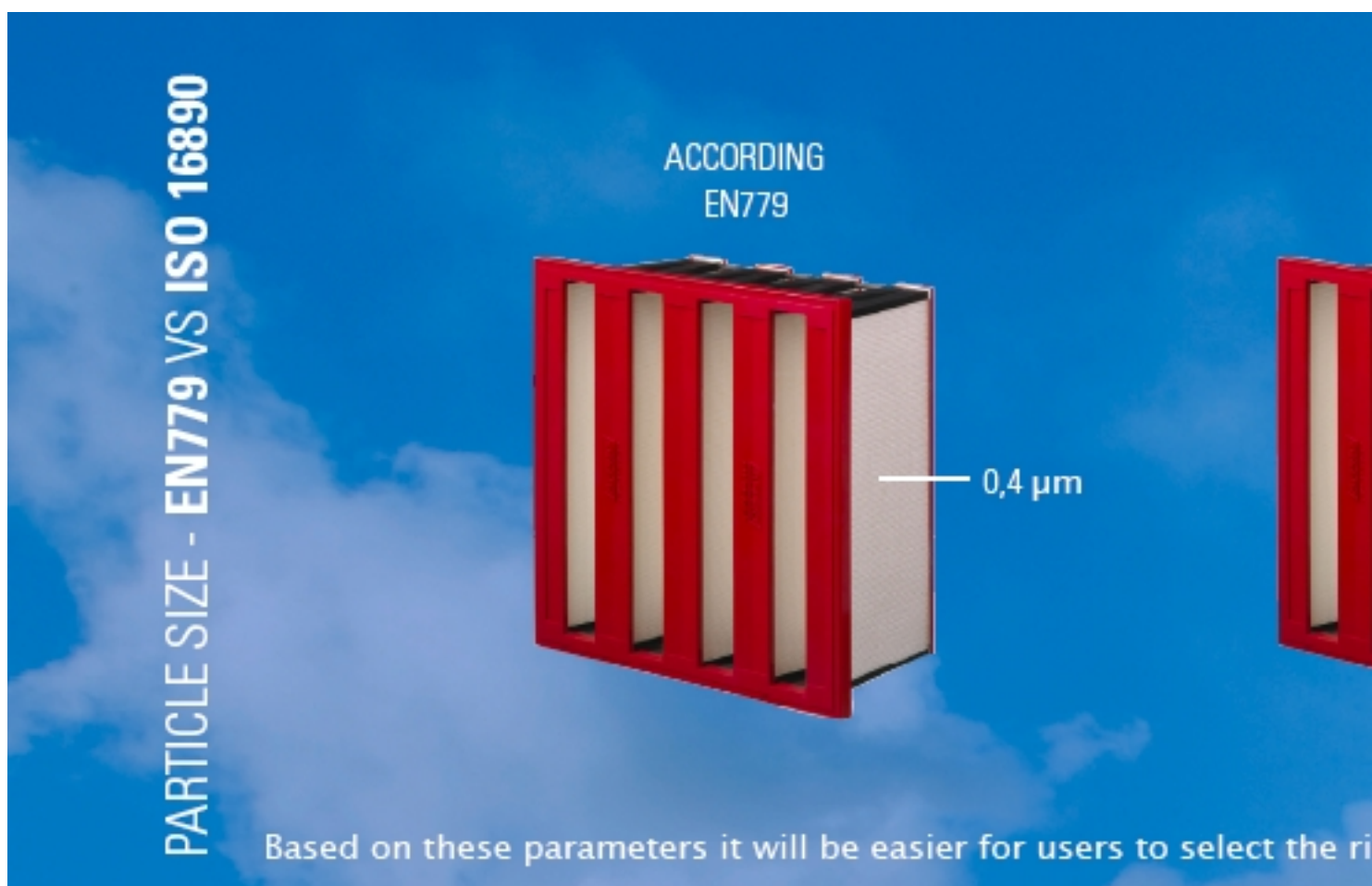
Group classification according ISO

ISO ePM1	ePM1,min ≥
ISO ePM2.5	ePM2.5,min
ISO ePM10	ePM10 ≥ 50
ISO coarse	ePM10 ≤ 50

With the introduction of the new ISO16890 standard, actual operating conditions will be more

effectively taken into account. Instead of considering only the particle size 0.4 microns (EN779:2012), as previously, a broad range between 0.3 microns and 10 microns will be used to determine separation efficiencies for particulate matter fractions PM₁₀, PM_{2,5} and PM₁ (ISO 16890). In order for an air filter to be rated to PM₁ or any of the other PM sizes it will need to demonstrate a minimum efficiency of 50% and this will be recorded incrementally to the closest 5% – so an air filter performing at 66% to PM₁ particles will be rated at ePM₁ 65%.

For coarse filters the new standard will include filters that capture less than 50% of particles in the PM₁₀ range –these will be known as “ISO Coarse” and will detail their PM₁₀ performance i.e. “PM Coarse 45%”.



Comparing EN779 with ISO16890 classes

A simple ‘translation’ of classes ISO 16890 to EN779:2012 fails because of the very different

measurement and assessment methods. As of today there is no standard table available. As a guide, we initially offer the following translation table:

Class	ISO ePM1	ISO ePM2.5
G3	–	–
G4	–	–
M5	–	–
M6	–	50 – 65%
F7	50 – 65 %	65 – 80%
F8	65 – 80 %	>80 %
F9	>80 %	>95 %

* All figures, descriptions, references and technical data contain

The benefits of ISO 16890

The new ISO 16890 standard offers several improvements when compared to the EN779 Standard:

- One global international standard
- The ISO16890 records their performance at a particle spectrum of 0.3 up to 10 microns (versus the EN779 test which qualified fine filter performance at 0.4 microns)
 - Fractional efficiencies of the filter prior to and after IPA discharge of any electrostatic properties can be seen.
 - Filters can be chosen for their specific performance related to the need of the application.

