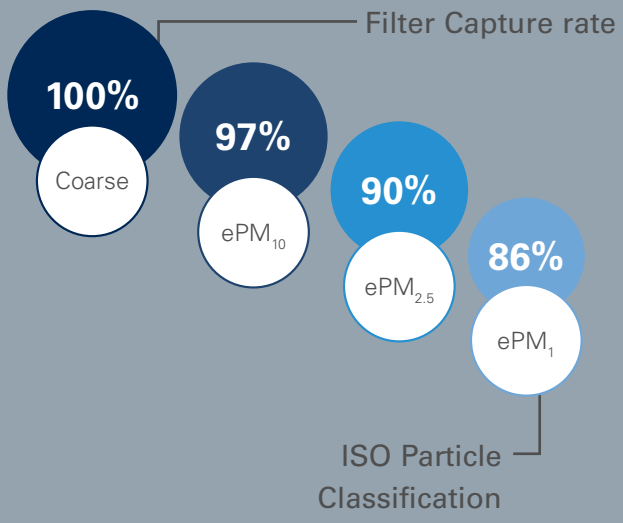
Donaldson
FILTRATION SOLUTIONS

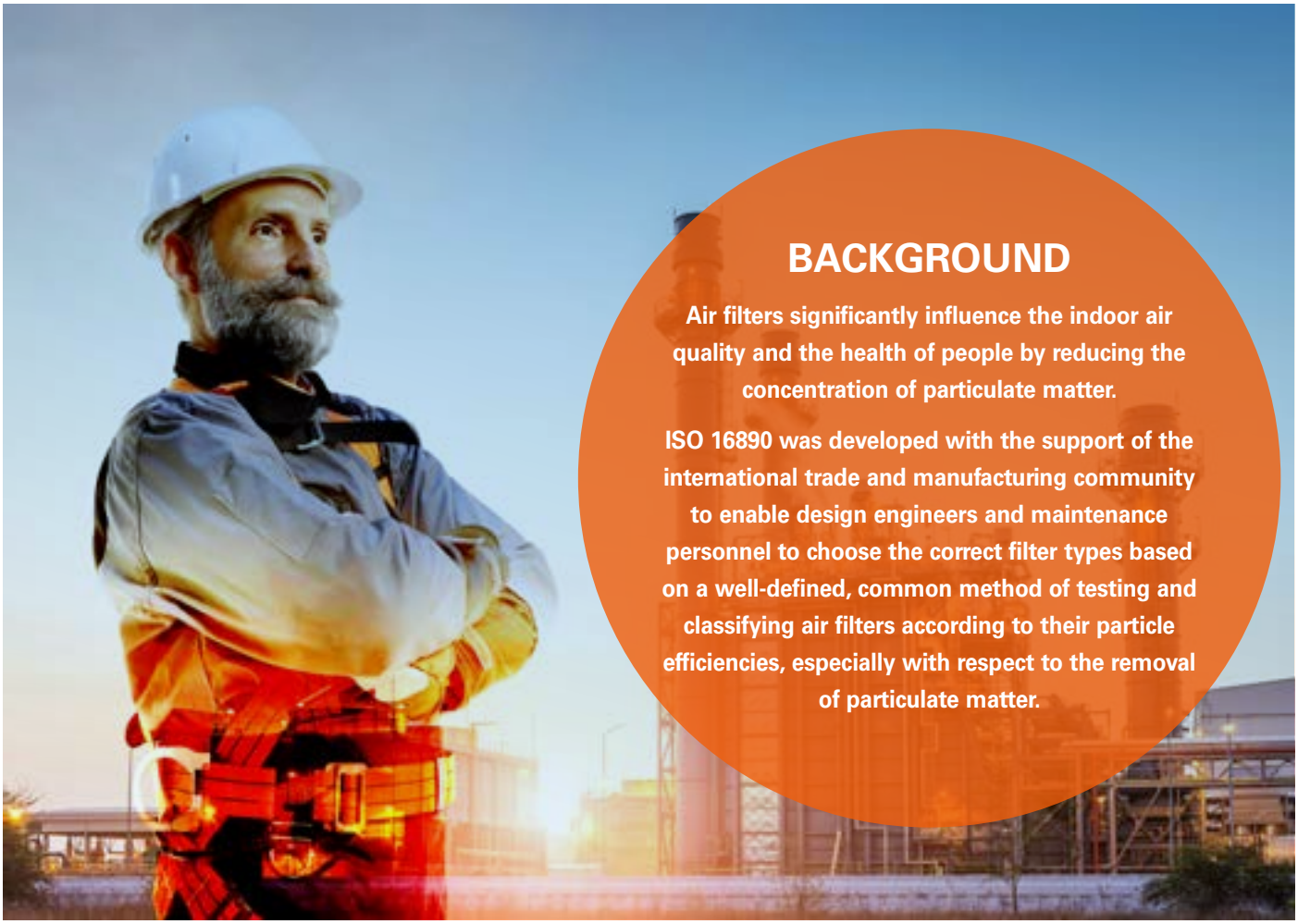
ISO 16890
THE NEW AIR FILTRATION STANDARD

THE NEW GLOBAL STANDARD FOR AIR FILTRATION IS HERE:
ISO 16890

The ISO 16890 standard measures air filters based on their capability to intercept different particulate sizes, giving better and more meaningful results compared to other standards.

One of the biggest advantages of this new standard is that it will bring a significant harmonization to the air filtration industry – by eventually replacing regional standards (e.g. EN779, ASHRAE, MERV, BIA, etc.), that can be more easily understood by all stakeholders.





BACKGROUND

Air filters significantly influence the indoor air quality and the health of people by reducing the concentration of particulate matter.

ISO 16890 was developed with the support of the international trade and manufacturing community to enable design engineers and maintenance personnel to choose the correct filter types based on a well-defined, common method of testing and classifying air filters according to their particle efficiencies, especially with respect to the removal of particulate matter.

THE FOUR CERTIFICATION GROUPS

Air filter elements according to the ISO 16890 series are evaluated in the laboratory by their ability to remove aerosol particulate expressed as the efficiency values ePM_1, $ePM_{2,5}$ and ePM_{10}. The particulate removal efficiency of the filter element is measured as a function of the particle size in the range of 0,3 µm to 10 µm of the unloaded and unconditioned filter. After the initial particulate removal efficiency testing, the air filter element is conditioned and the particulate removal efficiency is repeated on the conditioned filter element. The average efficiency of the filter is determined by calculating the mean between the initial efficiency and the conditioned efficiency for each size range.

ISO CLASSIFICATION	PARTICLE SIZE RANGE (µm)	FILTER CAPTURE RATE
Coarse	Larger than 10	≥ 50%
ePM_{10}	0,3 - 10	< 50%
$ePM_{2.5}$	0,3 - 2,5	< 50%
ePM_1	0,3 - 1	< 50%

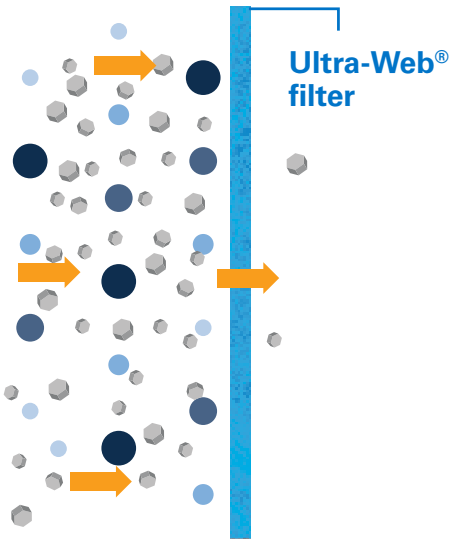
HOW DOES IT WORK?

ISO 16890 expresses filter efficiencies based on the level of protection achieved against the size of the particulate matter (PM) in four categories: Coarse, ePM_{10}, $ePM_{2.5}$ and ePM_1.

For example, PM 2.5 represents a particle size smaller or equal to 2.5 microns (µm). So, the Donaldson Ultra-Web® SB filter which can capture 73% of particles smaller or equal to 1µm, 79% of 2.5µm and 92% of 10µm particles has received the ISO ePM_1 70% certification*.

Several other Donaldson filter media have different ISO 16890 standard testing results based on their own capture rate of the different particulate matter sizes.

For more information about a specific filter media efficiency, please contact your Donaldson sales representative.



**Based on non-pulsed test results. Please note that surface filtration media will become more efficient with pulse cleaning.*

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Contact us at **IAF-Europe@donaldson.com**

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Donaldson Europe BV
Interleuvenlaan 1, B-3001 Leuven · Belgium
Phone + 32 (0) 16 38 38 11