

LIFE EXPECTANCY OF FILTERS IN AN AIRMASTER VENTILATION UNIT

To ensure low operating and servicing costs on an Airmaster ventilation unit, Airmaster uses, as standard, filters with an exceptionally large surface area in relation to the airflow for which the units are designed.

Compared with recognised brands of central ventilation systems, the filter surface in relation to the airflow in the filter of an Airmaster ventilation unit is roughly 2.5 times larger.

Not only does the filter have a long service life, but its large filter area results in lower energy consumption as the energy needed to draw air through the filter decreases the less resistance there is in the filter.

A lower final pressure also contributes to lower energy consumption throughout the life of the filter.



WHEN SHOULD A FILTER BE CHANGED?

This depends on multiple factors. For several years, Airmaster has been systematically collecting filters from many different types of units, room types and locations to learn more about this. Based on our findings, we recommend the average filter change intervals below.

The intervals may vary if the unit is installed in particularly polluted areas, such as construction sites or in rooms with a lot of dust.

- Units with an annual operating time of less than 3,000 hours. Maximum service life 14 months
- Units with an annual operating time of between 3,000 and 5,000 hours. Maximum service life 12 months
- Units with an annual operating time of more than 5,000 hours. Maximum service life 6 months

This means that units installed in typical offices, classrooms and institutions should have their filter changed at least every 14 months.

Airmaster's guidelines regarding service interval should be considered as a supplement to any national requirements.

	Central	Airmaster Decentral
Speed	2 - 3 m/s	0,7 - 1,3 m/s
Pressure loss start	50 - 100 Pa	20 - 30 Pa (ePM ₁₀) 30 - 50 Pa (ePM ₁)
Pressure loss end	200 - 250 Pa	75 - 150 Pa

Table 1 – Comparison of pressure loss for central and Airmaster decentral.

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Airmaster ventilation units are factory supplied with filters pursuant to the latest standard, ISO 16890.

ISO 16890 uses designations that classify filtration efficiency in relation to particle sizes.

PM1, PM2.5 and PM10 indicate the particle size in μm , with 10 μm being the largest particle and 1 μm being the smallest. An e in front of the PM (ePM) indicates the efficiency based on the mass of particles that could be removed in use, which is given in %. For example, a filter that meets the requirements of ISO ePM1 (>55%) can remove more than 55% of the particles of size 1 μm .

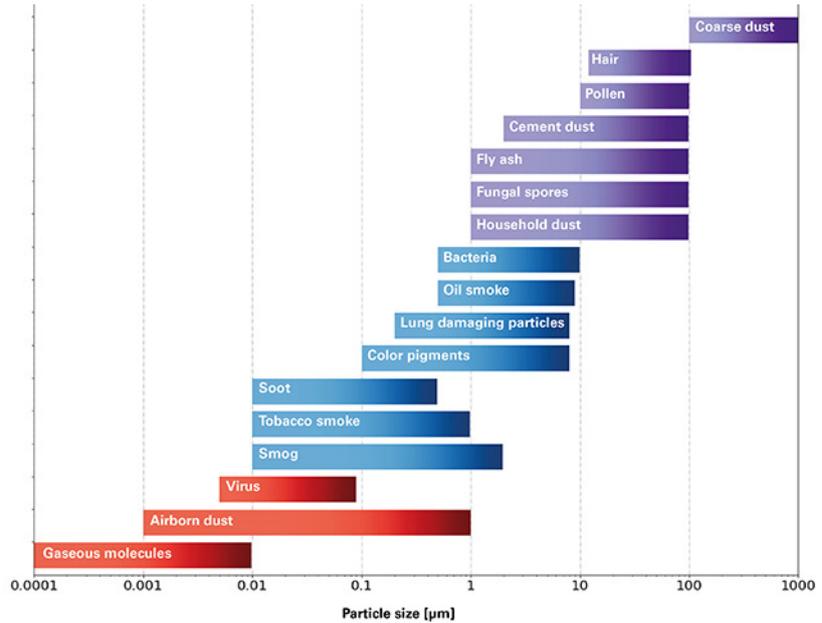


Figure 1 – Particle size of normally occurring atmospheric air pollutants. Source: Danvak, Grundbog Varme- og klimateknik, 3. udgave (Danvak heating and climate engineering textbook, 3rd edition – Danvak is a Danish network for technical and scientific professionals working with heating, ventilation and air conditioning).

Classification cf. ISO 16890	Classification cf. EN 779:2012
ISO ePM ₁₀ (>75%) (standard)	M5
ISO ePM ₁ (>55%) (option)	F7
ISO ePM ₁ (>80%) (option)	F9

Table 2 – Filter classifications

ISO 16890 classification cannot be directly compared with the previous classification EN 779:2012, but Table 2 shows how Airmaster sees the two classifications in relation to each other.

The ISO 16890 classifications mentioned are the filter classes we use most. Other filter classes can be supplied on request.

Airmaster also supplies a wide range of filters for earlier models of Airmaster units, allowing us to continue to change filters regardless of the age and model of the unit.

Filters in Airmaster ventilation units are placed in a frame which forms a tight seal between the two. Unfortunately, we often find that when unoriginal filters are used, they do not fit tightly in the filter frames and thus do not comply with EN 1886:2007. The use of unoriginal filters can therefore cause excessive leakage, resulting in more soiled components, higher energy consumption and poorer air quality.

Airmaster therefore always recommends the use of original Airmaster filters.

AIRMASTER®
ventilation in balance

Airmaster A/S
Industrivej 59
DK 9600 Aars
+45 9862 4822
info@airmaster.dk
www.airmaster-as.com