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Air Movers and COVID-19 (SARS-CoV-2)

Air movers for the industry, also known as Negative Pressure Units, can contribute to improve the exchange of air in badly ventilated rooms* and thereby reduce the spreading of COVID-19 virus.

When people are working in areas with poor ventilation, COVID-19 virus might accumulate by means of exhaled aerosols ("Airborne droplet nuclei" which can contribute to an airborne virus transmission). By increasing air exchange in these areas, the risk of this accumulation can be minimized.

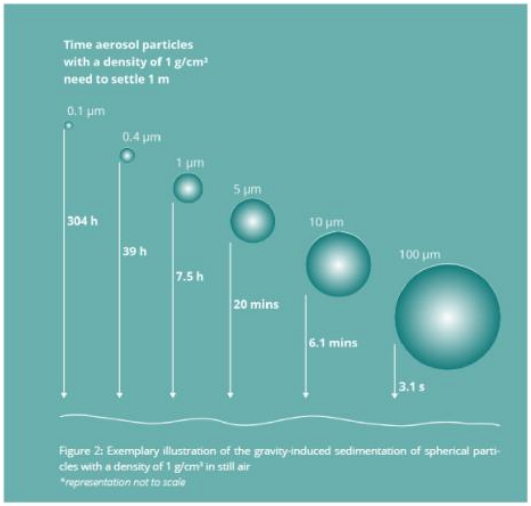
Picture: RONDA® NPU 1250 Air Mover
https://broendum.com/english/ronda-npu-1250/

An air mover with an H14 filter not only increases air exchange (when the exhaust air is directed outdoors), but can also be used to reduce hazardous particles, including COVID-19-carrying aerosols, when the air mover is used to recirculate air in the working area / staff room.

Likewise, a mobile air mover can be used for containment in closed areas or isolation rooms, where a negative pressure must be maintained, in order to reduce spread (as is also known from the industry in contamination boxes concerning eg. asbestos).

Studies from „*Aerosol and Bioengineering Laboratory, College of Engineering, Konkuk Universität, 120 Neungdong-ro, Gwangjin-gu, Seoul 05029, Korea; leebu@konkuk.ac*“, published by MDPI, are indicating, that the smallest aerosol capable of carrying COVID-19 virus is 0,4 µm. The virus itself is even smaller, but it requires a “drop”/aerosol to survive.

HEPA H14-filters used in air movers are designed to filter 99,995% MPPS (MPPS is normally between 0,2 and 0,3 µm).



Particles <5 µm are suspended particles and they can stay suspended for several minutes in stagnant air.

If the air is swirled around, they can in fact remain floating for very long periods of time.

That is why it is important to reduce these particles that float in the air and can expose employees to risks.

Figure 1 (page 12) - https://zenodo.org/record/4350494

*** Air movers / Negative Pressure Units cannot replace a ventilation system and should not be the only type of extraction used, but they can act as a supplement. If there is no other ventilation, a mobile air mover will be an obvious option.**

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Sources:

https://zenodo.org/record/4350494 Position paper of the Gesellschaft für Aerosolforschung on understanding the role of aerosol particles in SARS-CoV-2 infection → Gesellschaft für Aerosolforschung e.V.

https://eu.usatoday.com/in-depth/graphics/2020/10/18/improving-indoor-air-quality-prevent-covid-19/3566978001/
Ventilation and air filtration play a key role in preventing the spread of COVID-19 indoors

https://www.epa.gov/coronavirus/air-cleaners-hvac-filters-and-coronavirus-covid-19
Air Cleaners, HVAC Filters, and Coronavirus (COVID-19)

Furthermore:

https://www.baua.de/DE/Angebote/Publikationen/Fokus/Lueftung.html

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