

# TROX CORONA TICKER

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datum	rubrika
13.07.2020.	TROX Care / tvrtka / tisak / proizvodi

The Corona pandemic has a great impact on our lives. It has also affected TROX's business activities in recent months, and it will give rise to some long-term changes: in addition to social distancing, travel warnings and an increased use of video conferences, the pandemic also has an **impact on the use of air-conditioning and ventilation systems**, and therefore also on our TROX products, of course.

An efficient mechanical ventilation system reduces the risk of infections, as indoor air is diluted using outdoor air. Another aspect is that many people will focus more strongly on the benefits of air-conditioning and ventilation systems in the future. This includes, for example, ensuring a particular humidity level or temperature.

It has long been known that these aspects have a **positive effect on human health**, even if they have often been neglected in public awareness to date.

## AIR-CONDITIONING AND VENTILATION TECHNOLOGY AND CORONA

**HEPA filters** can effectively filter out viruses. This type of filters is typically used for sensitive areas such as clean rooms and operating theatres in hospitals. However, it is not possible or even expedient to modify ventilation systems and to generally integrate particulate filters. Using HEPA filters to filter outdoor air does not contribute to a reduction of infection risks. These filters give rise to a higher loss of pressure, higher energy consumption and even to a reduced flow of fresh air in buildings. This is why HEPA filters should only be used for fresh air in sensitive areas.

When used in **secondary air** units (air cleaners, fan coil units, etc.), HEPA filtering can have a positive impact on the infection risk, in particular where there is no or only a limited supply of outdoor air. Replacing filters more frequently as a reaction to the Corona pandemic has no positive effect and is therefore not recommended.

Contaminants can also be effectively destroyed through a suitable use of UV treatment. However, it is usually not expedient to use UV treatment on outdoor air, in order to reduce the risk of infections.

**Air cleaning units operating with recirculated air** can be used as a supplement or an alternative, if it is technically not possible to sufficiently dilute indoor air with outdoor air by means of mechanical ventilation.

**The flow behaviour and air distribution in rooms** are also subjects of debate in expert circles:

- › An **even dilution** of contaminated indoor air can be ensured most effectively by means of **mixed flow air distribution**. Displacement ventilation can provide for areas that are less affected than would be the case with mixed flow air distribution. However, it also provides for more strongly affected areas. This means that both methods have their advantages and disadvantages.
- › **Ventilation based solely on opening windows** cannot provide for a dilution effect on a similar level as mechanical ventilation, as its effectiveness depends strongly on the temperature difference between indoor and outdoor air and on the wind situation.

## SUMMARY

- › Mechanical ventilation using fresh air reduces the infection risk in rooms.
- › Recirculation air cleaning can be a good solution as a supplement or alternative, if sufficient mechanical supply with fresh air is not possible for structural reasons. This is especially true when high-quality filters are used.
- › Ventilation based on opening windows does not allow for comparable results, as its effectiveness depends on temperature differences and the wind.
- › Pure recirculation air systems without suitable filtration/cleaning, such as recirculation air cooling units/split units can increase the infection risk under certain circumstances.