BETTER AIR FOR A BETTER QUALITY OF LIFE

Press Release

SARS-CoV-2: Guidelines to reduce the infection risk in confined environments

Following the COVID-19 pandemic and the risk of contagion in public and private confined spaces, in view of the reopening to the public of shops, bars and restaurants it is important to reaffirm the importance of the role of air conditioning equipped with effective ventilation and air filtration systems to reduce the risk of contagion.

Cartigliano, 13th May 2020

In this particular period characterised by the risk of contracting the SARS CoV-2 infection in confined spaces, we must emphasize **the important role that air conditioning systems can play for the containment of the virus spread**, together with the other measures provided by governments.

It is well known that the contagion occurs by inhaling droplets produced by coughs and sneezes in cases of social distances lower than one/two meters, contact with contaminated surfaces, or inhaling faecal plumes from toilets.

Recent surveys show that infection risk increases when there are large amounts of aerosols, classified as $PM_{10,}$ $PM_{2,5}$ and nanoparticles PM_1 with dimensions respectively lower than 10 μm, 2,5 μm and 1 μm. SARS CoV-2 virus is on last category with a dimension between 0,08 μm and 0,16 μm.
Particles with larger dimensions coming from outdoor or indoor air can be a means of transport for the virus. Under ventilated, occupied spaces can increase the risk of infection.
Items that can decrease infection risk within occupied spaces, are the "air renewal rate" and the air filtration efficiency.

In confined spaces that do not have air-conditioning systems, ventilation can be achieved by the opening of windows (if possible). This does not guarantee air filtration and can cause occupant discomfort and energy waste. Therefore, in

addition to an unsatisfactory level of IAQ (Indoor Air Quality), in the presence of people infected with viruses, the absence of a constant exchange of air also increases the risk of contagion.

This demonstrates the important role of a mechanical ventilation system, with controlled inlet of external purified and handled air and the extraction and expulsion of used air, above all during such a difficult pandemic.

ASHRAE, REHVA and national associations **guidelines** suggest to increase as much as possible the renewal air inlet in existing installations and to assure correct pressure differences to toilet extract systems.

By paying close attention to the theme of the IAQ, innovative CMV (Controlled Mechanical Ventilation) and DOAS (Dedicated Outdoor Air Systems) have been developed over the years, particularly suitable for easy installation in bars, shops, large and medium-sized sales areas, and restaurants. These packaged high efficiency systems do not require to be fed with hot or chilled water or refrigerant gas.

These several systems can have **electronic filers that capture particles through an electrostatic field** with minimum losses than can reduce the energy used by the fans. They also perform an **ionizing action to the treated air**, with an effective **microbicidal action on bacteria and viruses**. These **filters are washable** and do not require replacement.

Aware that each building has different air conditioning needs, several renewal and purification systems must be considered
for **commercial** and **residential** applications, **air handling units** for hospitals, process industry, data centres, full fresh air systems, **air renewal and air-conditioning systems** for medium and high attendance for commercial centres, multiplex cinemas, restaurants.