

NAADUK advises on higher grade masks and the need for ventilation hygiene to limit airborne spread of Covid-19

Published by [Rhys Taylor-Brown](#) on January 15th 2021, 10:10am

As the Covid-19 pandemic has wore on and more knowledge has been sourced about the virus and how it is transmitted, [The National Association of Air Duct Specialists UK \[NAADUK\]](#) has been advising its members and others on how to limit the airborne spread of the disease as much as possible.

Following NAADUK's latest Covid-19 guidance review, published on January 11, 2021 and headed up by its president, Peter Reid, the association advised businesses and organisations to equip staff with the highest possible grade of face masks and adhere to strict procedures around the hygiene of ventilation systems to best reduce spread.

On masks, NAADUK has urged all of its members to practice mask wearing at all times outside as well as inside and recommended that the mask worn is of FFP2 or N95 grade, or at minimum a surgical mask, following advice from the World Health Organization that the virus can travel further than two metres and revelations about the number of people not wearing masks.

The mask recommendation is based on a [Lancet 2020](#) study, which indicates that during inhalation, out of a 100-particle reference value just one particle would penetrate an FFP2 or N95 grade mask, while 25 particles would leak through a surgical one and be inhaled by the wearer. These values are dwarfed by the figures for a simple homemade tea cloth mask, which would be penetrated by 33 virus particles in every 100 which come into contact.

The study also indicates that if one coughs while wearing a mask, only 30 out of 100 particles would leak out of a FFP2 or N95 grade mask, compared to 50 for a surgical mask and 90 for a tea cloth mask. The consensus, therefore, is that the higher-grade masks are most effective both for protecting oneself as well as preventing potential transmission to others.

In NAADUK's advice on masks, Reid also quotes a recent statement from the University of Exeter's Dr David Strain, who told BBC News that the local NHS Trust, which operates the Exeter Nightingale Hospital, "took the decision to upgrade our medical teams' masks from standard surgical masks to PP3, meaning that we have far less staff succumbing to transmission of the virus", a course of action that has enabled the Exeter Nightingale facility to operate while others have not been able to do so.

Dr Strain's comments came amid news that most Nightingale Hospital's were unable to operate owing to an insufficient workforce, with [ten per cent of NHS staff off sick](#) due to contracting the virus.

In addition to previous Covid-19 guidance published by NAADUK, Reid advised building owners and managers to maximise ventilation in the workplace to help reduce viral transmission.

The latest guidance, which is supplementary to that issued by the government and relevant to all commercial and public buildings including offices, factories, schools, hotels, hospitals and healthcare facilities, is based on a worldwide consensus that increasing ventilation rates has proven to be one of the most effective measures in reducing Covid-19 transmission indoors. NAADUK has also concluded that simply cleaning a ventilation system and maintaining ventilation hygiene is the most cost effective and proven method of allowing such systems to operate to full potential.

Reid commented: "So many, hospitals and healthcare facilities in particular, will benefit from this guidance around ventilation due to the higher risk of contact with Covid-19 and the specialised work procedures required."

The NAADUK guidance notes that building operators should be aware that ductwork in the UK can often be heavily contaminated and provide ideal conditions for bacteria to multiply. Meanwhile, extract ductwork components such as egg crate grilles, dampers and flexible ducts can easily become fully blocked and lead to air simply swirling inside buildings. The lack of air extraction and thus air cleaning generates dead spots with stagnant air which can increase the likelihood of viruses like Covid-19 spreading. The lack of air movement also leads to reduced heat transfer, which can lead to an increase in other illnesses.

Reid and NAADUK advise that with a UK lockdown in force and the majority of people working from home, now is the ideal opportunity for employers to set about ensuring that ventilation systems are cleaned and maintained.

Reid notes: "A clean ventilation system is essential for a healthy building. Covid-19 is a pandemic with huge consequences, and the next wave of the pandemic could hit harder. It makes sense to comply with the law as a minimum. In 1992 and revised in 2013, Health & safety stated that all internal parts of mechanical air conditioning systems must be clean. In addition, employers and building owners should risk assess the ventilation systems in their building for ventilation rates and hygiene condition. There is a legal responsibility for employers to provide a safe place of work for employees under national health and safety legislation.

"It is now the ideal time to ensure that ventilation systems within buildings are hygienically cleaned and maintained before returning to work and in the future. It makes good financial sense that whilst the buildings are unoccupied it would be easier and cheaper to gain access to comply with current legal requirements."

NAADUK's guidance concludes that by maximising indoor ventilation, the risk of Covid-19 transmission will shorten significantly as air is consistently recycled within potential transmission zones, avoiding stagnant dead spots of air and increasing staff safety and wellbeing. It is also likely to reduce energy costs thanks to limiting the burden placed upon fans, motors, coils, chillers and boilers, which in a contaminated system would have to work harder to sustain air flow around the building.

Reid concluded: "Many of our member companies and their operatives are working in the same infected areas as NHS and Care Home Staff during this outbreak, so we would urge them to follow the guidance and safe working practices."