



## **Clean Ventilation Systems – Never More Essential**

**Richard Norman, Managing Director of Indepth Hygiene Services Limited, the UK's leading company for specialist cleaning of ventilation systems talks about the importance of ensuring they are thoroughly cleaned.**

The Workplace (Health, Safety and Welfare) Regulations 1992 provide an overall framework of legislation for those responsible for the management of buildings and premises to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air. Where this ventilation is provided by mechanical means the Regulations require those mechanised ventilation systems to be maintained (including under Regulation 5 cleaned “as appropriate”) in efficient working order. Failure to carry out these duties is a breach of the Regulations. Under the complementary Management of Health and Safety at Work Regulations there is a duty on every employer to conduct a risk assessment and to manage that risk appropriately.

In one major area of direct Government responsibility - the NHS – there is a written commitment within its own constitution to ensure “patients are treated in an organisation that provides its services in a clean and safe environment”. The very air that patients, staff and visitors breathe must be safe and since the essential functions of ventilation systems is to circulate clean safe air it is indisputable that care should be taken to ensure that they do by being kept clean of potentially health harmful contaminants which inevitably accumulate in the ducting.

There is considerable evidence to show that uncleaned systems can assist the spread of HCAI (Healthcare Associated Infections) because temperature and humidity conditions typically found in ventilation systems provide excellent opportunities for bugs to thrive and be widely distributed. Dust on internal surfaces of ducting contains a high proportion of organic compounds including hair and skin flakes - nutrients for the growth of micro-organisms such as MRSA and C. difficile. In other words, ventilation system ducting can act both as a support for, and a disseminator of, potentially very harmful bacteria.



Internal duct surfaces of general ventilation system showing accumulation of dust and debris

Of course, improved filtration materials play an important role in reducing the levels of contamination in general extract and supply systems and, as a consequence, a reduction in the prevalence of airborne particulates in the circulated air. This applies not only to systems in Hospitals but to properties wherever there are air filtration systems. However, even where improved filtration methods and materials have been installed in existing systems, the ductwork has rarely been cleaned as part of the maintenance programme and therefore internal duct surfaces invariably remain contaminated with dust and debris.

On the evidence of what is occurring in hospitals and the action being taken to improve filtration and to clean ventilation systems to eliminate, or at least reduce, this conduit for the spread of hospital infections such as MRSA, one can reasonably ask why so few ventilation (air conditioning) systems are being cleaned in general workplaces? If ventilation systems can assist the spread of potentially fatal infections it is not unreasonable to suggest the obvious way to reduce the spread of more commonplace infections such as the common cold in general workplaces is to have the system inspected and where necessary, cleaned. Unfortunately the occasions when this is carried out are very much in the minority. Provision of clean and comfortable workplace conditions should be high on the priorities of all responsible employers.

One ventilation system which is often given less attention than its high fire risk potential warrants is the grease extract ventilation so often linked to catering facilities.

The Regulatory Reform (Fire Safety) Order 2005 – now generally referred to as the Fire Safety Order, makes very clear, legally enforceable demands on premises management to identify all possible causes of fire. In those buildings where there are catering or food production facilities the extract ventilation system takes grease laden air to atmosphere. As it cools, grease accumulates on the internal duct surfaces. These systems are fire hazardous and must be included in the Fire Risk Assessments and action taken to eliminate any potential fire hazard to the safety of building occupants i.e. to have ductwork cleaning carried out.

At a recent seminar a spokesman for the London Fire Brigade drew specific attention to the fire dangers of these systems. As he stated "*Uncleaned grease extract ventilation systems present probably the greatest potential fire risk in buildings with catering facilities*". He was referring to the typical grease extract system which takes grease laden air from the kitchen via the canopy to exhaust to atmosphere. Grease particles accumulate on the internal surfaces of the extract ducting requiring only a spark or flash to ignite.

There is therefore an indisputable need to have put in place a cleaning regime for grease extract systems which will ensure that potentially flammable grease deposits are fully removed and do not constitute a fire danger to building occupants.

The Fire Safety Order requires the appointment of a "responsible person" to ensure that comprehensive fire risk assessments are produced and all necessary measures taken to safeguard the lives of the building's occupants. Unfortunately it is my experience that even where a "responsible person" has been appointed – and it is often the Facilities or Buildings Manager who takes on this role – and the grease extract system has been included in the risk assessments, a measure of dangerous complacency is often allowed to take over.

Too often having commissioned the cleaning, little effort is made to ensure the system has been thoroughly cleaned and made safe. Instead there is often reliance on a statement, sometimes not even written, from the cleaning contractor that the system has been cleaned. All too frequently many systems have, at best, been only partially cleaned. Because to check often means some inconvenience, e.g. removing ceiling panels to reach ducting for inspection, the "responsible person" does not know how well it has been cleaned and whether or not it remains a fire risk. If no access panels have been installed in the extract ducting you can be sure the system has not been completely cleaned and remains a fire hazard.

It is not only the requirements of Fire Safety legislation which need to be fulfilled. Insurers are now being more specific in their warranties about the need to clean grease extract ventilation systems. The UK's leading Property Insurer now demands that these systems must be cleaned in their entirety from the kitchen to exhaust to atmosphere. Should a fire occur in uncleaned extract ducting not only might there be a breach of the Fire Safety Order but the building's owners could find any claim for compensation disputed in the Courts. It is the 'responsible person's responsibility to ensure he is getting what he has commissioned – the elimination of fire hazardous conditions.



Internal ducting surfaces of grease extract system showing uncleaned potentially flammable grease deposits

Grease extract ducting cannot be cleaned unless access to the ducting has been effected to allow thorough removal of grease deposits. Any assurance from a contractor that he will not need to install access panels as he will be using motorised or other mechanical devices to provide cleaning is not acceptable. These might be appropriate for cleaning air systems but grease deposits in ducting can only be fully eliminated by old fashioned elbow grease aided by cleaning chemicals, brushes, scrapers and cloths.

Finally, having checked that the system has been well cleaned, demand a work completion certificate which states clearly what has been cleaned and identifies any areas which cannot be physically accessed for cleaning. You can then be confident you have complied with the Legislation and Insurance requirements.

In order to provide the Facilities Manager with a reliable standard by which to assess the effectiveness of a ventilation cleaning programme, the Heating and Ventilating Contractors' Association have produced a "Guide to Good Practice" Internal Cleanliness of Ventilation Systems TR19 (copies can be obtained from the HVCA Tel: 020 7313 4900, Email: [contact@HVCA.org.uk](mailto:contact@HVCA.org.uk) ). This gives guidance for the cleaning and maintenance of new build, upgraded and existing ventilation systems. It is accepted as the industry standard to which ventilation systems should be cleaned. By ensuring that only contractors are commissioned who undertake cleaning in accordance with this standard can responsible managers be confident their ventilation systems will fully perform their essential function of providing safe and hygienic conditions in the workplace.

**For further information on ventilation system cleaning call  
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