

Independent Guide

What is important to know about indoor air quality: Microbiological contaminants?



Independent workplace compliance

What are microbiological contaminants?

Common indoor microbiological contaminants include bacteria, moulds, viruses and pollen. These contaminants can travel through the air and are often invisible to the naked eye. There are many sources of these pollutants:

- Bacteria carried by people, soil and plant debris
- Viruses transmitted by people
- Pollens originating from plants (either inside or outside the building)

Two main factors are necessary to support microbiological growth - nutrients and moisture. Suitable conditions can be found in many locations, such as humidifiers, kitchens, carpets and furniture. They can also grow in central air handling systems. These systems can then distribute the contaminants throughout the workplace.

What is their significance?

The majority of microbiological contaminants found in circulating air do not pose a hazard to health. However, some of the medical effects associated with them are:

- Allergic reactions, including allergic rhinitis and some types of asthma. Allergic reactions occur only after repeated exposure to an allergen. However, that reaction may occur immediately on re-exposure or after multiple exposures over time. As a result, people who have noticed only mild allergic reactions, or none at all, may suddenly find themselves very sensitive to particular allergens.
- Diseases such as humidifier fever can be traced to micro-organisms which grow in building wet humidifier systems. These micro-organisms cause a reaction which is similar to a severe case of "hay fever".
- Symptoms of exposure to microbiological contaminants include sneezing, watery eyes, coughing, shortness of breath, dizziness, lethargy, fever and digestive problems.

What is the legislation/guidance on this area?

Although there is no specific legislation regarding microbiological contaminants, the Control of Substances Hazardous to Health Regulations state *"every employer shall ensure that the exposure of his employees to substances hazardous to health is either prevented, or where this is not reasonably practical, adequately controlled"*. The Health and Safety at Work Act and Workplace (Health, Safety & Welfare) Regulations state that the employer must maintain a safe and healthy work environment and therefore a clean environment is required. There are "guidance" documents available containing technical input from the ventilation hygiene and cleaning industry. These include the CIBSE (Chartered Institution of Building Services Engineers) publication TM26:2017 *Hygienic maintenance of office ventilation ductwork*. However, the information can be both confusing and contradictory, which is unhelpful for facilities managers when trying to assess their specific needs in their own buildings.

How can you monitor microbiological contaminants?

As part of an indoor air quality assessment we can monitor the levels of micro-organisms in the supplied air. Representative samples of indoor air are taken and subsequent laboratory analysis will identify any bacteria or moulds which may pose a hazard to health.

It is important that the company carrying out an indoor air quality assessment is independent, i.e. that they have no links to any other product, service or company. This will ensure that the results are not misinterpreted to justify remedial services, such as ductwork cleaning and disinfection. Equally important is ensuring that the microbiological sampling and testing are UKAS (United Kingdom Accreditation Service) compliant. This will ensure that the results are reliable and traceable to national standards.

This guide is of a general nature; specific advice can be obtained from Assurity Consulting. Assurity Consulting is the UK's leading independent compliance consultancy specialising in workplace health, safety and environmental solutions. We have over 30 years' experience of helping customers of all sizes, from across all sectors, manage their compliance responsibilities, making sure that their organisation is compliant, their employees are safe, their processes are cost effective and their management team is in control.



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