

Independent Guide

How do you measure indoor air quality?



Independent workplace compliance

Introduction

Although there is no legal requirement to have a general air quality monitoring regime in place, it will provide you with the key evidence needed to demonstrate that you are complying with legislation and making sure that a healthy environment is provided to staff.

Indoor air quality assessments should analyse the supplied and circulating air in terms of the levels of dust, micro-organisms, and gases. Typical parameters could include microbiological air testing, direct particle counts, gravimetric analysis of dusts and dust analysis and levels of gases including for example, Carbon dioxide, carbon monoxide, ozone and volatile organic compounds.

How do you measure co2 levels?

The suitability of ventilation rates in a building can easily be assessed by measuring levels of carbon dioxide as part of an indoor air quality or workplace comfort audit. As with all workplace audits, it is important to ensure that the auditor is both competent and independent.

The auditor should not be connected to any other product, service or company, to ensure that the results of their audit are unbiased and will not be used as a means to sell another product or service. Carbon dioxide levels should be measured at selected locations as a means of qualifying indoor air quality and potential problem areas. Long term monitoring of carbon dioxide levels may also be performed in specific locations.

Some organisations are relying on new technologies to gather data on their indoor air quality. If this is you, are you confident that the data you're being provided with is accurate? For example, if we focus on carbon dioxide monitors, there's a lot to consider! Carbon dioxide monitors should be:

- Non-dispersive infrared (NDIR)
- Mains powered
- Be placed at breathing height
- Be placed away from windows, doors or ventilation openings where practicable
- Be placed at least 500mm from people where practicable.

How do you improve indoor air quality?

For workplaces the HSE states, "employers must make sure there is adequate in enclosed areas of their workplace. Ventilation is the process of bringing in fresh air from outside and removing indoor air, which may, be stale, be hot and humid because of work machinery and processes or contain pollutants and other impurities".

The Workplace Health, Safety and Welfare Regulations (1992), under Regulation 6 also requires employers to "ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air". You should consider the following points:

- Understand your workplace ventilation systems, how they operate and what levels of maintenance they have received. Are ventilation rates appropriate for the environments they are serving?
- Have ventilation systems or their operation been modified or changed because of, or in relation to, varying occupancy levels? Have these been assessed? Are supply and extract rates suitably balanced?
- For naturally ventilated buildings, do you consider local ambient air conditions and strategies for their management (i.e. local roadworks, building works etc.)?
- Are there any processes in place where you use local exhaust ventilation (LEV)? If so, have these been properly serviced and maintained?
- Do you assess your indoor air quality and comfort conditions?
- Have you any activities occurring in the premises which could adversely affect your indoor air quality? Do any of these require LEV?
- Have any of your net zero or other initiatives affected the operation/performance of your ventilation system? If so, have these been audited to check that the ventilation system is still providing the levels of control you need?



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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 35 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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