



CO2 Monitoring Risk Assessment and Guidance

Updated 24.11.21 | DMoss revision 1.1

Hazard/ Activity	Persons at Risk	Risk	Control measures in use	Residual risk rating H / M / L	Further Action Required	
					YES	NO
Poor Ventilation	Students Pupils Staff	Air that contains virus particles (i.e. carbon dioxide)	<ul style="list-style-type: none"> • Letting fresh air into indoor spaces can help remove air that contains virus particles and is important in preventing the spread of Covid-19 (open windows, doors etc.). • Set mechanical ventilation systems to full fresh air (where possible). • Mechanical ventilation which doesn't have a fresh air source can only remain in operation as long as there is a supply of outdoor air (i.e. leaving windows and doors open) • CO2 monitors in educational settings, will enable schools to monitor areas where they believe airflow may be weakest; and quickly identify where ventilation needs to be improved. Identifying poorly ventilated areas (hse.gov.uk) • Portable CO2 monitors will enable schools to move them around to test their full estate, starting with areas they suspect may be poorly ventilated. • Take representative readings from indoor spaces within their estate, assessing all appropriate areas. • As The monitors are rolled out the DfE will provide further guidance. 	LOW		✓

			<ul style="list-style-type: none"> Look for areas where people work and there is no <u>mechanical ventilation</u> or <u>natural ventilation</u> i.e. open windows, doors etc. 			
Increased levels of particles (i.e. carbon dioxide)	Students Pupils Staff	Air that contains virus particles (i.e. carbon dioxide)	Additional Measures: <ul style="list-style-type: none"> Relocate pupils to an alternative area Review activities within room, i.e. singing, excessive physical exercise. With a view to changing room or reducing pupil numbers. Shorter, but more frequent breaks School Hall Assemblies, reduce size of gatherings *The use of Air Cleaning and Filtration Units (most suitable air cleaning units - high-efficiency filters & ultraviolet-based devices) 	LOW	✓ Dynamic assessment	

Suitability of CO2 monitoring in different types of space

Characteristics of space	Examples	Suitability of CO2 monitor
Small spaces up to 50 square metres floor area. Occupied by a consistent number of people for more than an hour	Small offices and meeting rooms	Can be used, but results should be treated carefully as concentrations can be affected by the differences between individual breathing rates.
Small spaces up to 50 square metres. Occupancy varies over short periods	Changing rooms and small retail premises	Unlikely to give reliable measurements
Mid-sized spaces of 50-320 square metres. Occupied by a consistent number of people for more than an hour	Larger office and meeting rooms, classrooms, restaurants/bars, and some indoor sports (low aerobic activity)	Often well suited to monitoring as the higher number of occupants provides more reliable values
Mid-sized spaces of 50-320 square metres. Occupancy varies over short periods	Larger office and meeting rooms, classrooms, restaurants/bars, and some indoor sports (low aerobic activity)	Often well suited to monitoring as the higher numbers of occupants provides more reliable values
Mid-sized spaces of 50-320 square metres. Occupancy varies over short periods	Some retail spaces	Can be used, but results should be treated carefully as concentrations may be affected by variations in

		occupancy levels
Large spaces over 320 square metres. Occupied by a consistent number of people for a longer period of time	Indoor concert venues, large places of worship and airport concourses	Can be appropriate for monitoring in occupied areas, but might require multiple sensors to provide meaningful measurements
Large spaces over 320 square metres. Occupancy varies over short periods	Rail concourses and shopping malls	Unlikely to give reliable measurements

NB. In regard to rooms and their use it will come down to assessing how large the room is and how many people use the room and for how long. You could look at placing CO2 monitors in the larger offices and measure over a few days. With doors remaining open at all times. For smaller offices, where possible could you have a maximum amount only (2 persons at a time working in the office) and all doors remain open at all times.

Please note: *Carbon dioxide (CO2) monitors are not suitable for use in areas that rely on air cleaning units. This is because filtration units remove contaminants (such as coronavirus) from the air but do not remove CO2.

Recirculation units (including air conditioning) can mask poor ventilation as they only make an area feel more comfortable.

The HSE states: Providing adequate ventilation does not mean people have to work in an uncomfortably chilly or cold workplace. There are simple steps you can take to make sure your workplace is adequately ventilated without being too cold, windows and doors partially open can still provide acceptable ventilation while keeping the workplace comfortable. Opening higher-level windows will probably create fewer draughts. If the area is cold you could relax dress codes so people can wear extra layers and warmer clothing.