

These notes are based on information from HSE Catering Information Sheet 23 (rev 1) and agreed best practice.

When to measure CO₂ levels?

It is not necessary to carry out a full air quality test every time you work in a kitchen. The following is a summary of recommendations based on best practice (in accordance with clause 14 of BS6173 2009).

1. When working on gas equipment for the very first time in any kitchen.
2. When carrying out maintenance of gas equipment.
3. After installing any additional or replacement gas fired item.
4. In any kitchen where you suspect that the extraction/make up air system may not be working satisfactorily i.e. very hot working environment, high levels of condensation, catering staff complaining of working environment.

Other than in the above circumstances, it is not necessary to carry out a full air quality test when carrying out a repair to an appliance.

How to measure CO₂ levels

The above sheet (note 4) states

With all the appliances in operation and normal ventilation conditions

Measure concentrations of CO₂ as follows:

- (a) Measure the outdoor CO₂ levels.*
- (b) Above each individual appliance at approximately head height.*
- (c) At centre of room at approximately head height.*
- (d) Just inside the canopy of any installed mechanical extract system.*

Concentrations should not exceed 2800 ppm (including the outdoor level) at any of the locations listed above

Where concentrations exceed 2800 ppm consider the need to turn off appliances or isolate nonessential appliances and the possibility of evacuation. Immediately ventilate the affected area by opening windows and doors as necessary until CO₂ level is reduced below 2800 ppm so that the investigation can continue.

Occupational exposure limits (see EH40/2005)¹⁰ for CO₂ are 0.5% (5000 ppm) 8 hour time weighted average and a short term exposure limit of 1.5% (15000 ppm) 15min time weighted average.

It is considered that information relating to location (b) is somewhat misleading. The reading should not be taken directly above the appliance but at head height where the operator would be standing when using the appliance.

If you find a CO₂ level in excess of 2800 ppm, in addition to taking the actions to immediately reduce the concentration levels and make the installation safe where appropriate, you should apply the Gas Industry Unsafe Situations Procedure. You should also advise the operator to contact a qualified M&E engineer to carry out further tests on the extraction and make up air system.