

WHAT IS THE RIGHT METRIC FOR AIR RENEWAL?

Infographic by @nousaerons available at letsair.org



CO₂ LEVEL

Measuring the CO₂ level in a room is a simple way of determining the level of containment. The higher the CO₂ level, the greater the containment. The value that is usually recommended not to exceed is 800ppm. (Parts Per Million is the usual unit). Reliable, inexpensive detectors are now available, and anyone can use them to check that the air is properly renewed.



AIR CHANGE PER HOUR

To ensure good air renewal in a room, you can specify the number of times the air in the room is renewed each hour. This number is known as ACH (Air Change per Hour). A widely recommended value for most general-purpose premises is 6: the air is renewed 6 times an hour. The room's ventilation system enables this renewal to take place.



AIRFLOW PER PERSON

To take account of the actual use of a room, you can specify the volume of fresh air to be supplied for each person in the room. In this case, we specify a volume per hour and per person (m³/h/p or CFM per person or liters/s/person). The higher the value, the better the air renewal. For example 30 m³/h/p or 18 CFM/p can be a good value for a classroom.

WHAT IS THE RIGHT METRIC FOR AIR RENEWAL?

Infographic by @nousaerons available at letsair.org



CLASSROOM EXAMPLE

SURFACE = 60 m² / 646 ft²

CEILING HEIGHT = 2.5 m / 82 ft

NUMBER OF CHILDREN = 30

MAXIMUM CO₂ LEVEL = 800ppm

You can simply measure it with a CO₂ monitor and adapt the ventilation to the measurement.

AIR CHANGE PER HOUR = 6

This means that ventilation must be able to provide 900 m³/h or 530 CFM. There's no quick and easy way to check this directly..

AIRFLOW PER PERSON = 30 m³/h/p or 18 CFM/p

This means also that ventilation must be able to provide 900 m³/h or 530 CFM. There's no quick and easy way to check this directly.

WHAT IS THE RIGHT METRIC FOR AIR RENEWAL?

Infographic by @nousaerons available at letsair.org

There's a relationship between the CO₂ level measured in a room and the volume of fresh air supplied. The lower the CO₂ level, the greater the volume of fresh air supplied. The curve below illustrates this for the classroom example.

RELATIONSHIP BETWEEN CO₂ LEVELS AND AIRFLOWS FOR A 60 M² CLASSROOM AND 30 STUDENTS

