

Heathy indoor air quality: adequate ventilation remains crucial

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The corona pandemic has placed healthy air quality even higher on the agenda for all buildings where several people gather – like offices, schools, and meeting and event rooms. Are CO2 meters and air purifiers the solution for acute problems? And what about the long term?



With the relaxation of the corona measures, buildings are becoming once again more crowded. This increases the risk of the transmission of the coronavirus and by extension other viruses such as flu. Many building managers and users are therefore asking whether they are taking sufficient measures to guarantee good air quality.

This uncertainty has given certain entrepreneurs the idea of marketing so-called air purifiers. These promise – through various technologies – to rid the polluted air of viruses and bacteria. However, there is no scientific proof of the effectiveness of these devices, and they are certainly not a panacea. And no one stands to gain from a false sense of security.

The CO2 meter is the starting point for all measures. Whenever it shows orange or red, action needs to be taken. The Ministerial Decree of Minister Annelies Verlinden – applicable since 1 October 2021 – mentions the mandatory presence of an air quality meter (clearly visible to the public) with real-time measurement in:

- restaurants and bars in the catering sector (including dance bars)
- establishments in the sports sector (including fitness centres)
- establishments in the events sector (including discotheques and dance halls).

The air quality standard for the various sectors remains 900 ppm CO2. Where this level is exceeded, the operator is required to submit an action plan with compensatory measures on the basis of a risk analysis in order to return back below this norm. If the level of 1,200 ppm CO2 is exceeded, the operator must also provide a certified air disinfection and/or infiltration system that ensures air quality equivalent to the 900 ppm standard.

The Implementation Plan in the Recommendations of the Ventilation Task Force of 12 July 2021 focused on short- and medium-term measures to guarantee adequate ventilation in the context of the COVID-19 pandemic. The Taskforce recommends opening windows and/or doors, where possible, to guarantee greater air circulation, preferably permanently (in tilt position or ajar). However, with winter approaching, this is not the best solution for various reasons: it causes additional heat losses and is also unfavourable acoustically (confidentiality of conversations, disturbance to other persons working in the vicinity).

Asking those present to temporarily leave the room can also offer temporary relief, just like reducing the permitted capacity of the room. This last option is more drastic, for example prescribing that a conference room without outside windows and doors may only hold 4 people instead of 10.

The above measures are therefore only a short-term ventilation strategy for the control of viruses. Preference goes to solutions that are also effective long term. In addition, the Codex on well-being at work has also to be taken into account. This stipulates that every employer must have a risk analysis of the indoor air quality. The Codex also specifies maximum CO2 concentrations and/or ventilation flow rates. In general, as in the above Ministerial Decree, the CO2 concentration may not exceed 900 ppm (or 500 ppm above the outdoor concentration), or a maximum increase from the outdoor concentration of 500 ppm. For light activities, this corresponds to a ventilation flow rate of 40 m3 per person per hour.

We refer here to the recommendations of the Taskforce Ventilation in the context of COVID-19 version 2.0. These describe a pragmatic approach for the implementation of sufficient ventilation and air purification to minimize the spread indoors of the coronavirus and by extension other viruses. We are happy to help you translate these recommendations for and apply them in your building.

A solid and efficient mechanical ventilation system is always the best solution for guaranteeing good air quality. We start from a risk analysis in which we check whether the building (still) meets current requirements and standards. Installing a fixed CO2 monitoring system can be a first step. When structural deficiencies are identified, we can design a ventilation system that meets all comfort requirements, in terms of temperature, relative humidity and air velocities, by making adjustments to existing installations or from scratch.

Do you also have doubts as to whether your building is sufficiently ventilated and whether it complies with the guidelines of the Ventilation Taskforce and the

Codex? No idea how to go about this in practice? Our expert Nico Vandewiele is happy to explain more via 050 40 45 30 or nico.vandewiele@ingenium.be.