

Ventilation in Dental Practices

Legislation and Standards

The Workplace (Health, Safety and Welfare) Regulations (Northern Ireland) 1993 require that every enclosed workplace is ventilated by a sufficient quantity of fresh air with adequate ventilation of 8-10 litres per second per person.

The Health Technical Memorandum 03-01: Specialised ventilation for healthcare premises outlines the necessary standards for ventilation systems in health care premises. This HTM was updated in June 2021. It states that a Mechanical Supply and Extract Ventilation System with a minimum of 10 ACH is required in newly built dental treatment rooms. A clean airflow path with supply at a high level and extraction at a low level near the treatment chair resulting in a neutral pressure relative to the corridor is advised. Extraction or supply systems may be appropriate in existing treatment rooms.

Types of Ventilation

1. Natural Ventilation

Methods of ventilation which rely on wind power or movement of warm air including windows, vents and grilles. It is important to ensure that windows, vents and grilles are open. Natural ventilation is difficult to quantify but it is understood that natural ventilation is reliant on the relevant windows, vents and grills being open.

2. Mechanical Extract Ventilation

This method of ventilation pulls air from the room to an outside area resulting in the room having a negative pressure relative to the corridor. Extract systems may include window mounted fans, wall mounted fans, ducted fans with the fan in the room, and ducted fans with the fan remote from the room.

3. Mechanical Supply Ventilation

This method of ventilation pushes air into the room from an outside area resulting in the room having a positive pressure relative to the corridor. Supply systems may include window mounted fans, wall mounted fans, and ducted fans with the fan remote from the room.

4. Mechanical Supply & Extract Ventilation

This method of ventilation pushes air into the room from an outside area and the air is then pulled from the room to an outside area resulting in the room having a neutral, negative or positive pressure relative to the corridor. Supply and extract

systems may include window mounted fans, wall mounted fans, and ducted fans with the fans remote from the room.

It is understood that any mechanical ventilation system is operational, functional and maintained/serviced as required.

Ventilation and Air Conditioning

Ventilation is defined as the supply of fresh air to a designated space.

Air conditioning means “treating” or “conditioning” the air (normally cooling it). Stand-alone, single room air conditioners can be useful but do not supply ventilation.

Multi-room heating, ventilation and air conditioning systems should be configured to ensure air from treatment rooms are not mixed.

Air scrubbers and air purifiers

These are types of portable filtration devices acting only on the air within a room.

They re-circulate existing air and as such are not deemed to be a method of ventilation but may be used in dental surgeries as a supplement to natural or mechanical ventilation. An air scrubber can remove contaminants from air and some surfaces and an air purifier (air cleaner) removes airborne contaminants only.

Measuring Ventilation Rates and Fallow Times

Advice in relation to calculating ventilation rates / ACH is outlined in sections 5.4.5 and 7.0 of the Seasonal Respiratory Infections & Covid-19 GDS: Operational Guidance and should be read in conjunction with manufacturer’s technical data.

Advice in relation to calculating the necessary fallow time is outlined in section 5.4.5.

Further Information:

H&S advice: <https://www.hseni.gov.uk/articles/ventilation-and-covid-19>
<https://www.hse.gov.uk/coronavirus/equipment-and-machinery/air-conditioning-and-ventilation.htm>

HTM 03-01: <https://www.england.nhs.uk/publication/specialised-ventilation-for-healthcare-buildings/>

SDCEP Ventilation Information for Dentistry: [SDCEP-Ventilation-Information-for-Dentistry.pdf](#)