



TÜS LA

An Dáimhrialtaocht um  
Léimní agus an Teachtlach



CHILDRENS  
SERVICES  
REGULATION



Early Years Inspectorate

Technical Guidance Document: Ventilation

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TÜS LA

# Contents

1. Introduction .....	3
2. Scope and purpose.....	3
3. What is meant by ventilation and what is its purpose? .....	3
4. Ventilation as a means of mitigating the spread of viruses .....	4
5. Ventilation in an early years setting .....	4
6. How to identify poorly ventilated areas .....	5
7. When ventilation is considered inadequate at inspection .....	5
Appendix 1: Legislation .....	7
Appendix 2: Key terms .....	8
Appendix 3: Guidance for adequate ventilation in an early years setting.....	10
Appendix 4: Useful links .....	13
HSE guidance on non-healthcare buildings during COVID-19 .....	13
The Department of Education – Practical Steps for the Deployment of Good Ventilation Practices in School Version 3 May 2021 .....	13
Department of Housing, Local Government and Heritage Buildings Regulations 2019 <i>Technical Guidance Document F – Ventilation</i> .....	13

# 1. Introduction

Tusla's Early Years Inspectorate is responsible for inspecting early years services, playgroups, day nurseries, crèches, day care, and services catering for children aged 0–6 years in Ireland. Collectively, these organisations are referred to as 'early years services' and are described in legislation as 'preschool services'.

The Early Years Inspectorate is committed to the safeguarding and well-being of all children who attend early years services. This is achieved through the registration, inspection and enforcement processes prescribed by law and implemented by the Tusla Early Years Inspectorate.

# 2. Scope and purpose

This technical guidance document has been developed in order to offer guidance for the Inspectorate in assessing and verifying compliance with requirements to provide adequate ventilation in early years settings during the COVID-19 pandemic and in normal times. The purpose of this document is to facilitate a consistent approach to ensuring compliance with the ventilation requirements of the Early Years Inspectorate.

# 3. What is meant by ventilation and what is its purpose?

Ventilation is the supply of fresh outside air into indoor spaces, and the removal of stale indoor air through a range of natural and/or mechanical devices. Letting fresh air into indoor spaces can help remove air that contains virus particles and can reduce the risk of spreading coronavirus (COVID-19).

Ventilation should be capable of providing satisfactory indoor air quality for human respiration in occupied areas of a building. The role of ventilation is to:

- Rapidly dilute pollutants, including odours and water vapour.
- Remove excess water vapour from areas such as kitchens, and utility rooms, with the aim of reducing the likelihood of creating conditions that support the growth of mould, harmful bacteria, pathogens, and allergens.
- Remove harmful pollutants.
- Provide an adequate supply of fresh air for people using the building.
- Disperse residual pollutants and water vapour.

The means of ventilation may also affect occupant comfort, e.g. through undesirable draughts or excessive air movements; the aim is to provide adequate ventilation while avoiding occupant discomfort. Care must also be taken not to create an additional risk of children leaving the service unaccompanied when entrances, exits, or low windows are opened in order to provide ventilation.

## 4. Ventilation as a means of mitigating the spread of viruses

When someone with a virus breathes, speaks, coughs or sneezes, they release particles (droplets and aerosols) containing the virus. While larger droplets fall quickly to the ground, smaller droplets and aerosols containing the virus can remain suspended in the air. If someone breathes in virus particles that are suspended in the air, they can become infected. This is known as airborne transmission.

In early years settings, good ventilation is considered an important factor in mitigating the spread of viruses such as COVID-19 (coronavirus); other factors include maintaining social distancing, wearing face masks, following good hand hygiene and respiratory etiquette, following enhanced cleaning procedures, maximising use of outdoor spaces and limiting children's contact with each other by managing pod sizes. However, maintaining the integrity of the pod rather than focusing on pod size has generally been the best approach to managing pods.

In poorly ventilated rooms, the amount of any virus that is in the air can build up, increasing the risk of spreading COVID-19. The more people occupying an area that is poorly ventilated, and the longer they remain in it, the greater the risk of spreading COVID-19. The virus can also remain in the room after the infected person has left.

Bringing fresh air into a room and removing older stale air that contains virus particles reduces the chances of spreading COVID-19. The more fresh air that is brought into the room, the quicker any airborne virus will be removed. Opening windows and doors is the simplest way of improving ventilation for most people.

## 5. Ventilation in an early years setting

Care rooms, sleep rooms, offices, sanitary accommodation, utility rooms, and other similar rooms should be provided with a ventilation opening capable of supplying fresh air – this is called *general ventilation* (see Appendix 3.1.1).

Ventilation openings commonly observed are:

- A ventilation grill on the external wall, or.
- A ventilation grill (trickle vent) in the window.

Rooms must also have a means of allowing the movement/removal of a substantial volume of air in a short time period in order to rapidly dilute pollutants and/or water vapour – this is called *purge ventilation* (see Appendix 3.1.2).

Purge ventilation can be achieved by:

- opening a window or external door, and/or
- mechanical means (e.g. a fan).

*Mechanical ventilation* may be observed in an early years room with no openable window (i.e. an internal room). Mechanical ventilation can be provided at sanitary accommodation and



nappy changing areas by means of extract fans that discharge foul air directly to the outside and prevent the spread of pollutants to the rest of the building (see Appendix 3.1.3).

Alternatively, some early years services may be ventilated and heated by a Mechanical Ventilation with Heat Recovery (MVHR) system. This type of system provides a fresh air supply into the premises, extracts contaminated/foul air from the premises and provides an exchange of heat between the two types of air.

## 6. How to identify poorly ventilated areas

When inspecting early years services, there are some simple ways to identify if a room is poorly ventilated, in order to assess compliance with Regulation 29(c) of the Child Care Act 1991 (Early Years Services) Regulations 2016:

1. Is the room lacking natural ventilation (open windows, doors or air vents) or mechanical ventilation?
2. How is the air quality in the room? Is it fresh and free from unpleasant odours or does the room feel stuffy or smell bad?
3. Is there evidence of mould or mildew on surfaces such as ceilings or walls?
4. Is there evidence of significant condensation on windows and walls?
5. Does mechanical ventilation provide outdoor air to the room rather than recirculated air?
6. While carbon dioxide (CO<sub>2</sub>) monitors are not mandatory in early years services, where they are present, their readings may indicate higher than ideal CO<sub>2</sub> levels.

Condensation is generally noticeable when it forms on non-absorbent surfaces (i.e. windows or tiles) but it can form on any surface. Condensation may not be noticed until mould growth is visible.

The following are symptoms of condensation.

- Steamed-up windows and puddles of water on windowsills
- Walls that are damp to touch
- Peeling wallpaper
- Black spots of mould on walls and ceilings, and
- A musty smell.

## 7. When ventilation is considered inadequate at inspection

As Regulation 29(c), Child Care Act 1991 (Early Years Services) Regulations 2016, requires that early years premises are “kept adequately ventilated”, the Early Years Inspector will assess the adequacy of the ventilation based on the guidance in Section 6 of this guidance document.

Where ventilation is considered inadequate, the registered provider is advised of this and the non-compliance is recorded in the inspection report. The registered provider must ensure that

a system is installed that will adequately ventilate the room(s) and must also provide written evidence from a competent person, such as a gas plumber or electrician that the room(s) are now adequately ventilated.

The following examples illustrate the actions where ventilation is found to be inadequate at inspection:

**Example 1:** Where an early years service has an internal room with no means of ventilation (either natural or mechanical), this is deemed a non-compliance under Regulation 29(c). As a corrective action, the registered provider must ensure that adequate ventilation is installed in the room and provide evidence from a competent person that the ventilation system installed will ensure an appropriate exchange of air into the room.

**Example 2:** Where a care room or sleep room is found to be ventilated by means of a door or window to the external air, the Early Years Inspector must assess the air quality of the room by using the guidance under Section 6 of this guidance document. It is understood that this is a subjective, but recognised, means of assessment.

**Example 3:** Air purifiers are not considered an alternative means of ventilating a room. Air purifiers are designed to 'clean' air but they do not replace CO<sub>2</sub> with oxygenated air.

## Appendix 1: Legislation

### **Child and Family Agency Act 2013 (SI 17/1991),**

Article 58G states: "It shall be the duty of every person providing an early years service to take all reasonable measures to safeguard the health, safety and welfare of children attending the service."

### **Child Care Act 1991 (Early Years Services) Regulations 2016 (SI 221/2016),**

Part VII, Regulation 29 (c) prescribes the responsibilities for registered providers in respect of ventilation. Regulation 29 states: "A registered provider shall ensure that the premises of the service are –(c) kept adequately lit, heated and ventilated."

### **Building Regulations 1997 SI No. 497/1997 as amended by Building Regulations (Part F Amendment) Regulations 2019 (SI No. 263 of 2019)**

These regulations apply to the design and construction of a new building (including a dwelling) and to extensions and material alterations to an existing building. They came into effect on 1 July 1998 and apply where the works or material change of use takes place after this date. Article 7 of these Regulations allows the Minister for Environment to publish technical guidance documents for the purpose of providing guidance with respect to compliance. *Technical Guidance Document F – Ventilation* was published by the Department of Housing, Local Government and Heritage and updated in 2019.

### **Building Regulations 1997 SI No. 497/1997 as amended state:**

"Part F Ventilation – Means of Ventilation

Adequate and effective means of ventilation shall be provided for people in buildings.

This shall be achieved by:

- a) Limiting the moisture content of the air within the building so that it does not contribute to condensation and mould growth, and
- b) Limiting the concentration of harmful pollutants in the air within the building."

***Technical Guidance Document F – Ventilation*** relates to ventilation requirements in non-complex buildings of normal design and construction. It deals with ventilation methods in dwellings and in buildings other than dwellings.

## Appendix 2: Key terms

### *General ventilation*

This method of ventilation provides fresh air to the building and removes, dilutes, and disperses water vapour and other pollutants to generally acceptable levels. General ventilation provides nominal continuous air exchange to rooms and spaces at a relatively low continuous rate.

### *Background ventilator*

This provides general ventilation in the form of a small, secure ventilation opening, typically located in a wall or window, and usually incorporates a controllable ventilation grill, which can be fully closed.

### *Purge ventilation*

This manually controlled intermittent ventilation of spaces at a relatively high rate allows the movement/removal of a substantial volume of air in a short time period in order to rapidly dilute pollutants and/or water vapour. Purge ventilation may be provided by natural means (e.g. an openable window or door) or by mechanical means (e.g. a fan). Some part of the ventilation opening shall be at least 1.7 m above floor level.

### *Extract ventilation*

This type of ventilation removes air from a room or space directly to outside and prevents the spread of pollutants to the rest of the building. Extract ventilation may be provided by natural means (e.g. passive stack ventilation<sup>1</sup>) or mechanical means (e.g. an extract fan).

A mechanical ventilation system that runs continuously whenever general ventilation is required, e.g. a mechanical extract ventilation system or MVHR. The air flow rate may be adjusted manually or by automatic control during operation.

### *Ventilation opening*

Any means of permanent or controllable ventilation that opens directly to the external air.

### *Occupiable room*

A room in a building other than a dwelling that is occupied as an office, workroom, classroom, or similar room but that does not include sanitary accommodation, such as utility rooms, circulation areas, and storage areas. In early years services, this will include care rooms and sleep rooms.

### *Air infiltration*

This means the exchange of air between outside and inside the building other than through openings provided by design (for ventilation, access, or other purposes). Air infiltration is caused by pressure differences such as the effects of wind and occurs through cracks and other unintentional openings in the building fabric.

### *Competent person*

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<sup>1</sup> **Passive stack ventilation** works on the principle that warm air rises and that wind blowing across the face of the roof or walls causes negative pressure, which sucks out the warm air. Therefore, one could open a skylight window or a window at the top of the building (because warm air rises) in order to provide ventilation. As this warm air gets sucked out at the top floor, cool air is sucked in to replace it, through trickle vents in the windows.



The definition provided by the Safety, Health and Welfare at Work Act 2005 states that “a person is deemed to be a competent person where ... the person possesses sufficient training, experience and knowledge appropriate to the nature of the work to be undertaken”.

## Appendix 3: Guidance for adequate ventilation in an early years setting

### 1.1 General ventilation

A general ventilation rate of 10 l/second per occupant throughout the building is appropriate where there are no significant pollutant levels.

The minimum equivalent area ( $\text{mm}^2$ ) of the ventilation opening or background ventilator is calculated as:

- Floor area up to  $10 \text{ m}^2$  –  $7,000 \text{ mm}^2$  (or  $100 \text{ mm} \times 70 \text{ mm}$ )
- Floor area over  $10 \text{ m}^2$  –  $700 \text{ mm}^2/\text{m}^2$  floor area.

The wall ventilation grill should connect to the outside of the building by means of ducting and a corresponding wall grill on the outside wall

Ventilation grills should be clean and free from dust, paint, and building debris.

Where possible, ventilation grills should be at least 1.75 m above floor level in order to avoid discomfort from draughts.

Ventilation grills should not be located near a source of pollutants, e.g. heating system flues where exhaust fumes can be passed back into the building.

### Ventilation grill on wall

Example 1



Example 2



Ventilation grill on window (trickle vent)



### **1.2 Purge ventilation**

Purge ventilation allows for the movement of a substantial volume of fresh air in a short period of time and should be sufficient to reduce pollutants to an acceptable level before a space is occupied. The purged air should be taken directly to the outside and should not be recirculated in any other part of the building.

The purge ventilation requirement in all rooms is by means of

- an opening window or external door, and
- some part of the ventilation opening that must be at least 1.75 m above floor level.

For a window that opens 30° or more, the opening section of the window must be 1/20th of the floor area of the room served.

For a window that opens between 15–30°, the opening section of the window must be 1/10th of the floor area of the room served.

If more than one window is provided in a room, the total area of all openable sections of windows may be used to achieve that required proportion of the floor area.

### **1.3 Extract ventilation**

For an occupiable room with no openable window (i.e. an internal room), extract ventilation by means of extract fans should be provided in order to achieve a general ventilation rate of 10 l/second per occupant. Readily accessible over-ride controls should be provided for the occupants. Ventilation grills should be clean and free from dust and mould.

For sanitary accommodation and utility rooms, where ventilation is by means of an extract fan, the following is required:

- Minimum extract rate is 6 l/second, and
- Have a 15 minute overrun.

Where extract ventilation is provided, it must be provided to the outside.

Extract fans may be controlled either manually or automatically.

Note: Sufficient information about the ventilation system and its maintenance should be available in order to ensure that an effective and efficient ventilation system is being operated and maintained.

### **1.4 MVHR**

MVHR systems are based on air supply, air extraction and a heat exchange system. Habitable rooms are provided with fresh air while kitchens and sanitary accommodation are extracted on a continual basis. Before the extracted air is exhausted from the building, the heat in the air is transferred by means of a heat exchanger into the fresh air that is introduced into the building.

The pre-warmed fresh air is introduced into all areas on a continual basis. Thereby the need to completely heat the fresh air as it enters the building is eliminated. No extracted air is reintroduced to the building or recycled, thus extracted germs and pathogens will not spread through the MVHR.

Note: Sufficient information about the ventilation system and its maintenance should be available in order to demonstrate that an effective and efficient ventilation system is being operated and maintained.

**CO<sub>2</sub> monitors**

A CO<sub>2</sub> monitor is a device used to measure the concentration of CO<sub>2</sub> in a room and can be used as a general indicator that rooms may not be adequately ventilated; it can also enable occupants to become familiar with the impact of activities, outdoor weather and window openings on ventilation levels in a room.

## **Appendix 4: Useful links**

### **HSE guidance on non-healthcare buildings during COVID-19**

[Guidance on non HCbuilding ventilation during COVID-19.pdf \(hpsc.ie\)](#)

### **The Department of Education – Practical Steps for the Deployment of Good Ventilation Practices in School Version 3 May 2021**

<https://www.gov.ie/en/publication/ad236-guidance-on-ventilation-in-schools/>

### **Department of Housing, Local Government and Heritage Buildings Regulations 2019 *Technical Guidance Document F – Ventilation***

<https://www.gov.ie/en/publication/62f06-technical-guidance-document-f-ventilation/>