

# A Homeowner's Guide To Ventilation

## HOW YOU CAN BENEFIT FROM INVESTING IN GOOD VENTILATION:

- It provides a fresh air supply, reducing the concentration of harmful pollutants in your home.
- It reduces the risk of carbon monoxide production.
- It reduces radon accumulation.
- It minimises the risk of condensation.
- It provides an air supply to fuel burning appliances; which is required to ensure your fuel burning appliance to work efficiently.

### Why Ventilate?

During the cold months of the year, the air inside your home is warm and carries more water vapour than the colder air outside.

Cooking, laundry, showers, humidifiers and other activities using water contribute to this condition. There is a strong natural force, termed "vapour pressure" that causes water vapour to migrate from high-humidity air or materials to low-humidity air. This migration of water vapour passes through ceilings, insulation and wood and even successfully circumvents a vapour barrier. It moves into the attic space where it can readily condense into liquid water on the cooler structural members-rafters, trusses, and especially the cold roof sheathing.

To address this issue, there is a requirement with SEAI to ensure that ventilation is in accordance with chapter 10 of NSAI's S.R. 54 – Code of Practice for the energy efficient retrofit of dwellings, which can be accessed through the following link: <http://www.nsaie.ie/S-R-54-2014-Code-of-Practice.aspx>

## TYPES OF VENTILATION

### 1. Background Ventilation

A secure ventilation opening generally located in a wall or window for the purpose of provision of general ventilation, ordinarily incorporating a controllable ventilation grill which can be fully closed.

### 2. Permanent Ventilation

A ventilator permanently fixed in the open position and not provided with a means of closure which eliminates airflow through the device, normally used for rooms with fuel burning devices that need plenty of air.

### 3. Extract Ventilation

This type of ventilation is used in wet rooms and it allows for the rapid removal of water vapour and other pollutants directly to the outside.

### 4. Purge Ventilation

Large adjustable ventilation opening or openings (such as a window) which will allow the movement of a substantial volume of air in a short time period from occasional activities, for example; painting and decorating.



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## BACKGROUND VENTILATION OPTIONS

There are two main options for the provision of background ventilation; natural and mechanical. Various energy saving controls can also be used with both.

### Natural Ventilation

Background vents can be closable and their required size will depend on the room that they serve. A typical closable vent cover; known as a 'hit and miss' cover is pictured in figure 1. This cover is placed on the internal side of the vent.



Fig.1 Hit & Miss Vent Cover

### Mechanical Ventilation

There are various methods of mechanical ventilation systems including whole house heat recovery systems, single room heat recovery systems and positive input ventilation (PIV) systems. These systems can be more energy efficient than natural ventilation because they provide a greater amount of control and limit the heat loss. Traditionally these mechanical ventilation systems are not as commonly used as natural ventilation and are normally more expensive to install.

## PERMANENT VENTILATION OPTIONS

Permanent ventilation is required to supply air to an open flued (non-room sealed) combustion appliance such as a stove, gas fire, cooker (where applicable) and open fire etc.

Open flued appliance means that the appliance is drawing air from the room in which it's located. For this reason the room requires a vent for safe use of the appliance.

Where an appliance is room sealed, it means that it has its own dedicated air supply. This is normally an air duct from outside, connected to the appliance. Room sealed appliances do not require a permanent ventilation.



Fig.2 External Galvanised Vent Cover



Fig.3 110mm Pipe



Fig.4 Internal Vent Cover

**Proprietary Ventilation Systems** are designed as the full package of the above three elements; i.e. an external vent cover, a drainage pipe and an internal push on vent. These systems are tested and certified; therefore they deliver a guaranteed volume of air, whereas if you were to put the three above together manually, you may not get the best quality of ventilation.

## EXTRACT VENTILATION OPTIONS

Extract ventilation allows for the rapid removal of water vapour and other pollutants to the outside. All wet rooms should be fitted with a mechanical extract fan. For wet rooms where there is no background ventilator or open-able window, the mechanical extract ventilation should include an automatic 15 minute overrun (switching off after 15 minutes). A typical bathroom extractor fan can be seen in figure 5 below, while a typical kitchen extractor fan can be seen in figure 6.



Fig.5 Wet Room Extractor Fan



Fig.6 Kitchen Extractor Hood