Ventilation

Background Ventilation

It is important that the dwelling can constantly breathe - good indoor air quality is important for health and also helps protect the fabric of the building from the harmful effects of condensation and mould etc. Background ventilation helps to achieve this.

The most common form of background ventilation is trickle ventilation.

Requirements for background ventilation;

In most cases replacement window installations will require some level of background ventilation to be provided. There is a difference in requirements for dwellings that already have background ventilation in the existing windows and those that do not.

It is important to note the background ventilation requirement is per room and not per window, not every window will require the addition of trickle vents.

Existing windows without trickle vents

Where the outgoing window does not already background ventilation, the replacement window must provide background ventilation equivalent to the following:

- Habitable rooms and kitchens – 8000 mm^2 equivalent area
- Bathroom (with or without a toilet) – 4000mm^2 equivalent area
- Hallways and Landings do not require background ventilation
- Where the dwelling has continuous mechanical extract ventilation*, you must install background ventilation with a minimum equivalent area of 4000mm^2 to habitable rooms and kitchens only. There is no requirement for background ventilation in wet rooms.

** Continuous mechanical extract ventilation is a continuously running fan that extracts the indoor air to outside. An intermittent extraction fan (such as one that turns on when with the light) is not continuous mechanical extract ventilation.*

If it is not technically feasible to achieve the minimum equivalent areas set out above then the background ventilators must be sized as close to the minimum value as is possible. A definition of technically feasible is detailed in the guidance notes below.

Note: An open fire place chimney is not considered to contribute to background ventilation.

Existing windows with trickle vents already installed

Where the outgoing window provided background ventilation, the replacement window must provide background ventilation of at least the same equivalent area. Where the existing ventilation rate is unknown use the guidance above.

Further Guidance

When specifying replacement windows, the current level of ventilation in each room should be assessed. If you consider that it is inadequate it is wise to advise the customer of the options available. Ensure that whichever method is chosen it meets the necessary level of compliance.

Where the existing purge ventilation area is in excess of the requirements, although it is acceptable to reduce this to the minimum level requirement in the Approved Document, consideration should be given to retaining the existing level.

Typically, background ventilation should be positioned at least 1.7 metres above finished floor level to avoid discomfort due to draughts.

Two stage locking mechanisms (night vents) are not an acceptable means of background ventilation. The size of the routed slot must conform to the manufacturer's guidelines.

Ventilation

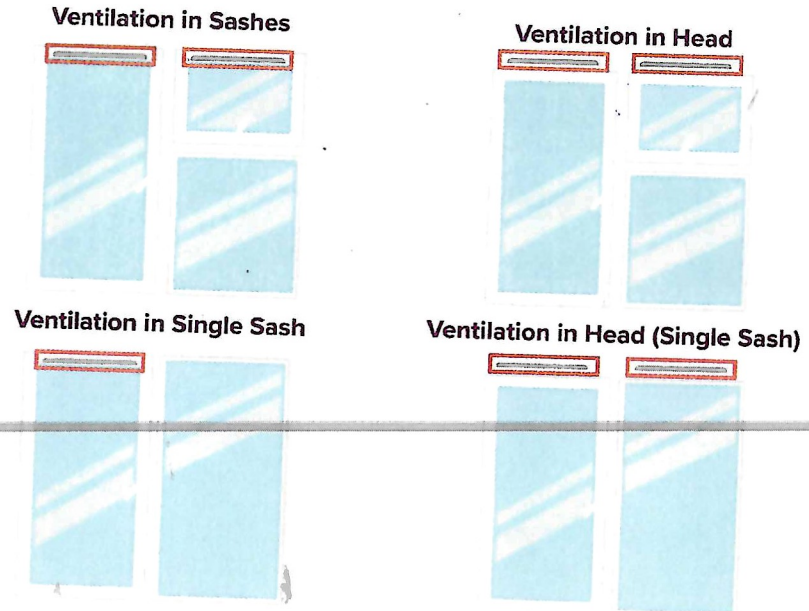
Technically Feasible

There are many ways to introduce background ventilation into windows, through sash, through head, via head packers or head boxes or over glass ventilators. It is understood that different solutions are used by different systems and fabricators based on their capability, machinery and processes. There is no prescribed way to install background ventilators into windows.

While every effort should be made to install the required amount of background ventilation, if the supplied window can only be ventilated via sash mounted vents then the maximum ventilation achievable using this method would be acceptable even if this is below the required equivalent area. Similarly, if the supplied window can only be ventilated via head mounted vents then the maximum ventilation achievable using this method would be acceptable even if this is below the required equivalent area.

It should be noted that if multiple sashes are present in a frame then all should be utilised to meet the required level of ventilation. If through head ventilation is used then it would be expected that the area be used to maximise the background ventilation potential.

Figure 4.
Examples of technically feasible trickle vent locations



Potential Exemptions

Any exemptions should be established at point of survey prior to installation. In the presence of doubt FENSA will require evidence that exemptions have been considered at the survey stage.

Busy Urban Road – When the property is close to a busy urban road ventilators should not be positioned directly facing the road however vents should be still be installed on the less polluted side of the building. There should be no permanent obstruction between the façade and the road (trees/ hedgerows would not be deemed as permanent) and the façade should be within 50m of the road and satisfy the criteria below.

There is no official definition for "Busy Urban Roads" however as a starting point in FENSA's opinion a busy urban road would include all of the below:

- Classified as an "A" road
- In an urban setting
- More than two lanes in any direction
- Carries sustained heavy traffic.

Mechanical Ventilation with Heat Recovery (MVHR) Systems

A MVHR system is a mechanically driven ventilation system that both continuously supplies outside air to the inside of the dwelling and continuously extracts indoor air and discharges it to the outside. When a property has a MVHR system installed (with or without the heat recovery element) then background ventilation should not be installed.

A Positive Input Ventilation System (PIV) is not a form of continuous mechanical extract ventilation or mechanical ventilation with heat recovery and as such is not a suitable alternative to background ventilation.

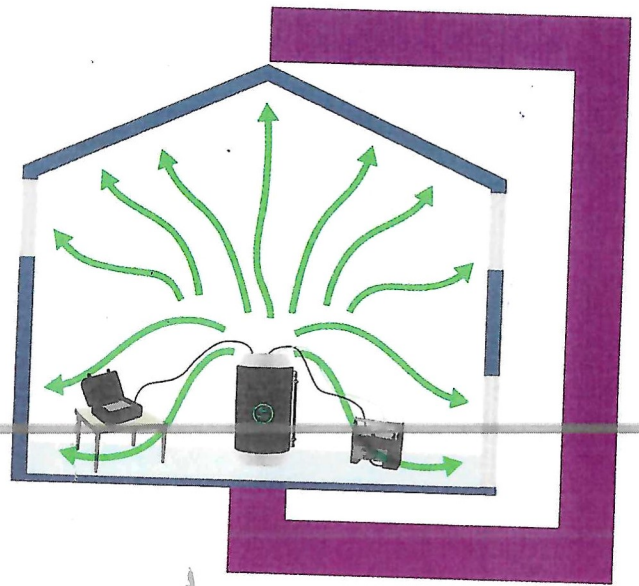
Ventilation

Air Pressure Testing

Where it can be proven that the level of air infiltration has not been reduced by the replacement of the windows/doors without background ventilation then additional background ventilation is not required. Proof must be provided by way of air pressure testing before and after the installation is completed by an accredited provider.

Below are some examples of how background ventilators could be installed to maximise ventilation. These examples assume several factors and are not intended for proof of compliance just as guidance of what the assessor could deem acceptable.
Assumptions are:

- The window is in a habitable room
- The room has one window
- There is no Mechanical Ventilation with Heat Recovery (MVHR) system in the property
- The bathroom does not have a continuous mechanical extract ventilation system
- The room requires 8000mm2 Equivalent Area of background ventilation
- Vents installed are the maximum size capable of being installed in the given area (for example if a 4000mm2 vent fits it should be used, a smaller vent is not acceptable)



Combustion Appliances

The replacement window should not make the ventilation requirements any worse for any combustion appliance which is using permanently open vents installed through the window. If a replacement window installer is not sure if a window vent is being used to ventilate a gas appliance, a "Gas Safe" registered gas fitter should be consulted to provide advice.

Particular care should be taken when installing replacement windows in rooms with a gas cooker, provision for a gas cooker or other flueless appliances such as water or space heaters.
Combustion ventilation

Some fuel burning appliances (back boilers, free standing boilers etc) take oxygen from inside the property for the combustion process. Often where these appliances are installed a permanently open vent is also present, sometimes in the window. These are usually circular, go directly through the glass, have a storm shield over the front but cannot be closed.

If a window is removed that has a permanently open combustion vent installed this should be replaced with a vent of equal or greater capacity unless the appliance that required the ventilation has been removed. If in doubt consult a "Gas Safe" registered gas fitter.

If there is any doubt regarding the amount and provision of permanently open ventilation, the issue should be referred to a "Gas Safe" registered gas fitter to provide advice.

Flues

When replacing a window near to a boiler flue care should be taken to ensure that opening windows are not installed any closer to the flue than previously unless the distance is still greater than the minimum requirement.

It is advisable to retain evidence of compliance such as pre installation photographs in case of subsequent inspection.

If there is any doubt regarding the position of opening windows near appliance flues, the issue should be referred to a "Gas Safe" registered gas fitter to provide advice.