

## Part 'F'

Key facts for Window Manufacturers and Installers

Let us clear the air!



## Ventilator Performance

Building Regulation Part F 2006 (England & Wales) now quotes background (trickle) ventilator performance in Equivalent Area (EA) but it is still denoted in mm<sup>2</sup>.

This does not relate to the physical size of the ventilator, it is an airflow performance measurement and will be marked on the trickle ventilator by the manufacturer. Trickle ventilators should be fitted in accordance with manufacturer instructions in order to achieve a similar Equivalent Area.

The change to Equivalent Area does not favour one ventilator type over

another, as slot, over-glass and over frame ventilators may all be able to comply and control options will remain broadly similar to previous regulation.

Night vent/night latch positions are no longer recommended (or illustrated in Part F) as a method of providing background ventilation.



## Work on existing dwellings (replacement windows)



New and (subsequently revised) guidance has been issued. This is as follows:

Where the original windows were fitted with trickle ventilators the replacement windows should include them. It would be good practise to fit trickle ventilators (or equivalent), with accessible controls, in all replacement windows to help with control of condensation and improve indoor air quality.

The ventilation opening should not be smaller than was originally provided. Where there was no opening or the size of the opening was not known, there should be a minimum of 5,000mm<sup>2</sup> equivalent area in habitable rooms and 2,500mm<sup>2</sup> equivalent area in kitchens, utility rooms and bathrooms.

## New Dwellings

Implementation is to be phased in and you should seek guidance from your customer or building control, but generally, all new buildings will have to comply with the requirements of Part F 2006 no later than April 2007.

There are four systems illustrated which if adopted will comply, although alternative solutions can also be approved:

- System 1: Background ventilators & intermittent extract fans
- System 2: Passive stack ventilation
- System 3: Continuous mechanical extract
- System 4: Continuous mechanical supply & extract with heat recovery

We believe System 1 will be the most widely used; there is no longer a "one size fits all" approach as the requirement for trickle ventilators in windows will be determined by:

- Dwelling floor area
- Number of bedrooms
- Number of occupants
- Number of storeys
- Number of façades

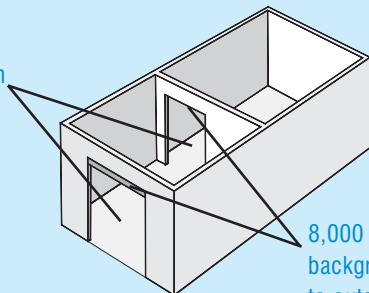
Window manufacturers will require this additional information in order to determine ventilator sizes and locations and it may be preferable to consider the background ventilation requirement at the building design stage.



## Ventilation of habitable rooms through another room or a conservatory

For an internal room (with no external wall), ventilate through an adjoining room (such as a conservatory). The purge requirement should be based on the combined floor area, and there must be an 8,000mm<sup>2</sup> EA background ventilator to the external air, and between the rooms if this opening is not permanent.

Provision for purge ventilation based on combined floor area using Appendix B



8,000 mm<sup>2</sup> EA background ventilator to outside (and inside when the opening is not permanent)



## Purge Ventilation (formerly rapid ventilation)

The openable area should be at least 1/20th of the floor area of the room. However, where a window opens between 15° and 30° then at least 1/10th of the floor area is required.

## System 1

### Background ventilators & intermittent extract fans

The total EA required for the dwelling must be determined from Table 1.2a in the Approved Document Part F. The following information is a simplified version and you are strongly advised to check compliance using the Approved Document.

Total Floor Area (m <sup>2</sup> )	Number of bedrooms (mm <sup>2</sup> EA) *				
	1	2	3	4	5
≤ 50	25,000	35,000	45,000	45,000	55,000
51-60	25,000	30,000	40,000		
61-70	30,000	30,000	30,000		
71-80	35,000	35,000	35,000		
81-90	40,000	40,000	40,000		
91-100	45,000	45,000	45,000		
> 100	Add 5,000mm <sup>2</sup> for every additional 10m <sup>2</sup> floor area				

\* Based on 2 occupants in main bedroom and 1 occupant in other bedrooms. For greater level of occupancy, assume one extra bedroom per additional person. For more than 5 bedrooms add 10,000mm<sup>2</sup> per room.

### For dwellings with a single façade

Because cross ventilation within a single façade dwelling is not possible using the background ventilator provisions as above, they should be positioned at high (typically 1.7m above floor level) and low levels (at least 1m below) within the façade. The total equivalent ventilator area required for the dwelling (from table 1.2a) should be fitted at both the high and low levels providing twice the EA of a multi façade dwelling of the same floor area. This method may not be a practical solution and therefore it may be preferable to consider Systems 3 or 4 as an alternative.



### For dwellings with more than one exposed façade

For single storey dwellings up to four storeys above ground, add 5,000mm<sup>2</sup> EA. Ventilators should be located in all rooms, giving a minimum provision of 5,000mm<sup>2</sup> EA in habitable rooms and 2,500mm<sup>2</sup> EA in wet rooms.

To promote cross ventilation, equally distribute similar equivalent ventilation areas on opposite (or adjacent) sides of the dwelling.



## System 2

### Passive stack ventilation & background ventilators

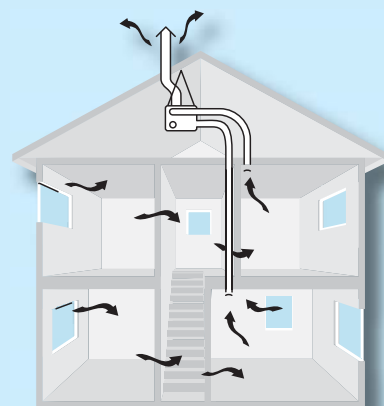
Determine the equivalent area requirement for the dwelling from table 1.2a (as System 1), then subtract from this figure 2,500mm<sup>2</sup> EA for each passive stack ventilator device used in the dwelling (located in the wet rooms). The figure arrived at is the total EA requirement for ventilators in habitable rooms only. No background ventilators should be fitted on windows in the rooms where a passive stack ventilator device is located.



## System 3

### Continuous mechanical extract & background ventilators

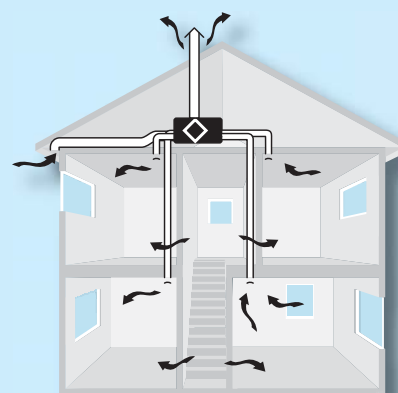
Background ventilators having a minimum of 2,500mm<sup>2</sup> EA are to be fitted in each room, except wet rooms where an extract terminal is located.



## System 4

### Continuous mechanical supply & extract with heat recovery

This system has to be finely balanced and relies on a more integral design with less components working independently from it. Therefore there is no requirement for separate background ventilators.



#### Important Note

This document is intended for use purely as a guide. In some circumstances, the ventilation requirement may differ from that stated. It is the responsibility of the window fabricator and/or installer to seek advice from the specifier after reading the Approved Document, to ascertain the ventilation requirement for the specific dwelling.

Building Regulation Part F can be downloaded from [www.dclg.gov.uk](http://www.dclg.gov.uk)

Also refer to: 'Why do I need Trickle Vents?' leaflet.