GGF Datasheet: Windows and Doorsets - Ventilation - Dwellings

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1. Introduction

This datasheet provides background, guidance and direction relating to the statutory regulations and standards which must be complied with when placing windows and doorsets on the UK & ROI market.

It is also important to recognise that customers may need, or expect, performance and/or functionality in addition to these requirements. The relationship between statutory obligations and customer desires has to be understood when aiming to provide products and installations that result in satisfied customers.

The background and supplementary information in this datasheet should assist in understanding these issues and provide the necessary information to support negotiations and agreements.

It should be noted that the requirements for windows and doorsets can be quite different when being supplied for replacement within an existing building aperture than those for windows and doorsets in an extension to an existing dwelling or for a complete new-build.

This datasheet is not a comprehensive set of instructions of how to meet all obligations, statutory or regulatory, and should not be relied upon as such.

There is no intention to reproduce here all the data contained in standards, statutes or regulations as these are subject to regular review and amendment and are easily accessible. The user is advised to ensure that they are always referring to the most up-to-date version of any document being relied upon.

2. Scope

This document describes aspects of performance of windows and doors relating to the management of the quality of the air within a building by ventilation.

It applies to windows and doors made from any material and intended for installation within the building envelope of dwellings.

3. Definitions

Doorset - Complete unit, usually intended for pedestrian access, consisting of the door frame, door leaf or leaves, any integral side panel or fanlight and hardware fitted.

Building envelope - All elements of the outer shell of a building that maintain a dry, heated or cooled indoor environment.

Background ventilation - A small ventilation opening designed to provide controllable whole house building ventilation.

Purge ventilation - Manually controlled ventilation designed to give a high rate of ventilation to rapidly dilute pollutants and/or water vapour.

Night vent locking - A locking method that leaves the opening ajar by a limited distance allowing air flow while offering limited security.

Thermal performance - A measure of the thermal properties of windows and doors. Usually measured in Window and Door energy ratings (WER, DER) or U values.

Noise attenuation - The reduction of noise by means of enhancing the glazing/background ventilation selection.

4. Guidance

It is important for the health and wellbeing of building occupants that there is sufficient air to breathe and that this air is of acceptable quality.

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There are many sources of indoor air pollution. Furnishings and electrical equipment can give off unwanted chemicals. Combustion appliances give off water vapour and potentially harmful gasses. Cooking and bathing result in water vapour in the air. People themselves exhale carbon dioxide and water vapour and also emit other odours which can be unpleasant.

Excess water vapour in the air can result in condensation which in turn can result in mould growth or even damage to the fabric of the building itself.

Poor indoor air quality can also result in or exacerbate health conditions such as asthma which not only negatively affect the individual, but also has an economic cost to the economy in terms of lost productivity and cost of healthcare.

In extreme cases, the build-up of toxic gases such as carbon dioxide, carbon monoxide and radon gases can be deadly.

Regulations describe the amount of ventilation that is to be provided in dwellings.

The amount required varies according to room type.

Ventilation is generally described as being “background” or “purge”

4.1 Background ventilation (trickle ventilation)

Background ventilation is the controllable provision of air from outside the building to provide fresh air and dilute indoor air pollutants and reduce humidity.

Background ventilation requirements are defined by a measured equivalent area (EA) which evaluates the actual airflow through a ventilator rather than just defining a hole size.

Background ventilation can be provided by several means but when provided as part of a window or door it is done by creating an air path through the framing or glazing which also has some form of mechanism to control the air flow. It is important to follow the manufacturer’s guidelines for the routed slot size as this is critical to ensure the correct design airflow is achieved.

4.2 Purge ventilation (rapid ventilation)

Purge ventilation is provision for the quick exchange of internal and external air to remove pollutants, humidity or reduce room temperature. Typically achieved by opening a window or door.

In regulations, this is generally defined by the area of opening related to the floor area of the room.

4.3 Provision of air for combustion appliances

Appliances in the home which burn gas or other fuels require an adequate supply of air in order to operate safely. Regulations define the amount and means of air supply to be provided.

Adversely affecting the safe working of a combustion appliance by failing to preserve the correct supply of fresh air or provision for removing of combustion gases is a criminal offence.

4.4 Replacing windows and doors

Where the original products were fitted with trickle ventilators to achieve background ventilation, the replacement products must also be fitted with trickle ventilators and be sized according to current regulations.

Where the original products are not fitted with trickle ventilators, the replacement products do not have to be fitted with trickle ventilators. When this is the case, it is best practice to consider the ventilation of the property and determine if and how any ventilation should be instated.

Night vent locking positions should not be considered as providing background ventilation unless the amount of ventilation has been measured and is equivalent to that required by regulation.

4.5 Areas of conflicting requirements

Ventilation and thermal performance are often seen to be in conflict. Some customers will think it contradictory to install products with a very high degree of airtightness with a background ventilator mandatorily included.

Where noise attenuation is a significant customer requirement and background ventilation is also required, correct selection of ventilation components is important.

Security and night vent locking. Any opening represents a weak point as significant leverage can be achieved. Any claim of maintained security in a vented position should be supported by test evidence.

Annex A – Additional information

The requirements for ventilation are detailed in Building Regulation documents: -

Approved Document F - Means of Ventilation for England and Wales

Technical Guidance Document F - Ventilation for the Republic of Ireland

Technical Booklet K - Ventilation for Northern Ireland

Technical Handbook Section 3 - Environment for Scotland

Please refer to the following GGF publications for guidance on the Building Regulations listed above: -

GGF Datasheet 9.1A - A guide to Building Regulations. England & Wales

GGF Datasheet 9.1B - A guide to Building Regulations. Scotland

GGF Datasheet 9.1C - A guide to Building Regulations. Northern Ireland

GGF Datasheet 9.1d - A guide to Building Regulations. Republic of Ireland