

## GGF Datasheet: A Guide to Building Regulations for New and Existing Dwellings - Republic of Ireland

9.1d 2020

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- 1.0 Introduction to the Building Regulations

The aim of the building regulations is to provide for the safety and welfare of people in and about buildings. They apply to the design and build of a new building including dwellings, or an extension to an existing building. The requirements of the building regulations are detailed in the second schedule of the building regulations. Those requirements are set out into 12 parts classified as A –M. Each part has an accompanying Technical Guidance Document that contains practical guidance of how the requirements of the building regulations can be met.

### 2.0 Scope

This document is intended to offer guidance on the use of the Building Regulations Technical Guidance Documents that impact the design, fabrication and installation of windows and doors to dwellings. It applies to window and doors manufactured from all materials and to dwellings only.

### 3.0 Technical Guidance Document B Volume 2: Fire Safety

#### 3.1 Introduction

TGD B is split into 2 parts

- 1. TGD B volume 1

#### 2. TGD B Volume 2

Volume 2 covers dwelling houses and volume 1 covers all others. In the case of the building regulations dwelling houses do not include flats. The provision for flats is included in volume 1. Both volume 1 and 2 have guidance that will help to protect life and assist the fire and rescue services in the event of fire. This guide will focus on means of escape.

#### 3.2 TGD B volume 2 – The requirements

The requirement for means of escape is detailed on page 8.

B6. A dwelling house shall be so designed and constructed that there are appropriate provisions for the early warning of fire and there are adequate means of escape appropriate in case of fire from the dwelling house to a place of safety outside the building, capable of being safely and effectively used.

Section 1.2 on page 16 has a more detailed requirement criteria.

#### 3.3 Meeting the requirements.

TGD B volume 2 section 1.3.2 – 1.3.5 gives guidance on the escape criteria of different situations including but not limited to:

- a. Dwelling houses with no floors more than 4.5m above ground floor level
- b. Dwelling houses with one floor more than 4.5m above ground floor level
- c. Dwelling houses with more than one floor above 4.5m above ground floor level

Escape windows can form part of the strategy for each of the above situations.

Windows intended to provide fire escape facility should comply with the requirements of 1.3.7 of TGD B volume 2. It also includes guidance on the installation of



conservatories that are located below an escape window.

Section 1.3.7.2 includes guidance for replacement windows.

Main entrance doors on escape routes should provide a means of escape using a non-key turn locking system from the inside. In many cases a thumb turn cylinder would be suitable. More detailed guidance for fire doors can be found within section 1.3.9.8 and Appendix B.

### 3.4 TGD B Volume 1

The requirement for means of escape is the same as volume 2. It is also detailed on page 5 of volume 1.

Section 1.4.2.2 has details for the fire resistance of doors and 1.4.3 has detail for doors on escape routes. Appendix B has further details.

## 4.0 Technical Guidance Document D- Materials and workmanship

### 4.1 Introduction

The purpose of TGD D is to ensure that all materials and workmanship are of a satisfactory standard, and fit for purpose.

### 4.2 TGD D -The Requirements

TGD D relates to new dwellings only or new dwellings formed by a material change of use.

TGD D requirements are detailed in part D on page 4 of TGD D, it states that all building work shall be carried out:

- a. With adequate and proper materials
- b. in a workmanlike manner.
- c. Letter plates shall be positioned at a reasonable height above ground level so as not to endanger the health and safety of persons using such apertures

Both the following conditions must be met to satisfy the requirements:

- a. Materials are of a suitable nature and quality.
- b. Workmanship is such that, where relevant, materials are applied and fixed so as to perform adequately their functions for which they are intended.

### 4.3 Meeting the requirements of TGD D

#### 4.3.1 Materials

There are a number of ways in which to assess the suitability of materials. The full list is contained within

Section 1: Materials.

The below represents the most likely route for compliance for windows and doors:

- a. CE marking. The Construction Products Regulation (CPR) requires that construction products placed on the market within the EU and the UK during the transitional leaving period, that are covered by a harmonised standard should normally have CE marking. For more information about achieving CE marking visit <https://www.ggf.org.uk/dashboard/ce-marking>

CE marked products will be accompanied by a Declaration of Performance containing detailed information on performance. It is essential that the declared performance is suitable.

- b. British Standards. Some of the applicable standards for window and doors would be BS 6375 parts 1, 2 and 3, PAS 24 and material specific standards such as BS 7412, BS 4873 or BS 644.
- c. Independent certification schemes. There are a number of third party certification schemes that may provide information on the performance of a product. These may be in addition to but not instead of CE marking

#### 4.3.1.1 Letter plates

Section 1.6 contains detail for the provision of letter plates. Diagram 2 supports.

#### 4.3.1.2 Glazing

Section 1.5 contains detail for the use of glazing in critical locations. Diagram 1 shows critical locations in internal and external walls.

#### 4.3.2 Workmanship

There are a number of ways in which to assess the suitability of workmanship. The full list is contained within Section 2: Workmanship.

The below represents the most likely route for compliance for windows and doors:

- a. Standards. Methods of carrying out different types of work are detailed in some British Standards and other appropriate technical specifications. The BS 8000 series of standards on workmanship on building sites combines guidance from other BSI codes and standards. Relevant standards for windows and doors include BS 8000-7, BS 8213-4 and also elements of material specific standards such as BS 7412, BS 4873 or BS 644.

- b. Management Systems. The quality of workmanship can be covered by a quality management scheme such as BS EN ISO 9001 Quality management system. These schemes give confidence that the processes and people are regularly audited by a third party and that they strive to continuously improve.

## 5.0 Technical Guidance Document F - Ventilation

### 5.1 Introduction

TGD F is divided into 2 parts:

1. F1 Means of ventilation
2. F2 Condensation in roofs

This guide will focus on F1 Means of ventilation.

### 5.2 TGD F -The requirements

The requirement for TGD F1 is detailed on page 6.

It states that:

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.

Further information for the requirements and the positive effect of achieving them are detailed in section 1.1 General.

### 5.3 Meeting the requirements

#### 4.3.2 Ventilation

The provision for ventilation is outlined in 1.2.11 of TGD F. It states that a dwelling should provide ventilation by either of the below systems:

- a. Continuous mechanical extract ventilation ( subsection 1.2.2)
- b. Mechanical ventilation with heat recovery (subsection 1.2.3)
- c. Natural ventilation with specific provision for extract ventilation (subsection 1.2.4)

In all cases purge ventilation by means of openable windows or external doors should be provided. Diagram 1a, 1b and 2a, 2b and 2c show the key characteristics of each approach.

Section 1.1.14 Glossary has further details for purge ventilation. For the purpose of this document, opening areas for background ventilators are specified in terms of equivalent area. Section 1.1.15 has more detail.

Where background ventilators and individual fans are fitted in the same room they should be a minimum of 0.5m apart.

System A- Continuous mechanical extract ventilation and System B- Mechanical ventilation with heat recovery mentioned above will be provided for by the provision of a mechanical ventilation system and will not require background ventilators to be fitted to windows and doors. They do however require purge ventilation to be provided. Table 3 on page 22 of TGD F and section 1.2.4.6 contains the detail for purge ventilation requirements.

Guidance for System C- Natural ventilation with specific provision for extract ventilation is given in section 1.2.4 Natural ventilation. It will require background ventilation, usually provided by trickle ventilators fitted into windows and doors. Section 1.2.4.4 has more detail on the selection of background ventilators. Diagram 5 supports.

Section 1.2.4.1 contains detail to assist with determining the total equivalent area of background ventilation that is required. Table 3, diagram 4 and diagram 5 support. Section 1.2.4.3 has specific detail for wet rooms.

Table 3 on page 22 of TGD F and section 1.2.4.6 contains the detail for purge ventilation requirements.

Room or Space	General Ventilation Minimum equivalent area of background ventilator <sup>a</sup> (mm <sup>2</sup> )	Extract fan <sup>b</sup> - Minimum intermittent extract rate (l/s) <sup>b</sup>	Purge ventilation Opening window or external door - Minimum provision <sup>c</sup>
Habitable Room	7000 <sup>d,f</sup>	-	1/20th of room floor area
Kitchen	3500 <sup>d,f</sup>	60l/s generally 30l/s if immediately adjacent to cooker (e.g. cooker-hood not recirculating)	Window opening section (no size requirement) <sup>g</sup>
Utility Room	3500 <sup>d,f</sup>	30 l/s	Window opening section (no size requirement) <sup>g</sup>
Bathroom	3500 <sup>d,f</sup>	15 l/s	Window opening section (no size requirement) <sup>g</sup>
Sanitary Accommodation (no bath or shower)	3500 <sup>d,f</sup>	6 l/s <sup>e</sup>	Window opening section (no size requirement) <sup>g</sup>

Notes:  
 (a) See paragraph 1.2.4.1 re: total equivalent area for all background ventilators.  
 (b) See paragraphs 1.2.4.9 and 1.2.4.10 re alternative of passive stack ventilation or continuous room ventilation with heat recovery.  
 (c) See paragraph 1.2.4.12 re the extent and location of background ventilation where there is only a single exposed façade and cross-ventilation is not possible.  
 (d) See paragraph 1.2.4.3 re ventilation provision where the provision of background ventilation and purge ventilation is not possible, e.g. when there is no external wall.  
 (e) As an alternative, the opening window section provided for purge ventilation may also be relied on for extract ventilation.  
 (f) See paragraphs 1.2.4.13 to 1.2.4.15 re: provision for ventilation of habitable rooms through other rooms or into courtyards.  
 (g) Opening window or external door minimum provisions given in this table are for ventilation purposes. Other requirements apply to the provision of openings for windows or external doors for example escape in case of a fire. Refer to Part B / TGD B for further guidance.  
 (h) The performance flowrates for Intermittent extract fans should be tested in accordance with I.S. EN 13141-4:2011. Cooker Hood performance flowrates should be measured in accordance with I.S. EN 13141-3:2017.

Guidance for single sided ventilation, ventilation of habitable rooms through other rooms and ventilating to a court are detailed within sections 1.2.4.12-1.2.4.14, Diagrams 6-9 support.

## 6.0 Technical Guidance Document K: Stairways, Ladders, Ramps and Guards

### 6.1 Introduction

TGD K is split into 4 parts, this guide will focus on

1. K1 Stairways, ladders and ramps
2. Protection from falling

### 6.2 TGD K – The requirements

The requirements for K1 and K2 are detailed on page 4. They state that:

K1 – Stairway, ladders and ramps shall be such as to afford safe passage for the users of a building.

K2 - In a building the sides of every floor, balcony and every part of a roof to which people have access and sunken areas connecting the building, shall be guarded to protect users from the risk of falling.

### 6.3 Meeting the requirements

K1 - Where guarding of stairways or ramps contains glazing then the guidance in section 1.1.19 should be followed. This includes but is not limited to compliance with BS 6262-4. The appropriate heights and strength of guarding is set out in Diagram 6.

K2 – Sections 2.2 – 2.9 give guidance for the provision of pedestrian guarding. Associated Diagrams 7-11 support.

Key points include:

Guarding should be capable of resisting the force given in I.S EN 1991-1-1 together with the Irish National Annex.

Guarding should be provided for any window, the sill of which is above 1400mm above ground level and is less than 800mm in height above internal floor level.

In dwellings where a window is easily accessible and through which a person may fall, and is more than 1400mm above external floor level suitable safety restrictors should be provided.

## 7.0 Technical Guidance Document L – Conservation of Fuel and Energy - Dwellings

### 7.1 Introduction

TGD L – Dwellings is split into 2 parts:

1. L1-New dwellings
2. L2-Existing dwellings.

It also includes the European Union (Energy Performance of Buildings) Regulations 2019, Regulation 7 and Regulation 8.

### 7.2 TGD L – The requirements

The requirements for TGD L are detailed on page 6 and 7 of the document.

The individual requirements of L1, L2 Regulation 7 and Regulation 8 are included.

Section 0.1 has detail for the application of the regulations. Section 0.1.2.3 for New dwellings, gives detail where a dwelling has an attached room or space that is to be used for commercial purposes, and where a dwelling forms part of a larger building.

Section 0.1.3 contains detail relating to Existing dwellings.

### 7.3 Meeting the requirements

#### 7.3.1 Guidance for new dwellings is detailed in Section 1 on page 15 of TGD L – Dwellings.

Section 1.3.2.2 has detail on limiting heat loss through the building fabric elements, of which windows and doors are included. Table 1 supports. Within the notes of Table 1 it states that the maximum U value for windows, doors and roof lights is 1.4 W/m<sup>2</sup>K.

U values can be calculated via a range of methods. Section 0.3.6 and Appendix A contain detail.

Section 1.3.3 gives guidance on thermal bridging and how to take reasonable care to reduce its effects. Thermal breaks should be incorporated where required, e.g. aluminium low thresholds and the installation instructions of the system designer should be followed. Further detail for thermal bridging can be found in Appendix D.

Diagram 1 shows detail for an average area weighted elemental U value dwelling where it shows an average U value for window, doors and roof lights to be 1.4 W/m<sup>2</sup>K.

U values for windows and doors should be calculated and declared as whole product U values, not glass only centre pane values.

Section 1.3.4 states that to avoid excessive heat losses, reasonable care should be taken to limit the air permeability of the envelope of each dwelling. Including windows and doors.

Air permeability of window and doors is determined by way of test in accordance with BS 6375-1.

**7.3.2** Guidance for existing dwellings is detailed in Section 2 on page 30 of TGD L – Dwellings.

Section 2.1.2.5 gives guidance for the acceptable level of thermal insulation for each of the plane elements of the building of which windows, doors and roof lights are included. Table 5 supports.

Section 2.1.3 has detail for limiting the effects of thermal bridging including around window and door openings. Thermal breaks should be incorporated where required, e.g. aluminium low thresholds and the installation instructions of the system designer should be followed. Further detail for thermal bridging can be found in Appendix D.

2.1.4 Air permeability, contains detail for ensuring adequate measures are taken on ensure windows and doors meet the required specification for air permeability. It includes 2.1.4.2 which has detail for the sealing at the edges of windows and doors, and the fitting of draft seals in the frames of openable elements.

**8.0** Technical Guidance Document M – Access and Use

**8.1** Introduction

TGD M is split into 4 parts. This guide will focus on M1 and M2 which cover access to buildings.

**8.2** TGD M – The requirements

The requirements for TGD M are listed on page 9 of the document.

They state that:

M1 – Adequate provision shall be made for people to access and use a building, its facilities and its environs.

M2 – Adequate provision shall be made for people to approach and access an extension to a building.

**8.3** Meeting the requirements

Sections 0.2 and 0.4 provide some guidance on what is expected to meet the requirements.

Section 3.0 deals specifically with dwellings including individual apartments. It includes 3.2 Access to dwellings. 3.2 provides guidance on accessible entrances. It gives detail on what is considered to be an accessible entrance and which entrance that it should apply to 3.2.2 gives details of level entry (easily accessible thresholds) and the minimum required clear opening of 800mm. It also provides guidance on certain exceptions. Further detail for accessible thresholds can be found in publication *Accessible Thresholds In New Housing*.