

GGF Datasheet: A Guide to Building Regulations for Dwellings - NI

9.1c 2020

Contents

- 1.0 Introduction to the Building Regulation Technical Booklets (TB)
- 2.0 Scope
- 3.0 TB B: Materials and Workmanship
- 4.0 TB E: Fire Safety
- 5.0 TB F1: Conservation of Fuel and Power in Dwellings
- 6.0 TB H: Stairs, Ramps, Guarding and Protection from Impact
- 7.0 TB K: Ventilation
- 8.0 TB R: Access to and Use of Buildings
- 9.0 TB V: Glazing

1.0 Introduction to the Building Regulations

The aim of the building regulations is to provide for the health, safety, welfare and convenience 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 from page 20 of the building regulations. Those requirements are set out into 14 parts classified as B – V. Each part has an accompanying Technical Booklet 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 Booklets 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 Booklet B: Materials and Workmanship

3.1 Introduction

The purpose of TB B is to ensure that all materials and workmanship are of a satisfactory standard, and fit for

purpose. The most recent publication of TB B took effect from 1st July 2013.

3.2 TB B -The Requirements

TB B relates to new dwellings only or new dwellings formed by a material change of use.

The requirements of TB B are detailed on page 4 of the document, it states that in all relevant work:

- a. The materials used shall-
 - i) Be of a suitable nature and quality
 - ii) Be adequately mixed and prepared
 - iii) Be applied, used or fixed so as to perform the function for which they are designed; and
 - iv) Not continue to emit any harmful substance longer than is reasonable in the circumstances; and
- b. The standards of materials and workmanship need be no more than are necessary to-
 - i) Secure the health, safety, welfare and convenience of persons in or about the building; and
 - ii) Further the conservation of fuel and power.

3.3 Meeting the requirements

3.3.1 Materials

There are a number of ways in which to assess the suitability of materials. The full list is contained within Section 2.2.

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

3.3.2 Workmanship

There are a number of ways in which to assess the suitability of workmanship. The full list is contained within Section 2.15.

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.

4.0 Technical Booklet E: Fire Safety

4.1 Introduction

The purpose of TB E is to ensure that there is adequate warning and means of escape to buildings as well as limiting the spread of fire through building design and construction.

The most recent publication of TB E took effect from 31st October 2012.

4.2 TB E – The requirements

The requirements for TB E are detailed on page 9 of the

document.

This guide will focus on means of escape.

A. A building shall be so designed and constructed that in the event of a fire there is-

- i) Where appropriate, adequate means of detection
- ii) Adequate means of giving warning; and
- iii) Adequate means of escape.

Sections 0.1 and 0.2 starting on page 10 have more detail.

4.3 Meeting the requirements.

TB E section 2.2 contains detail for dwelling houses.

Where there is no storey more than 4.5m above ground floor level then 2.4 to 2.11 apply

Section 2.4 – 2.8 contains detail relevant to the positioning of emergency egress windows. Diagrams 2.1 and 2.2 support.

Section 2.9 contains detail relevant to the design and fabrication of emergency egress windows, including minimum clear openings.

Section 2.10 gives detail about the environment requirements for an emergency egress window to evacuate into.

Section 2.12 and 2.13 provide detail for dwellings with one storey more than 4.5m above ground level. These requirements are in addition to the common provisions detailed in 2.4 -2.11.

Section 2.14 contains detail for dwellings with more than one floor above 4.5m from ground floor level. These requirements are in addition to the common provisions detailed in 2.4 – 2.11.

The fire separation requirements of a new storey are detailed within section 2.21 and 2.22. Diagram 2.1 supports.

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 4.29-4.35. Table 4.5 supports.

Section 4.36-4.39 contains detail for the provision of cavity barriers. Note 5 of table 4.6 makes reference to window and door frames being suitable cavity barriers provided they comply with the requirements in 4.38.

5.0 Technical Booklet F1- Conservation of Fuel and Power in Dwellings

5.1 Introduction

The purpose of TB F1 is to ensure that there is reasonable provision made for the conservation of fuel and power in any building by limiting heat gains and losses.

The most recent publication of TB F1 took effect from 31st October 2012. It is supported by a separately published amendment document that took effect from 25th February 2014. For the purpose of this guide the amended document will be referred to as ATB F1.

5.1 TB F1 – The requirements

The requirements for TB F1 are detailed on pages 6-9 of the document. Note that the requirement for regulation 38 has been updated in ATB F1.

It states that:

Reasonable provision shall be made for the conservation of fuel and power in any building by-

- a. Limiting heat gains and losses-
 - i. Through thermal elements and other parts of the building fabric; and
 - ii. From pipes, ducts and vessels;
- b. providing energy efficient fixed building services with effective controls; and
- c. commissioning the fixed building services

5.2 Meeting the requirements

Minimum acceptable standards for U values are given in section 2.31-2.35. Table 2.2 supports. It does however state that in order to achieve the Target Energy Rate (TER) then better fabric performance may well be required.

Detail on the calculation of U values is given in section 1.9 and 2.32.

Sections 2.39-2.41 contains the detail for limiting the effects of solar control. Including window size and orientation.

Section 2.51 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.

Guidance for buildings of historical or architectural merit

are contained within sections 3.3-3.5 and ATB F1 has amendments to the wording of 3.3.

Detail for extensions to existing dwellings is provided in sections 3.6-3.14. There are 3 approaches included.

- a. The standards based approach is covered in sections 3.8 – 3.11
- b. The calculated trade off approach is covered in section 3.12
- c. The equivalent carbon target approach is covered in 3.13 and 3.14

Sections 3.15-3.18 and 3.27 - 3.28 contain guidance for conservatories and highly glazed extensions to existing dwellings

The requirements for dwellings affected by a material change of use or energy status are detailed within 3.19 – 3.28.

Replacement windows and doors are included within Controlled Fittings section 3.41 – 3.48. Table 3.1 supports and gives the minimum Window Energy Rating (WER) and U value.

Section 3.51 gives guidance on thermal bridging in existing dwellings 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.

6.0 Technical Booklet H – Stairs, Ramps, Guarding and Protection from Impact

6.1 Introduction

The purpose of TB H is to ensure the safety of people moving about and using buildings.

The most recent publication of TB E took effect from 31st October 2012.

6.2 TB H – The requirements

The requirements for TB H are listed on pages 6-8 of the document.

Regulation 57 contains the requirement for guarding and regulation 60 contains the requirement for protection from collision with open windows.

Regulation 59 does not apply to dwellings and regulation 60 only applies when a window opens over a public route of travel.

6.3 Meeting the requirements

Section 0.11 contains detail for the performance and design considerations for protection from collision from open windows. Further supporting information is provided in section 8 on page 44. Diagram 8.1 supports.

Section 5 provides guidance for the design and use of guarding. Diagram 5.1 and Table 5.1 supports. Table 5.1 provides the minimum horizontal force that guarding should resist and provides information on the required location of guarding.

7.0 Technical Booklet K – Ventilation

7.1 Introduction

The purpose of TB K is to ensure there is adequate means of ventilation for people within a building.

The most recent publication of TB K took effect from 31st October 2012.

7.2 TB K – The requirements

The requirements of TB K are listed on page 6 of the document. This guide will focus on regulation 65, Means of Ventilation. It states that: -

1. Adequate means of ventilation shall be provided for people within a building.
2. Fixed mechanical ventilation systems and any associated controls shall be tested and commissioned to ensure that the requirement of paragraph (1) is met.

7.3 Meeting the Requirements

Guidance on the general performance of ventilation systems is provided in 0.1-0.3 Performance.

Section 1.32 and 1.33 contains detail relevant to buildings of historic or architectural merit.

7.3.1 New dwellings

Section 2 parts 2.1–2.108 detail acceptable methods of ventilation. Tables 2.1-2.5 and diagrams 2.1 -2.5 support.

Section 2 is split into 4 Methods. Details of each method are contained within section 2.1. Each method has its own supporting section.

Method 1 – Ventilation Rates is detailed within sections 2.4-2.7 with tables 2.1 and 2.2 supporting.

Method 2(i) Ventilation systems for dwellings without basements is detailed within sections 2.8-2.105. 2.11

includes detail for the 4 different system types available for method 2. Tables 2.3-2.5 and diagrams 2.1-2.2 support.

Method 2 (ii) Ventilation systems for dwellings with basements is detailed within sections 2.106-2.108.

Method 3 – Other ventilation methods is detailed within section 2.109.

Ventilation of a habitable room through another habitable room or conservatory is detailed within section 2.110 -2.112. Diagrams 2.3 and 2.4 support.

The guidance for each Method includes detail for rapid ventilation via openable windows and guidance on calculating the equivalent area of back ground ventilation, usually provided by trickle ventilators. Section 1.17 and 1.18 contains information regarding equivalent area.

Appendix C contains examples of calculations for ventilation sizing for dwellings.

7.3.2 Existing Dwellings

For the addition of a habitable room (not including a conservatory) see section 2.113-2.116.

For the addition of a conservatory to an existing dwelling see sections 2.122-2.126.

Section 2.26 contains relevant detail for rapid ventilation.

Section 4 contains more detailed information on the design of replacement windows for ventilation. Appendix B and diagram B.1 support. It provides guidance on rapid ventilation and trickle ventilators.

8.0 Technical Booklet R – Access To and Use of Buildings

8.1 Introduction

The purpose of TB R is to provide guidance to ensure that buildings are accessible and usable.

The most recent publication of TB R took effect from 31st October 2012.

8.2 TB R – The requirements

The requirements for TB R are listed on page 6 and 7 of the document.

Regulation 91 of the requirements states that:

Reasonable provision shall be made for people to have access to, within and to use a building and its facilities:

Providing that in a dwelling this shall be limited to the entrance storey or, where that storey contains no habitable

room, to the principal storey.

8.3 Meeting the Requirements

In dwellings, all visitors should be able to get access to and from the dwelling regardless of their ability, age or gender.

Section 1.8 includes detail on the principals of inclusive design within the built environment relating to dwellings.

Section 7.8 contains guidance to enable wheelchair users to gain access into a dwelling. It includes minimum clear opening dimensions for entrance doors and the requirement for a level threshold. Diagram 7.1 has further detail for level thresholds.

9.0 Technical Booklet V – Glazing

9.1 Introduction

The purpose of TB V is to provide guidance on the safe application, use and cleaning of glazing in a dwelling.

The most recent publication of TB V took effect from 31st October 2012.

9.2 TB V – The requirements

The requirements for TB V are listed on page 6 of the document.

It states that:

1. Reasonable provision shall be made to limit the risk of people sustaining cutting and piercing injuries from accidental impact with glazing.
2. Any window, skylight or ventilator which can be opened by a person shall be so constructed or equipped that it may be opened and adjusted safely
3. Reasonable provision shall be made for the cleaning of internal and external glazing

9.3 Meeting the requirements

Section 0.1-0.8 has some general guidance on the expected performance of the different elements related to the requirements above.

Section 1.1 contains detail for critical locations. Diagram 1.1 supports. Within these locations measures must be taken to limit the risk of impact with glazing.

Section 2.1 gives guidance on 3 ways that the risk can be limited.

- a. safe breakage

- b. be robust or in small panes

- c. be permanently protected or shielded

Section 2.2 includes detail for safe breakage.

Sections 2.5 and 2.6 contain detail for robustness and small panes. Diagrams 2.1 and 2.2 support.

Section 2.7 and 2.8 contain detail for permanent screen protection. Diagram 2.3 supports.

Section 4 provides guidance for the safe opening and closing of windows. It includes the location of controls and ventilators. Diagram 4.1 supports.

Section 5 provides guidance for the safe means of access for cleaning glazing. Diagram 5.1 supports. This section includes detail on the maximum safe reach for cleaning.