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Building Regulations 1997

Technical Guidance Document D

Materials and Workmanship

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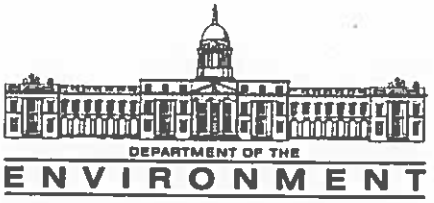

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Building Regulations, 1997
Technical Guidance Document D
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Introduction

This document has been published by the Minister for the Environment under article 7 of the Building Regulations, 1997. It provides guidance in relation to Part D of the Second Schedule to the Regulations. The document should be read in conjunction with the Building Regulations, 1997, and other documents published under these Regulations.

In general, Building Regulations apply to the construction of new buildings and to extensions and material alterations to buildings. In addition, certain parts of the Regulations apply to existing buildings where a material change of use takes place. Otherwise, Building Regulations do not apply to buildings constructed prior to 1 June, 1992.

Transitional Arrangements

In general, this document applies to works, or buildings in which a material change of use takes place, where the works or the change of use commence or takes place, as the case may be on or after 1 January, 1998. Technical Guidance Document Document D - MATERIALS and WORKMANSHIP, dated 1991, also ceases to have effect from that date. However, the latter document may continue to be used in the case of works, or buildings in which a material change of use takes place -

- where the works or the change of use commence or takes place, as the case may be, before 1 January, 1998,

- in respect of which a Fire Safety Certificate under the Building Control Regulations, 1991 to 1994, has been granted, where the works or change of use commence or takes place, as the case may be, not later than 31 December, 2002.

The Guidance

The materials, methods of construction, standards and other specifications (including technical specifications) which are referred to in this document are those which are likely to be suitable for the purposes of the Regulations. Where works are carried out in accordance with the guidance in this document, this will, prima facie, indicate compliance with Part D of the Second Schedule to the Building Regulations. However, the adoption of an approach other than that outlined in the guidance is not precluded provided that the relevant requirements of the Regulations are complied with. Those involved in the design and construction of a building may be required by the relevant building control authority to provide such evidence as is necessary to establish that the requirements of the Building Regulations are being complied with.

Existing Buildings

In the case of material alterations or material changes of use of existing buildings, the adoption without modification of the guidance in this document may not, in all circumstances, be appropriate. In particular, the adherence to guidance including codes, standards or technical specifications, intended for application to new work may be unduly restrictive or impracticable. Buildings of architectural or historical interest are especially likely to give rise to such circumstances. In these situations, alternative approaches based on the principles contained in the document may be more relevant and should be considered.

Technical Specifications

Building Regulations are made for specific purposes, e.g. to provide, in relation to buildings, for the health, safety and welfare of persons, the conservation of energy and access for disabled persons. Technical specifications (including harmonised European Standards, European Technical Approvals, National Standards and Agrément Certificates) are relevant to the extent that they relate to these considerations. Any reference to a technical specification is a reference to so much of the specification as is relevant in the context in which it arises. Technical specifications may also address other aspects not covered by the Regulations.

A reference to a technical specification is to the latest edition (including any amendments, supplements or addenda) current at the date of publication of this Technical Guidance Document. However, if this version of the technical specification is subsequently revised or updated by the issuing body, the new version may be used as a source of guidance provided that it continues to address the relevant requirements of the Regulations.

Interpretation

In this document, a reference to a section, sub-section, part, paragraph or diagram is, unless otherwise stated, a reference to a section, sub-section, part, paragraph or diagram, as the case may be, of this document. A reference to another Technical Guidance Document is a reference to the latest edition of a document published by the Minister for the Environment under article 7 of the Building Regulations, 1997.

Building Regulations - The Requirement

Part D of the Second Schedule to the Building Regulations, 1997, provides as follows:

Materials and workmanship.	D1	All works to which these Regulations apply shall be carried out with proper materials and in a workmanlike manner.
Definition for this Part.	D2	In this Part, "proper materials" means materials which are fit for the use for which they are intended and for the conditions in which they are to be used, and includes materials which: (a) bear a CE Marking in accordance with the provisions of the Construction Products Directive; or (b) comply with an appropriate harmonized standard, European technical approval or national technical specification as defined in article 4(2) of the Construction Products Directive; or (c) comply with an appropriate Irish Standard or Irish Agrément Board Certificate or with an alternative national technical specification of any State which is a contracting party to the Agreement on the European Economic Area, which provides in use an equivalent level of safety and suitability. "Agreement on the European Economic Area" means the Agreement on the European Economic Area between the European Communities, their Member States and the Republic of Austria, the Republic of Finland, the Republic of Iceland, the Principality of Liechtenstein, the Kingdom of Norway, the Kingdom of Sweden and the Swiss Confederation, as published in the Official Journal of the European Communities (OJ L1/9 of 3rd January, 1994).

General

0.1 Materials include products, components, fittings, items of equipment and backfilling for excavations.

Materials should be:

(a) of a suitable nature and quality in relation to the purposes and conditions of their use, and

(b) adequately mixed or prepared, and

(c) applied, used or fixed so as to perform adequately the functions for which they are intended.

Materials used in building work should, as far as is practicable, be free of CFC's.

0.2 European Communities (Construction Products) Regulations, 1992 (S.I. No 198 of 1992), as amended by the European Communities (Construction Products) (Amendment) Regulations (S.I. No 210 of 1994), which came into force on 1st January, 1993 and 1st January, 1995 respectively, implement the Construction Products Directive (89/106/EEC) which is referred to in Requirement D2 (a) and (b).

0.3 Requirement D2(c) refers to an equivalent level of safety and suitability. The National Standards Authority of Ireland (NSAI) may be consulted for

advice in relation to equivalence with an Irish technical specification.

0.4 Section 11 of the Building Control Act, 1990, empowers an authorised officer of a building control authority to take action in relation to construction work, including the taking of samples of materials, as may be necesary to establish whether or not the requirements of the Building Regulations are being complied with.

0.5 Tolerances - All building dimensions, including those for components, materials and spaces, are subject to the tolerances of normal building practice. These tolerances are applicable to all dimensions specified in the Technical Guidance Documents where a minimum or maximum is not specified. BS 6954 : Tolerances for building, describes the nature of dimensional variability in building and the purposes for which it has to be quantified. It also defines the factors to be taken into account in the evaluation, specification and verification of tolerances for the manufacture of building components and for site work. It applies to components and buildings generally, including those designed in accordance with the principles of modular coordination.

Section 1
Materials

Fitness of Materials

1.1 While the primary route for establishing the fitness of a material for its intended use is through the recognised standardisation procedures referred to in paragraphs (a), (b) or (c) of Requirement D2, other methods may also be considered in establishing fitness including:-

(a) Independent certification by an approved body e.g. the National Standards Authority of Ireland (NSAI);

(b) Tests and calculations carried out by an accredited laboratory, showing that the material is capable of performing the function for which it is intended. The INAB (Irish National Accreditation Board) offers a way of ensuring that tests are conducted in accordance with recognised criteria;

(c) Performance in use, i.e. that the material can be shown by experience, such as its use in a substantially similar way in an existing building, to be capable of enabling the building to satisfy the relevant functional requirements of the Building Regulations.

Note:
Schemes which comply with the relevant recommendations of I.S. EN ISO 9001 or 9002: 1994 Quality Systems, are intended to ensure that materials can be expected to be of consistent quality. They are not intended to show that the materials conform to an appropriate technical specification.

1.2 **Resistance to moisture** - Where any material is likely to be adversely affected by condensation, by moisture from the ground or by airborne moisture such as rain or snow:

(a) the construction should prevent the passage of moisture to the material, or

(b) the material should be treated or otherwise protected from moisture.

See also Technical Guidance Document C.

1.3 **Resistance to subsoil** - Any material in contact with the ground, or in the foundations, should be capable of resisting attacks by deleterious material in the subsoil such as sulphates (see also Technical Guidance Document C).

1.4 **High alumina cement** - High alumina cement should not be used in structural work, including foundations.

1.5 **Glazing** - Any unguarded glazing, below the level of 800 mm above the floor, should be safety glazing in accordance with the recommendations of BS 6262, Part 4 (see also Technical Guidance Document K).

Section 2
Workmanship

Adequacy of Workmanship

2.1 A proper standard of workmanship and the appropriate use of any material is essential to achieving compliance with the requirements of the Regulations.

2.2 The conditions of use of particular materials and in some cases the methods of achieving proper standards of workmanship are contained in technical specifications referred to in Requirement D2.

BS 8000 Workmanship on building sites, which gathers together guidance from other British Standards Institution Codes and Standards, gives guidance on basic workmanship for conventional types of building work.

Agrément Certificates issued by the Irish Agrément Board may specify workmanship for the products covered by the certificates.

2.3 If other methods are being used, it may be possible to demonstrate that the workmanship satisfies the relevant requirement by

(a) quality assurance schemes i.e. the method is covered by a scheme which complies with the relevant recommendations of I.S. EN ISO 9001 or 9002: 1994 Quality Systems; or

(b) performance in use i.e. by showing, such as in an existing building, a previous use of the method of workmanship.

Standards and Other References

I.S. EN ISO 9001: 1994 Quality Systems - Model for Quality Assurance in Design/Development, Production, Installation and Servicing

I.S. EN ISO 9002 : 1994 Quality Systems - Model for Quality Assurance in Production, Installation and Servicing

BS 6262 : Glazing for buildings Part 4 : 1994 Code of practice for safety Human impact

BS 6954 : Tolerances for building Part 1 : 1988 (1994) Recommendations for basic principles for evaluation and specification

BS 6954 : Tolerances for building Part 2 : 1988 (1994) Recommendations for statistical basis for predicting fit between components having a normal distribution of sizes

BS 6954 : Tolerances for building Part 3 : 1988 (1994) Recommendations for selecting target size and predicting fit

BS 8000 Workmanship on building sites. Parts 1 to 15 : 1989-1990