

SCOTTISH EXECUTIVE

BUILDING REGULATION NOTE Note No. 5/99

Building Standards (Scotland) Regulations 1990 (as amended)

European Matters No. 2

- 1 Introduction
- 2 European standards - understanding their format
- 3 Levels/classes
- 4 Harmonised European fire tests
- 5 CE marking of gas appliances
- 6 Further information

1 INTRODUCTION

1.1 This Building Regulation Note is the second in the series of guidance notes to Building Control Officers to keep them abreast of European issues that could directly affect their work. The first (2/99) covered general issues. This Note covers a range of more specific subject areas chosen only to reflect the Department's continuing familiarisation with the issues involved.

2 EUROPEAN STANDARDS

2.1 European Standards will be, with a few exceptions, noticeably different from the present British Standards that they are to replace. European Standards will be presented in 2 basic formats: a typical European Standard (EN) and a harmonised product standard (hEN).

2.2 A typical European Standard will comprise 2 sections:

Normative section (mandatory) covering design/performance criteria and/or execution (installation) standards; and

Annex(s) **Normative** (mandatory) containing information which forms an integral part of the standard, e.g. test methods and/or **Informative** (voluntary) containing significant information but does not contain requirements, e.g. good practice guidance of individual MS or to provide preferred values for use in the UK selected from a range.

2.3 A harmonised European product standard (none have yet been published in their final agreed format) will comprise 3 sections:

Normative section comprising a mandatory harmonised product standards section and, sometimes, a voluntary section covering non-harmonised product standards;

Informative annex containing significant information but does not contain requirements, e.g. to provide preferred values for use in the UK selected from a range, (may however be made mandatory by some MS); and

Annex Z describing the product characteristics in the normative section that require to be addressed. These characteristics are drafted on the basis of the essential requirements and of the regulatory requirements of MS.

2.4 An hEN always consists of 3 sections. The normative section includes harmonised and sometimes non-harmonised standards. The harmonised standards have been mandated and will lead to CE marking of the product. They are mandatory for products that require a CE mark. Non-harmonised standards may well be important but have not been mandated and the product characteristics therefore are not covered by the Essential Requirements. They are voluntary. (e.g. colour matching of sanitary wear or efflorescence on bricks). All harmonised product standards include an Annex Z (except as explained in 2.5 below) which differentiates between the mandatory and voluntary parts of the standard. Annex Z lists the relevant essential requirements, and against each characteristic, the clause or clauses in the standard that address the characteristic. Clauses 2.3 and 2.4 provide a very simplified summary of how the ENs are to be formatted.

2.5 Existing British Standards provide best practice guidance on safety, design, performance, installation or test method criteria. The intention of the European Commission is that, where European Standards are specified, the requirements will be mandatory. It was decided, for presentational purposes, to have normative (mandatory) and/or informative (voluntary) annexes. The section headings and the text (the use of 'must' and 'should') will differentiate the two.

2.6 Unfortunately there are several product standards already published that do not follow the standard format. Either they were published before the mandate was issued or, for whatever reason, the technical committee responsible decided to produce a voluntary standard first and then amend it later with the addition of Annex Z. Also some product standards include test methods normally included in the supporting standards.

2.7 Government interpretation of the CPD is that CE marking is not mandatory in the UK. However, given that hENs will be mandatory, it is reasonable to assume that it will be in industry's own interests to CE mark their products to show compliance with the appropriate hENs. Understanding the complexities of the new system is therefore imperative.

3 LEVELS AND CLASSES OF CONSTRUCTION PRODUCTS

3.1 In order to take account of differences in geographical or climatic conditions or in ways of life or levels of safety throughout Member States, and where it can be shown that differences in product performance can be identified and justified, (e.g. where regulations presently exist) it is necessary to categorise building products into classes. These classes will be incorporated in harmonised product standards presently under preparation. The purpose is to prevent any barrier to trade and achieve the free

circulation and use of construction products throughout Europe.

3.2 **Classes** express a quantitative range of performance of a product or of construction work. Classes are necessary to take account of different national requirements and each Member States can set its own specific desired class range to suit those requirements. The classes may refer to a construction, to a product as a whole or to individual characteristics of a product.

3.3. Unfortunately, just to catch out the unwary, 2 types of classes are identified in the Interpretative Documents: Regulatory and Technical.

Regulatory classes link directly to the Essential Requirements set out in the CPD (see Building Regulation Note 2/99), for example ER2, reaction to fire. At present all Member States use a classification system of product performance as a method of compliance with national standards. Because the various classification systems vary they constitute a barrier to trade and so harmonisation is required at a European level. Regulatory classes therefore will be harmonised throughout Europe and the CPD requires all MS to specify performance levels from within these classes.

Technical classes do not link to the Essential Requirements. They are classes of product performance established as a means of convenience for specifiers, manufacturers and purchasers, for example the strength classes of concrete. Although not identified as a means of complying with the requirement levels of the works they identify a product's performance with its intended use. Technical classes may be necessary to achieve the objective of the national standards and may be referred to by MS if necessary.

3.4 **Levels** are used to define a minimum performance below which a product cannot, under any circumstances, be considered fit for use as a basis for establishing a performance class (e.g. a brick made of wax cannot be called a brick). It follows that the threshold level of a product will be set at the lowest commonly accepted level found in the European Union. Threshold levels are necessary to ensure that manufacturers are unable to obtain a CE mark simply by declaring a very low performance standard. MS are free to fix more stringent levels for specific use where appropriate.

4. HARMONISED EUROPEAN FIRE TESTS

4.1 The implementation of the Construction Products Directive within the Member States (MS) requires the harmonisation of the methods of assessing the performance of the products incorporated in works for which essential requirements on health and safety are formulated. One of these requirements specifies that a building must, in the event of fire, ensure a certain level of safety to both occupants and firemen.

4.2 After nearly ten years of debate and testing, the harmonised system of fire testing has now been fixed by the EU Standing Commission on Construction. It consists of two sets of tests, one for fire resistance and the other for reaction to fire. Over the next few years all existing fire tests on building products will be replaced by these two sets of tests. Products will be able to be tested in one MS, and the test certificates accepted in all other MS.

4.3 Although the tests will be harmonised the standards are not to be harmonised. Therefore different requirements for fire resistance and the reaction to fire will remain, but these differences will be expressed in the form of different standard classes related to the common test regime.

4.4 The timetable for the introduction of the tests is fairly tight and will be in three stages:

1. From a date to be decided by the EU all national fire regulations must specify standards of fire performance in terms of the new tests, while also retaining their existing test specifications. This is the start of the transitional period.
2. A number of years after this, national test methods (e.g. British Standards) must be withdrawn, and all new products will have to be tested to the new harmonised standards. Existing products with certificates can continue to be sold.
3. A number of years after this there will be a requirement that only products tested to the new harmonised standard can be sold.

4.5 The official view generally from Europe is that the start of the transition period will be December 2000, but it is considered that the most likely start date is 2001. There is continuing debate as to the length of the transitional period, but this is not significant as the critical date is the beginning of the period. From the first day of the transitional period it must be possible to determine if products tested to either the existing standards or the new harmonised standards meet the requirements of the regulations. Failure to do this could lead to a manufacturer of products tested to the new harmonised European methods seeking legal redress if they cannot be specified in Scotland.

4.6 The transitional period will require Part D to provide two alternative methods of testing products for resistance to fire and reaction to fire, the current system using British Standards and a new system using European harmonised standards. Clearly these two systems must offer the same degree of fire safety and so it is necessary to establish some form of equivalency between them. However this is far from easy as the test methods are completely different.

4.7 In the case of fire resistance there is no certainty that products being recorded as 60 minutes under the British Standard tests will achieve 60 minutes under the European tests, for example, some may be rated 45, some 60 and some 75. In the case of reaction to fire the situation is, if anything, worse as the British Standard tests for "spread of flame" and "non-combustibility" must be compared to a single new set of tests, which has seven classes (A1, A2, B, C, D, E, F).

4.8 In addition to resolving the technical problems related to equivalency between tests, the procedural problems related to having two alternative methods of satisfying the functional regulations must also be considered. It will be possible to offer alternative Deemed to Satisfy (DTS) prescriptions within the current structure of the regulations, but it is considered impossible to have alternative Technical Standards. Also, at present the periods of fire resistance and in some cases Classes for "spread of flame" or terms like "non-combustibility", are within the text of the Technical Standards themselves and will have to be removed.

4.9 Therefore there are two problems to resolve:

1. A technical one related to the equivalency between the existing and new harmonised tests, and
2. A procedural one related to having alternative methods of establishing levels of fire safety.

4.10 In solving the first problem of equivalency it will be desirable to ensure compatibility with the strategy adopted in England and Wales. Therefore it is intended to utilise the research projects which DETR have let to a consortium led by Warrington Fire Research Centre. This may not solve all the problems, but will provide much of what is needed for the Scottish Technical Standards. These projects began in June 1999 and should last one year.

4.11 To solve the second procedural problem it will be necessary to re-write Part D (and that section of Part E referring to the spread of flame standards), to move all reference to BS tests, test results and terminology from the Technical Standards themselves into the DTS. This is a major undertaking, but cannot be delayed and will have to be done in parallel with the work on equivalency. Work started in August with the first meeting of a BSAC working party and it is hoped to have a draft for public consultation in the spring of 2000.

4.12 As there has to be a fundamental re-writing of Part D, then the opportunity is also being taken to make the part more coherent by:

- a. introducing a performance / prescription split (this will be necessary anyway if the test classes are to be confined to the DTS);
- b. increasing options for designers; and
- c. expressing more clearly the intentions behind the standards.

4.13 However it has to be remembered that it is not the intention to change the levels of fire safety actually delivered by the standards, unless there is clear evidence of an existing problem.

4.14 As time is so short attention is being concentrated on Part D, and the proposal is that the issues of "spread of flame on linings" will simply be transferred from Part E to Part D. This will mean not having to consult on the more complex problems of means of escape, which can be left for subsequent amendments.

4.15 In re-writing Parts D (and E) it is helpful to consider fire safety in four tiers (as many other countries already do). These are:

1. Act This sets the objectives relating to public safety and health.
2. Regulations These set functional requirements.
3. Technical Standards These should set performance requirements
4. Deemed to satisfy These should provide prescriptive standards

4.16 At present Part D is the way of satisfying Regulation 12. There should be no need to modify Regulation 12.

4.17 The Technical Standards in Part D will be re-written in the form of performance standards, expressing clearly what the intention of the requirement is and setting the standard in terms of categories of fire resistance or grades of reaction to fire in relation to purpose groups. The use of the new terms categories and grades will provide a device to link it to two alternative DTSS. It must be stressed that at this stage categories and grades are just working terms and the final choice of words will be critical to ensuring that the new system is easily understood.

4.18 It will be necessary to have two distinct but equivalent DTSS. One repeating what is currently specified by reference to British Standards and linking these to the categories and grades. The other specifying by reference to the harmonised European tests linked to the categories and grades. This arrangement will also permit further options to be considered if they could be shown, by the applicant, to be offering an equivalent level of safety. Much of the work on the second DTS cannot be done until after the completion of the DETR projects. The public consultation for the new Part D will therefore only be

made on the first DTS and the Technical Standards. The second DTS should be a mechanical logical process once the preparation of the DETR projects are completed and establish the equivalent levels of the two sets of tests and standards.

4.19 Once the transition period is complete and all products have to be tested to the European harmonised tests then the first DTS would simply be withdrawn in the next convenient amendment.

5 CE MARKING OF GAS APPLIANCES

5.1 There has been some confusion recently regarding the installation of gas-fired appliances, particularly in timber framed houses. European legislation has now rendered some deemed to satisfy clauses inappropriate or out of date and the recently completed review of Part F by the Building Control Division of the Scottish Executive is not expected to be in force until next April. Until then, hopefully, this Building Regulation Note will help to clarify the confusion.

5.2 The CE marking with regard to safety of virtually all gas-fired appliances for sale in the UK is now compulsory under the Gas Appliance Directive (90/396/EEC). All such appliances therefore must comply with the 'Essential Requirements' listed in annex 1 of the Directive. The requirements of the directive are enforced through the Gas Appliance (Safety) Regulations 1995. The Essential Requirements are repeated in Schedule 3 of these Regulations.

5.3 Clauses 3.2 and 3.4 of Schedule 3 require appliances to be so designed and constructed that they do not leak dangerous gases or combustion products. Most appliances therefore are fitted with a vitiation device to prevent the release of gases such as carbon monoxide into the room.

5.4 Clause 3.6 of Schedule 3 requires that any part of an appliance in close proximity to combustible materials must not reach a temperature that will cause a danger. The test to which appliances are subjected to verify compliance is still in draft form (prEN 297 for type B appliances and prEN 483 for type C appliances) but is generally accepted as being suitable. Appliances for sale in the UK are already being manufactured to the European standard in anticipation of its early publication (expected in the Autumn). It is extremely unlikely that new appliances are now being tested to BS 5258 or BS 5386, called up in the deemed to satisfy clause (F5.11). The test standard in prEN 483 stipulates that the surface temperature of the panel to which the appliance is fixed shall not exceed the ambient temperature by more than 80° C. Where the temperature rise is between 60 - 80° C it is the responsibility of the manufacturer to specify if any protection/shielding is required. An appliance with a CE mark therefore should comply with Technical Standard F5.11 if, for example, it is fixed to a timber frame faced with plasterboard. However it is suggested that Building Control Officers obtain confirmation from the manufacturer or installer on this point if further clarification is required.

5.5. The CE mark is to advise that an appliance is suitable for sale in the UK and that it meets the minimum legal requirements covered by the relevant Directive. The Technical Standards may require the installation of the appliance and/or chimney to comply with additional requirements. It is the responsibility of the installer to provide the information necessary to convince the Building Control Officer that the installation complies with all relevant Technical Standards.

5.6. There are other Directives covering combustion appliances. Care should be taken when considering a warrant application that includes a CE marked appliance, that the CE mark is relevant to the Technical Standards. Oil-fired boilers, for instance, are not covered by the CPD but may well have a CE mark under the Boiler Efficiency Directive and/or the Low Voltage Directive.

6. FURTHER INFORMATION

6.1 The web site of the European Commission's Directorate General 3 dealing specifically with the Construction Products Directive contains some useful information on the Directive and related issues. The department is Directorate D - Industrial Affairs 2: Capital Goods Industries - Unit D/3: Construction.

[Web address titled 'CreatE' >>](#)

6.2 There is also a useful web site listing the progress of relevant CEN standards and provides cross-referencing and their current status. It will be difficult to keep up to date with the rapid pace of changes now emanating from Brussels.

[New Approach directives >>](#)

6.3 Further information on the format of European Standards may be obtained from Mr Martin Danvers of BSI, phone number (0131) 996 7753

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