

The Building Bye-laws (Jersey) 2007

TECHNICAL GUIDANCE DOCUMENT

PART 12 ELECTRICAL SAFETY

2007
EDITION

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Use of Guidance

THE TECHNICAL GUIDANCE DOCUMENTS

This document is one of a series that has been approved and issued by the Minister for Planning and Environment for the purpose of providing practical guidance with respect to the requirements of Schedule 2 and Bye-law 7 of the Building Byelaws (Jersey) 2007.

At the back of this document is a list of all the documents that have been approved and issued by the Planning and Environment Minister for this purpose.

Technical Guidance Documents are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the requirements. Thus there is no obligation to adopt any particular solution contained in a Technical Guidance Document if you prefer to meet the relevant requirement in some other way.

Other requirements

The guidance contained in a Technical Guidance Document relates only to the particular requirements of the Building Bye-laws which the document addresses. The building work will also have to comply with the requirements of any other relevant part in Schedule 2 to the Bye-laws.

There are Approved Technical Guidance Documents which give guidance on each of the Parts of Schedule 2 and on bye-law 7.

LIMITATION ON REQUIREMENTS

In accordance with bye-law 8, the requirements in Parts 1 to 7, 10 and 12 (except for requirements 3.6 and 6.2) of the Second Schedule to the Building Bye-laws do not require anything to be done except for the purposes of securing reasonable standards of health and safety for persons in or about buildings (and any others who may be affected by buildings or matters connected with buildings). This is one of the categories of purpose for which building bye-laws may be made. Requirements 3.6 and 6.2 are excluded from bye-law 8 because they deal directly with prevention of the contamination of water. Parts 8 and 9 (which deal, respectively, with access to and use of buildings and resistance to the passage of sound) are excluded from bye-law 8 because they address the welfare and convenience of building users. Part 11 is excluded from bye-law 8 because it addresses the conservation of fuel and power. All these matters are amongst the purposes, other than health and safety, that may be addressed by Building Bye-laws.

MATERIALS AND WORKMANSHIP

Any building work which is subject to the requirements imposed by Schedule 2 to the Building Bye-laws should, in accordance with bye-law 7, be carried out with proper materials and in a workmanlike manner.

You may show that you have complied with bye-law 7 in a number of ways. These include the appropriate use of a product bearing CE marking in accordance with the Construction Products Directive (89/106/EEC)¹ as amended by the CE marking Directive (93/68/EEC)², or a product complying with an appropriate technical specification (as defined in those Directives), a British Standard, or an alternative national technical specification of any state which is a contracting party to the European Economic Area which, in use, is equivalent, or a product covered by a national or European certificate issued by a European Technical Approval issuing body, and the conditions of use are in accordance with the terms of the certificate. You will find further guidance in the Technical Guidance Document supporting Bye-law 7 on materials and workmanship.

Independent certification schemes

There are many UK product certification schemes. Such schemes certify compliance with the requirements of a recognised document which is appropriate to the purpose for which the material is to be used. Materials which are not so certified may still conform to a relevant standard. Many certification bodies which approve such schemes are accredited by UKAS.

Technical specifications

Under Article 31 of the Planning and Building (Jersey) Law 2002, Building Bye-laws may be made for various purposes including health, safety, welfare, convenience, conservation of fuel and power and prevention of contamination of water. Standards and technical approvals are relevant guidance to the extent that they relate to these considerations. However, they may also address other aspects of performance such as serviceability, or aspects, which although they relate to the purposes listed above are not covered by the current Bye-laws. When an Approved Technical Guidance Document makes reference to a named standard, the relevant version of the standard is the one listed at the end of the publication. However, if this version has been revised or updated by the issuing standards body, the new version should be used as a source of guidance provided it continues to address the relevant requirements of the Bye-laws.

1. As implemented by the Construction Products Regulations 1991 (SI 1991/1620)

2. As implemented by the Construction Products (Amendment) Regulations 1994 (SI 1994/3051)

The appropriate use of a product which complies with a European Technical Approval as defined in the Construction Products Directive will meet the relevant requirements. The Department intends to issue periodic amendments to its Approved Technical Guidance Documents to reflect emerging harmonised European Standards. Where a national standard is to be replaced by a European harmonised standard, there will be a co-existence period during which either standard may be referred to. At the end of the co-existence period the national standard will be withdrawn.

MIXED USE DEVELOPMENT

In mixed use developments part of a building may be used as a dwelling while another part has a non-domestic use. In such cases, if the requirements of the Bye-laws for dwellings and non-domestic use differ, the requirements for non-domestic use should apply in any shared parts of the building.

The Requirements

This Technical Guidance Document, which takes effect on 1 July 2007 deals with the requirements of - Part 12 of Schedule 2 to the Building Bye-laws (Jersey) 2007.

FIXED ELECTRICAL INSTALLATIONS

Requirement

A fixed electrical installation in, or in respect of, a building must be designed, installed, inspected and tested so as to provide reasonable protection against the installation or any part of it being a source of a fire or a cause of injury to people in or about the building.

Section 1

Performance Requirement

1. In the Minister's view the requirements of Part 12 will be met by adherence to the "Fundamental Requirements for Safety" given in BS 7671: 2001 Chapter 13. To achieve these requirements installations need to be:-
 - 1.1. designed and installed to afford appropriate physical and electrical protection; and
 - 1.2. suitably inspected and tested to verify that they meet the relevant equipment and installation standards and they perform functionally as the designers intend.

Definitions

2. For the purposes of the Building Bye-laws "electrical installation" means fixed electrical cables or fixed electrical equipment in, or in respect of a building which is located on the consumer's side of the electricity supply meter.
3. Competent person means - A person who is registered as a competent electrical installation engineer with NAPIT registration Ltd, NICEIC Group Ltd or BRE Certification Ltd in respect of that type of work on the basis of holding a current certificate of competence issued by a third party certification body accredited by the United Kingdom Accreditation Service to EN ISO/IEC 17024 or EN 45013
4. Material alteration means – any work done to an existing electrical installation so that at any stage it could result in it no longer complying with Part 12 of the second schedule to the Building Bye-laws.
5. Extra-low Voltage means voltage normally not exceeding 50 Volts ac or 120 Volts ripple-free dc whether between conductors or to earth.
6. Low Voltage means voltage normally exceeding extra-low voltage but not exceeding 1000 Volts ac or 1500 Volts dc between conductors, or 600 Volts ac or 900 Volts dc between conductors and earth.

Work that need not be notified

The Building Bye-law requirements apply to any provision, extension or material alteration of a fixed electrical installation in, or in respect of a building and normally a certificate confirming that the work has been properly inspected and tested will need to be supplied to the Planning and Environment Department through the contractors registration body.

However, it is unnecessary to notify the Planning and Environment Department if the proposed work is minor electrical installation work as described in Table 1 and does not include the provision of a new circuit. A Minor Electrical Installation Works Certificate as or similar to the one in BS 7671 should however, be issued to the person ordering the work.

Table 1 Minor Electrical Installation Works that need not be notified

- (a) the provision of additional lighting points (light fittings and switching) on an existing circuit where –
 - (i) the existing circuit protective device is suitable and provides protection for the modified circuit, and
 - (ii) any other safety provisions are satisfactory;
- (b) the adding of socket outlets to an existing ring or radial circuit where –
 - (i) the existing circuit protective device is suitable and provides protection for the modified circuit, and
 - (ii) any other safety provisions are satisfactory;
- (c) the replacement of individual accessories including socket outlets, control switches, other than the circuit protective device, in a like-for-like manner for a single circuit;
- (d) the replacement of accessories such as socket outlets and ceiling roses on a like-for-like basis;
- (e) the installation or upgrading or both and testing of main equip-potential bonding;
- (f) the upgrading and testing of supplementary bonding;
- (g) the replacement of the cable for a single circuit but only where damaged (for example. by fire, rodent or impact) if the replacement cable –
 - (i) is identical in manufactured specification,
 - (ii) follows the same route, and
 - (iii) does not serve more than one sub-circuit through a distribution board;
- (h) the fixing or repairing or both of the enclosure of an existing wiring system if the circuit's protective measures are unaffected;
- (i) the provision of additional mechanical protection to existing electrical equipment if the circuit's protective measures and current-carrying capacity of conductors are unaffected.

Section 2

Design and installation

BS 7671 (including with appropriate barriers to touch and water penetration);

General

1. Installations should be designed and installed so that they are safe when functioning in their intended manner; they prevent dangerously excessive current flow, they prevent metalwork other than electrical conductors from becoming a shock risk and they prevent the persistence of dangerous earth leakage currents.
2. The electricity supply company should be consulted on proposals for new installations or significant alterations to existing ones.

5.1.3. not visibly damaged or defective so as to be unsafe.

6. Testing has been carried out to check satisfactory performance in relation to continuity of conductors, insulation resistance, separation of circuits, polarity, earth electrode resistance, earth fault loop impedance and functionality of all devices including residual current devices.

7. Section 712 in BS 7671 provides a list of all the inspections that may be necessary although in particular cases only some elements may be relevant. An inspection schedule for the recording of inspections is given in Appendix 6 of BS 7671. Tests should be carried out using appropriate instruments under the conditions given in BS 7671. Other similar checklists of results having the same basis in BS 7671 would also be acceptable.

New installation work

3. A way of meeting the requirements when providing electrical services would be to follow the guidance in BS 7671 or in one of the publications which draw their guidance from the BS such as:-

- 3.1 The IET On-Site Guide;
- 3.2 The series of IEE Publications: Guidance Notes Nos. 1 to 8;
- 3.3 Other publications giving technical advice achieving an equivalent degree of safety.

8. Section 713 in BS 7671 provides a list of all the tests that may be necessary although in particular cases only some elements may be relevant. A blank test results schedule is given in Appendix 6 of BS 7671. Other forms enabling the same information to be recorded would be also be acceptable.

9. A model electrical installation certificate is given in BS 7671 (2001) which enables competent individuals to record information about installation work and to certify that the work they are responsible for is in accordance with BS 7671. Completed certification in this system comprises the electrical installation certificate, the single signatory form and the test results schedule described in paragraph 8 above.

Inspection and testing before taking into service

4. Installations should be inspected and tested during and at the end of installation before they are taken into service to verify that they are acceptably safe; that is to say that they comply with the relevant technical guidance in BS 7671.

5. A way of demonstrating this compliance would be to follow the procedures in Chapter 74 in BS 7671 and to complete and keep copies of the forms and certificates it calls for signed by a competent person. Such forms should show that for each electrical installation:-

- 5.1 Inspection has been carried out (this may be necessary during construction as well as on completion) to verify that the components are:-

- 5.1.1. made in compliance with appropriate British Standards or Harmonised European Norms;

- 5.1.2. selected and installed in accordance with the relevant technical guidance in

Section 3

Material Alterations

1. Where any work is classified as a material alteration, the alteration and extension work must include such works on the existing fixed electrical installations in the building as are necessary to enable the alterations, the circuits which feed them, the correct protective measures, the mains supply equipment and the relevant earthing systems to meet the requirements. A way of demonstrating compliance would be to follow the guidance given above in relation to design and installation and to show that for the altered circumstances:-
 - 1.1 the rating and the condition of the existing equipment belonging to both the consumer and to the electricity supply company:-
 - (a) can carry the additional or different loads being allowed for, or
 - (b) are improved so that they can carry the additional or different loads being allowed for; and
 - 1.2 the correct protective measures are used; and that
 - 1.3 the earthing arrangements and equipotential bonding are satisfactory.

List of Technical Guidance Documents currently approved for the purposes of showing compliance with the Building Bye-laws.

Planning and Environment Department
Technical Guidance Document: Bye-law 7:1997.
Materials and Workmanship.

Planning and Environment Department
Technical Guidance Document Part 1:
1997. Structure.

Approved Document B:
Fire Safety 2000 Edition published by the DETR

Approved Document J:
Combustion appliances and fuel storage systems.
2002 Edition published by the DTLR.

Planning and Environment Department
Technical Guidance Document Part 4:
1997 Site Preparation and Resistance to Moisture.

Planning and Environment Department
Technical Guidance Document Part 5:
1997. Ventilation.

Planning and Environment Department
Technical Guidance Document Part 6:
1997- Sections 5 to 8 only.
Hygiene and Water Storage.

Approved Document H.
Drainage and Waste Disposal. 2002 Edition
published by the DTLR.

Planning and Environment Department
Technical Guidance Document Part 7:
1997. Stairs, Ramps and Protective Barriers.

Planning and Environment Department
Technical Guidance Document Part 8:
2007 Edition. Access to, and Use of Buildings.

Approved Document E.
Resistance to the Passage of Sound.
2003 Edition published by the ODPM.

Planning and Environment Department
Technical Guidance Document Part 10:
1997. Glazing – Safety and Protection.

Approved Document L1.
Conservation of Fuel and Power. 2002 Edition
published by the DTLR.

Approved Document L2.
Conservation of Fuel and Power. 2002 Edition
published by the DTLR.

Planning and Environment Department
Technical Guidance Document Part 12:
2007 Edition. Electrical Safety.

