

## The New Zealand Building Code Handbook

Prepared by the Building Industry Authority  
This Approved Document is prepared by the Building Industry Authority, which is a statutory body established by the Building Act 1991.



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Amendment 8	24 April 2003	pp. 20, 23, 25-26 References pp. 102, 135 Index	p. 194 Code Clauses
Amendment 9	1 April 2004	pp. 13-28 References p. 41 Definitions pp. 71-71a Compliance Schedules p. 79 List of Approved Documents	pp. 82, 86-89, 93, 96, 105-6 pp. 109, 113, 119, 123, 125 pp. 129-131, 135-6 pp. 139-148 Index

**Note:**

Page numbers relate to the document at the time of Amendment and may not match page numbers in current document.

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# Preface

## 1.0 Introduction

**1.0.1** This preface is provided only as a convenient user reference. It gives simple answers to questions frequently asked about the building code and associated legislation. Legal interpretation must however, be based on the actual wording of the Act and Regulations themselves.

### 1.1 The Act

**1.1.1** The Building Act 1991 establishes a national, uniform, building control system which covers:

- Act s.5 • All buildings including Crown buildings, except for certain defence works.
- Act s.3 • All components of each building including plumbing, electrical and mechanical installations.

**1.1.2** The Act applies to:

- Building construction, including alteration and demolition.
- Maintenance of building systems or features such as lifts and fire protection installations.

**1.1.3** The Act does not cover:

- Planning and resource management, and other aspects of a building's relationship to the surrounding neighbourhood.
- Occupational safety and health, and other aspects of managing people.

Act s.6 **1.1.4** The building control system regulates only those matters essential for ensuring that buildings perform in a way which:

- Safeguards people from injury and illness.
- Safeguards people, particularly those with disabilities, from loss of amenity.
- Protects other property from damage.
- Facilitates efficient use of energy.

**1.1.5** The controls do not provide for regulatory intervention in the owner's choice on other matters such as aesthetics or non-essential building features provided solely for the comfort or convenience of users. Nor do they protect an owner's economic interests in

terms of ensuring value for money, or through losses due to lack of care or competence.

**1.1.6** No person shall be required to achieve performance criteria additional to or more restrictive than those specified in the building code, except as may be provided for in any other Act. Act s.7

## 1.2 The New Zealand Building Code

**1.2.1** The New Zealand Building Code (NZBC) is a schedule to the Regulations authorised by the Act. It contains the mandatory provisions for meeting the purposes of the Act, and is performance-based. That means it says only what is to be done, not how to do it. Act s.48

## 1.3 The Building Industry Authority

**1.3.1** The Building Industry Authority (BIA) is a Crown agency established under the Act as the sole regulatory authority for building controls in New Zealand. Act s.10

## 1.4 Territorial authorities

**1.4.1** Territorial authorities are responsible within their districts for the day-to-day administration of the building control legislation. Act s.24

## 2.0 Special Terms

### 2.1 Building certifier

**2.1.1** A building certifier is a person approved by the Building Industry Authority to issue building certificates with respect to specific provisions of the New Zealand Building Code. A building certifier may be employed by a building owner as an alternative to using the territorial authority for checking technical proposals and performing inspections. Act Part VII

### 2.2 Building certificate

**2.2.1** A building certificate is a formal confirmation by a building certifier that specific aspects of a building comply with the New Zealand Building Code. A territorial authority is obliged to accept such a certificate. Act s.50(1)(a)

## 2.3 Project information memorandum

Act s.30 **2.3.1** A territorial authority is required, either on request or when a building consent is issued, to provide the owner with a project information memorandum. The memorandum shall contain all information known to the territorial authority about physical site conditions, and requirements under any legislation, which could be of relevance to an owner initiating a building project.

**2.3.2** This requirement is intended to avoid an owner being committed to expensive redesign costs on a project as a result of not being supplied with details of requirements in advance of doing the work.

## 2.4 Building consent

Act s.32 **2.4.1** The building consent is the formal authorisation by the territorial authority that proposed building work may proceed. The consent may contain conditions, and will confirm inspection requirements necessary to ensure that the finished work complies with the New Zealand Building Code.

## 2.5 Waivers and modifications

Act s.34(4) **2.5.1** A territorial authority may grant waivers and modifications to provisions of the New Zealand Building Code.

Act s.47 **2.5.2** In doing so, the territorial authority must have due regard to matters described in section 47 of the Act. These include the physical characteristics of the building, its location, use and intended life, and any special historical, cultural or traditional considerations. The Building Industry Authority must be notified of any waivers or modifications approved by a territorial authority.

**2.5.3** Waivers and modifications to New Zealand Building Code provisions, are not to be confused with site changes to a design or variations to an acceptable solution, which still comply with the New Zealand Building Code. In effect such changes are an alternative solution and may be authorised at any time by a building certifier or territorial authority.

## 2.6 Accreditation certificate

**2.6.1** The Building Industry Authority may issue an accreditation certificate for materials, components and construction methods used in building. Accreditations may be based on an assessment of appraisals given by recognised independent specialists, or on type endorsements confirming that a particular material, component or construction method conforms with one already acceptable under the New Zealand Building Code.

Act  
Part VIII

**2.6.2** Any materials or methods for which the Building Industry Authority has issued an accreditation certificate must be accepted by a territorial authority or building certifier as satisfying relevant New Zealand Building Code provisions.

Act  
s.50(1)(c)

## 2.7 Determination

**2.7.1** A determination is a decision by the Building Industry Authority on whether a material, component or method complies with the New Zealand Building Code.

Act  
s.17(2)

**2.7.2** An application for a determination is made to resolve a disagreement between a building owner and a territorial authority or building certifier. A determination applies only to a particular building and is binding on all parties concerned.

**2.7.3** The Building Industry Authority will publish those determinations of significance, as a guide to future decisions by territorial authorities and building certifiers.

## 2.8 Notice to rectify

**2.8.1** A territorial authority may issue to the owner or owner's agent a notice to rectify, requiring any building work not complying with the Act or New Zealand Building Code to be rectified.

Act s.42

## 2.9 Code compliance certificate

Act s.43 **2.9.1** A territorial authority or building certifier will, on the satisfactory completion of building work, issue a code compliance certificate indicating that all necessary provisions of the New Zealand Building Code have been satisfied.

**2.9.2** Separate code compliance certificates may be issued for different parts of staged building construction.

## 2.10 Compliance schedule

Act s.44 **2.10.1** A compliance schedule specifies inspection, maintenance and reporting procedures for systems whose continued operation is essential for ongoing New Zealand Building Code compliance.

**2.10.2** Such systems include automatic fire protection equipment, lifts, signs, emergency lighting and ventilation plant.

## 2.11 Building warrant of fitness

Act s.45 **2.11.1** An annual building warrant of fitness is a building owner's confirmation that essential features of the building, as listed in the compliance schedule, have been properly maintained.

## 3.0 Means of Code Compliance

### 3.1 Owner's choice

**3.1.1** An owner is free to use any materials, components or construction methods which comply with relevant performance criteria of the New Zealand Building Code. The absence of prescriptive requirements is expected to encourage innovation and the use of new technology.

**3.1.2** For those people who prefer specific guidance, Approved Documents issued by the Building Industry Authority provide detailed methods for establishing New Zealand Building Code compliance.

## 3.2 Approved Documents

**3.2.1** Approved Documents authorised under the Act, contain acceptable solutions and verification methods. Act s.49

**3.2.2** A territorial authority or building certifier must accept that compliance with an Approved Document is a means of establishing compliance with those provisions of the New Zealand Building Code to which that document refers. Act s.50(1)(d)

## 3.3 Acceptable solutions

**3.3.1** Acceptable solutions given in Approved Documents are examples of materials, components and construction methods which, if used, will result in compliance with the New Zealand Building Code. They serve also as guidelines for alternative solutions.

## 3.4 Alternative solutions

**3.4.1** There is no obligation to adopt any particular solution. Materials, components and construction methods which differ in whole or in part from those described in Approved Documents may be used, if they comply with the New Zealand Building Code. The owner may be required to demonstrate that any such method does in fact comply, when seeking a consent from the territorial authority under section 33 of the Act, or a determination from the Building Industry Authority under section 17 of the Act. Act s.33 Act s.17

## 3.5 Verification methods

**3.5.1** New Zealand Building Code compliance of an alternative solution may be verified by any of the following methods:

- a) Calculations – using recognised analytical methods and mathematical models.
- b) Laboratory tests – using tests (sometimes to destruction) on prototype components and systems.
- c) Tests in-situ – which may involve examination of plans and verification by inspection, where compliance with specified numbers (e.g. fittings), dimensions or locations is required. Non-destructive tests (e.g. pipe pressure tests), are also included.

**3.5.2** Where specific test methods are known, and practicable, they are listed in Approved Documents.

### 3.6 Producer statements

Act s.33(5) **3.6.1** A territorial authority may, at its discretion, accept a producer statement establishing compliance with the New Zealand Building Code.

Act s.56(2) **3.6.2** A building certifier may also accept a producer statement if satisfied on reasonable grounds that the product or design complies with the New Zealand Building Code.

**3.6.3** The acceptance of a producer statement does not absolve the territorial authority or building certifier from responsibility.

### 3.7 Status of other publications

Act s.49(5) **3.7.1** Publications issued by organisations other than the Building Industry Authority are referred to in Approved Documents. Those publications (subject to any stated deletions or modifications), are methods of compliance with the New Zealand Building Code, to the extent that they relate to provisions specifically stated in the purpose of each New Zealand Building Code clause.

**3.7.2** It should be noted in using reference publications that:

- a) Provisions in the reference may exceed New Zealand Building Code provisions.
- b) For purposes of the New Zealand Building Code, reference content may be separated into two parts comprising either verification methods or acceptable solutions.
- Act s.49(3)(a) c) Content on good practice, while being desirable is not essential for satisfying New Zealand Building Code performance.
- Act s.49(3)(b) d) Approvals, waivers and modifications under the New Zealand Building Code may be granted only by the territorial authority, or the Building Industry Authority as the outcome of a referral. This does not preclude the site supervisor making (within the limits of his/her technical competence) minor practical construction changes to facilitate New Zealand Building Code compliance.

e) As it is the responsibility of building owners or their agents to demonstrate that alternative solutions comply with the New Zealand Building Code, phrases such as "to the approval of the engineer", used in referenced publications, are not applicable to the New Zealand Building Code.

**3.7.3** Referenced publications are:

- specific to the dated edition quoted, and include any amendments issued prior to the date shown at the foot of the page on which they are listed, or
- include only the quoted edition and specific amendments as listed in each Approved Document.

Amend 6  
Jul 2001

## 4.0 Interpretation

### 4.1 Building Code

**4.1.1** This schedule to the Building Regulations 1992 is divided under eight main categories into a total of 37 clauses of which the first two are general provisions, and the remainder specifically applicable to different aspects of building construction.

Amend 1  
Dec 1993

**4.1.2** Clause references are identified by letters and numerals, with the letter indicating the category.

**4.1.3** First order numerals (either 1, 2 or 3) indicate primary subdivisions of each clause where:

- 1 is the **Objective**
- 2 is the **Functional Requirement**
- 3 is the **Performance**

**4.1.4** Second order numerals identify a specific **Functional Requirement** or **Performance**.

For example in Clause F4.3.2:

- F indicates the main category "**Safety of Users**".
- 4 indicates specific application to "**Safety from falling**".
  - 3 indicates a **Performance**.
  - 2 indicates the second performance of the Clause.



Amend 6  
Jul 2001

**4.1.5** Throughout the New Zealand Building Code and Approved Documents, except in headings, defined words are indicated by italics.

**4.1.6** Defined words of the New Zealand Building Code are listed in Clause A2. Approved Documents each contain a list of definitions relevant to the document. A full list of definitions is contained in this Handbook.

**4.1.7** Where an **Objective, Functional Requirement** or **Performance** has limited application, the exceptions are identified immediately beside the Clause to which they refer.

## 4.2 Approved Documents

**4.2.1** Approved Documents may contain acceptable solutions and verification methods. In cases where a verification method or acceptable solution has not been adopted, this is stated. Over time additional verification methods and acceptable solutions may be issued by the Building Industry Authority.

**4.2.2** Each acceptable solution and verification method is identified according to topic and whether it is an acceptable solution or verification method at the top of each page.

For example:

Amend 6  
Jul 2001

E1/MM1 Indicates that the topic is E1 "Surface Water", and the document is verification method number 1.

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Jul 2001

G13/AS2 Indicates that the topic is G13 "Foul Water", and the document is acceptable solution number 2.

**4.2.3** Approved Documents each include copies of the appropriate New Zealand Building Code Clause and a list of references and definitions relevant to the document, but do not contain explanations of classified uses. These apply to all Approved Documents and are available separately in Clause A1 and the New Zealand Building Code, reproduced in this Handbook.

## 4.2.4 Advisory comment

Where Approved Documents contain information that is general advice, such comments are identified and in shaded smaller print immediately following the paragraph to which they refer.

Amend 6  
Jul 2001



# Publications Referenced in Handbook and Approved Documents

(Revised by Amendment 6)

For the purposes of New Zealand Building Code compliance, acceptable reference documents include only the quoted edition and specific amendments as listed below. Dates in brackets indicate that the Standard was reviewed and reissued without change that year.

Approved Documents in which the particular references are quoted are identified by the relevant New Zealand Building Code Clause and the number of the verification method or acceptable solution.

For example: **B1/VM1/AS3** indicates that the reference occurs in Verification Method 1, and Acceptable Solution 3 of the Approved Document for Clause B1 Structure.

Where references are quoted in the Handbook, these are identified by the letters HB and the relevant section. For example: HB/CS 3 indicates that the reference occurs in compliance schedule CS 3 in the Handbook.

Places where the reference documents are quoted, are more specifically identified by paragraph or table, in the reference list contained in each Approved Document.

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## Standards New Zealand

	<b>Where quoted</b>
NZS/BS 21: 1985 Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions)	<b>G10/AS1, G14/VM1</b>
NZS/BS 143, and BS 1256: 1993 Specification for malleable cast iron and cast copper alloy threaded pipe fittings <i>Amend: 1, 2, 3</i>	<b>G10/AS1, G14/VM1</b>
NZS 202: 1966 Specification for steel pipes and joints for hydraulic purposes	<b>G14/VM1</b>
NZS 380: 1968 Specification for flameproof electric lighting fittings	<b>F6/AS1</b>

	<b>Where quoted</b>	
NZS/BS 476:- Part 20: 1987	Fire tests on building materials and structures Method for determination of the fire resistance of elements of construction (general principles) <i>Amend: 6487</i>	<b>C/AS1</b> <b>C/AS1</b>
Part 21: 1987	Methods for determination of the fire resistance of loadbearing elements of construction	<b>C/AS1</b>
Part 22: 1987	Methods for determination of the fire resistance of non-loadbearing elements of construction	<b>C/AS1</b>
NZS/BS 970:- Part 1: 1991	Specification for wrought steels for mechanical and allied engineering purposes General inspection and testing procedures and specific requirements for carbon, carbon manganese, alloy and stainless steels	<b>E1/AS1</b>
NZS/BS 1387: 1985 (1990)	Specification for screwed and socketed steel tubes and tubulars and for plain end steel tubes suitable for welding or screwing to BS 21 pipe threads	<b>G10/AS1, G12/AS1, G14/VM1</b>
NZS/AS 1397: 1993	Steel sheet and strip – hot-dipped zinc-coated or aluminium/zinc coated. (This Standard is an acceptable alternative to NZS 3441: 1978.)	<b>E2/AS1</b>
NZS/BS 1560:- Part 3:- Section 3.1: 1989	Circular flanges for pipes, valves and fittings (class designated) Steel, cast iron and copper alloy flanges Specification for steel flanges	<b>E1/AS1, G10/AS1, G14/VM1</b> <b>G10/AS1</b>
Section 3.2: 1989	Specification for cast iron flanges	<b>G10/AS1</b>
NZS/AS 1650: 1989	Hot-dipped galvanised coatings on ferrous articles	<b>B1/AS2/AS3</b>
NZS/AS 1657: 1992	Fixed platforms, walkways, stairways and ladders – Design, construction and installation (known as the SAA Code for fixed platforms, walkways, stairways, and ladders)	<b>D1/AS1</b>
NZS/BS 1740:- Part 1: 1971 (1990)	Specification for wrought steel pipe fittings (screwed BS 21 – R series thread) Metric units <i>Amend: 1, 2, 3</i>	<b>G10/AS1, G14/VM1</b>
NZS 1900:- Ch 11: 1985 Division 11.2	Model building bylaw Special structures Farm buildings <i>Amend: 1</i>	<b>B1/VM1</b>
NZS/AS 2033: 1980	Installation of polyethylene pipe systems	<b>E1/AS1, G14/VM1</b>
NZS 2295: 1988	Building papers (breather type) <i>Amend: A</i>	<b>E2/AS1</b>

	Where quoted
NZS/BS 2494: 1990 Specification for elastomeric seals for joints in pipework and pipelines	<b>E1/AS1,</b> <b>G13/AS1/AS2,</b> <b>G14/VM1</b>
NZS/BS 2654: 1989 Specification for manufacture of vertical steel welded non-refrigerated storage tanks with butt-welded shells for the petroleum industry	<b>G14/VM1</b>
NZS 2908:- Part 1: 1992 Cellulose-cement products Corrugated sheets	<b>E2/AS1</b>
NZS/BS 2971: 1991 Specification for Class II arc welding of carbon steel pipework for carrying fluids	<b>G10/AS1, G14/VM1</b>
NZS 3101:- Part 1: 1995 Concrete structures standard The design of concrete structures	<b>B1/VM1, B2/AS1</b>
NZS 3106: 1986 Code of practice for concrete structures for the storage of liquids <i>Amend: 1, 2</i>	<b>B1/VM1, G14/VM1</b>
NZS 3107: 1978 Specification for precast concrete drainage and pressure pipes	<b>B1/VM1, E1/AS1,</b> <b>G13/AS2, G14/VM1</b>
NZS 3109: 1997 Specification for concrete construction	<b>B1/AS3</b>
NZS 3112:- Part 2: 1986 Methods of test for concrete Tests relating to the determination of strength of concrete <i>Amend: 1</i>	<b>B1/AS3</b>
NZS 3114: 1987 Specification for concrete surface finishes <i>Amend: 1</i>	<b>D1/AS1, G15/AS1</b>
NZS 3116: 1991 Interlocking concrete block paving	<b>D1/AS1</b>
NZS 3124: 1987 Specification for concrete construction for minor works	<b>E1/AS1</b>
NZS 3302: 1983 Specification for ceramic pipes, fittings and joints	<b>E1/AS1, G14/VM1</b>
NZS 3331: 1972 Specification for quality of vitreous china sanitary appliances	<b>G1/AS1</b>
NZS 3402: 1989 Steel bars for the reinforcement of concrete	<b>B1/AS3</b>
NZS 3403: 1978 Specification for hot-dip galvanized corrugated steel sheet for building purposes	<b>E2/AS1</b>
NZS 3404:- Part 1: 1997 Steel structures standard Steel structures standard	<b>B1/VM1</b>
NZS 3421: 1975 Specification for hard drawn mild steel wire for concrete reinforcement	<b>B1/AS3</b>
NZS 3422: 1975 Specification for welded fabric of drawn steel wire for concrete reinforcement	<b>B1/AS3</b>

NZS 3441: 1978	Specification for hot-dipped zinc-coated steel coil and cut lengths <i>Amend: 1, 2</i> (See also NZS/AS 1397: 1993)	<b>Where quoted</b> <b>B1/AS2/AS3,</b> <b>E1/AS1</b>
NZS 3501: 1976	Specification for copper tubes for water, gas, and sanitation	<b>G10/AS1, G12/AS1</b>
NZS 3502: 1976	Specification for copper and copper alloy tubes for general engineering purposes	<b>G10/AS1</b>
NZS 3601: 1973	Metric dimensions for timber <i>Amend: 1, 2</i>	<b>B1/AS2</b>
NZS/BS 3601: 1987 (1993)	Specification for carbon steel pipes and tubes with specified room temperature properties for pressure purposes <i>Amend: 1, 2</i>	<b>G10/AS1, G14/VM1</b>
NZS 3602:-		
Part 1: 1995	Timber and wood-based products for use in building	<b>B2/AS1</b>
Part 1: 2003	Timber and wood-based products for use in building	<b>B2/AS1</b>
NZS 3603: 1993	Timber structures standard <i>Amend: 1, 2</i>	<b>B1/VM1/VM4</b>
NZS 3604: 1999	Timber framed buildings <i>Amend: 1</i>	<b>B1/AS1/AS2/AS3,</b> <b>B2/AS1, E1/AS1,</b> <b>E2/VM1/AS1,</b> <b>G13/AS2</b>
NZS 3605: 1992	Specification for timber piles and poles for use in building	<b>B1/VM4</b>
NZS 3617: 1979	Specification for profiles of weatherboards, fascia boards, and flooring	<b>E2/AS1</b>
NZS 3631: 1988	New Zealand timber grading rules	<b>B1/AS2</b>
NZMP 3640: 1992	Specification of the minimum requirements of the NZ Timber Preservation Council Inc. <i>Amend: 1</i>	<b>B1/AS2/VM4,</b> <b>E2/AS1</b>
NZS/AS 3725: 1989	Loads on buried concrete pipes	<b>B1/VM1</b>
NZS 4121: 2001	Design for access and mobility – Buildings and associated facilities	<b>D1/AS1, G1/AS1,</b> <b>G5/AS1</b>
NZS 4203: 1984	Code of practice for general structural design and design loadings for buildings <i>Amend: 1</i>	<b>B1/VM1, G10/AS1</b>
NZS 4203: 1992	Code of practice for general structural design and design loadings for buildings <i>Corrigendum: 1</i>	<b>B1/VM1/VM4, C/AS1,</b> <b>E2/VM1/AS1</b>
NZS 4206: 1992	Concrete interlocking roofing tiles	<b>E2/AS1</b>
NZS 4210: 1989	Code of practice for masonry construction: materials and workmanship <i>Amend: 1, 2</i>	<b>B1/AS3, E2/AS1</b>

Amend 9  
Apr 2004

		Where quoted
NZS 4211: 1985	Specification for performance of windows <i>Amend: 1, 2, 3</i>	<b>B1/VM1, E2/AS1</b>
NZS 4214: 1977	Methods of determining the total thermal resistance of parts of buildings	<b>E3/AS1, G5/AS1, H1/VM1/AS1</b>
NZS 4217:-	Pressed metal tile roofs	
Part 1: 1980	Specification for roofing tiles and their accessories	<b>E2/AS1</b>
Part 2: 1980	Code of practice for preparation of the structure and the laying and fixing of metal roofing tiles	<b>E2/AS1</b>
NZS 4218: 1996	Energy efficiency – housing and small building envelope	<b>H1/VM1/AS1</b>
NZS 4219: 1983	Specification for seismic resistance of engineering systems in buildings <i>Amend: 1, 2</i>	<b>B1/VM1, G10/AS1, G14/VM1</b>
NZS 4223:-	Code of practice for glazing in buildings	
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Part 3: 1999	Human impact safety requirements	<b>B1/AS1, F2/AS1</b>
NZS 4229: 1999	Concrete masonry buildings not requiring specific engineering design <i>Amend: 1</i>	<b>B1/AS1/AS3, E1/AS1, G13/AS2</b>
NZS 4230:-	Code of practice for the design of masonry structures	
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NZS 4231: 1985	Specification for self-luminous exit signs <i>Amend: A</i>	<b>F8/AS1</b>
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Part 1: 1988	Internal and external fire doorsets	<b>F3/AS1, HB/CS 2</b>
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NZS 4243: 1996	Energy efficiency – large buildings	<b>H1/VM1/AS1</b>
NZS 4251:-	Solid plastering	
Part 1: 1998	Cement plaster for walls, ceilings and soffits	<b>B1/AS1, B2/AS1, E2/AS1</b>
NZS 4297: 1998	Engineering design for earth buildings	<b>B1/VM1, B2/AS1</b>
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Part 3:-	Steel, cast iron and copper alloy flanges	
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NZS 4515: 1995	Fire sprinkler systems for residential occupancies <i>Amend: 1, 2</i>	<b>C/AS1, F7/AS1, HB/CS 1</b>
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AS 4276:-

Amend 9  
Apr 2004

Part 3.1: 1995 Water plate microbiology – Pour plate method using plate count agar

**HB/CS 9**

AS/NZS 4284: 1995 Testing of building facades

**E2/VM1**

AS/NZS 4401(Int): 1999 High density polyethylene (PE-HD) pipes and fittings for soil and waste discharge (low and high temperature) systems inside buildings

**G13/AS1**

AS/NZS 4600: 1996 Cold-formed steel structures

**B1/VM1**

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### Building Control Commission, State of Victoria, Australia

Smoke management in large spaces in buildings: 1998  
Milke and Klote

**C/AS1**

## Australia/NZ Publications

### Australian and New Zealand Environment and Conservation Council

Guidelines for assessment and management of contaminated sites: 1992

**F1/VM1**

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### Building Research Establishment (UK)

BRE Defect action sheet DAS 131: May 1989

External walls: Combustible external plastics insulation:  
Horizontal fire barriers

**C/AS1**

BRE Report 135: 1988

Fire performance of external thermal insulation for walls in multi-storey buildings. Rogowski B.F., Ramaprasad R., Southern J.R.

**C/AS1**

BRE Report 186: 1990

Design principles for smoke ventilation in enclosed shopping centres.  
Morgan and Gardner

**C/AS1**

BRE Report 258: 1992

Design approaches for smoke control in atrium buildings.  
Hansell and Morgan

**C/AS1**

## Chartered Institution of Building Services Engineers, London

CIBSE Code Series A: 1971 The commissioning of air distribution systems, high and low velocity

## Miscellaneous Publication

Gas Service Technology

Volume 1 Basic science and practice of gas service  
Ed. George Jasper. London. Published by Benn  
Technical Books for the British Gas Corporation: 1978

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### The European Committee for Standardisation

EN 81:- Safety rules for the construction and installation of lifts

Part 1: 1998 Electric lifts

Part 2: 1998 Hydraulic lifts

EN 115: 1983 Safety rules for the construction of escalators and passenger conveyors

EN 12380: 1999 Air admittance valves for drainage systems  
– Requirements and test methods

Eurocode DD ENV 1991-2-2: 1996

Eurocode 1: Basis of design actions on structures

Part 2.2: Actions on structures exposed to fire

### International Standards Organisation, Geneva

ISO 140/VII: 1978 Field measurements of impact sound insulation of floors

ISO 834: 1975 Fire resistance tests – elements of building construction

ISO 3008: 1976 Fire resistance tests – door and shutter assemblies

ISO 3009: 1976 Fire resistance tests – glazed elements

### Underwriters Laboratories Inc

UL 217: 1997 Single and multiple station smoke alarms

### Underwriters' Laboratories of Canada

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### World Health Organisation/Food and Agriculture Organisation

Environmental Health Criteria 70

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Evaluation of certain food additives and contaminants, Technical report series 776 Geneva: 1989

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C/AS1

C/AS1

F7/AS1

F7/AS1

F1/VM1

F1/VM1

F1/VM1

F1/VM1

Amend 7  
Jan 2002

Amend 8  
Apr 2003

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**Building Research Association of New Zealand**

BRANZ Bulletin 330: 1995 Thin flooring materials – 2. Preparation and laying. Appendix 1	<b>E2/AS1</b>
BRANZ House Insulation Guide: 1995	<b>E3/AS1, H1/VM1/AS1</b>
BRANZ Paper C1: 1978 A construction guide to home insulation (second edition)	<b>E3/AS1</b>
BRANZ Technical paper P36: 1983 Food processing floors, a guide to design, materials and construction. W.R. Sharman	<b>G3/AS1</b>
ALF Manual: 1990 Annual loss factor design manual. An aid to thermal design of buildings. M.R. Bassett, R.C. Bishop and I.S. van der Werff	<b>H1/VM1/Defs</b>

**Government Departments and Agencies**

**Department of Labour**

Workplace exposure standards and biological indices for New Zealand: 1992	<b>F1/VM1, G4/VM1</b>
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**Ministry of Agriculture and Fisheries**

MQ 1: 1988 Qual approvals manual	<b>G3/AS1</b>
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**Ministry of Commerce**

ECP 1: 1993 New Zealand electrical code of practice for electrical installations – caravans and caravan parks	<b>G9/VM1</b>
ECP 2: 1993 New Zealand electrical code of practice for electrical installations in damp situations	<b>G9/VM1</b>
ECP 3: 1993 New Zealand electrical code of practice for electrical safety of apparatus and material	<b>G9/VM1</b>
ECP 4: 1993 New Zealand electrical code of practice for electrical installations – supply and generating systems not exceeding low voltage	<b>G9/VM1</b>
ECP 5: 1993 New Zealand electrical code of practice for electrical installations – cold cathode discharge lighting	<b>G9/VM1</b>
ECP 7: 1993 New Zealand electrical code of practice for extra-low voltage installations	<b>G9/VM1</b>
ECP 11: 1993 New Zealand electrical code of practice for inspection and testing of low voltage installations for certification purposes	<b>G9/VM1</b>

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ECP 12: 1993	New Zealand electrical code of practice for electrical installations – the safe use of electricity in medical locations and associated areas	<b>G9/VM1</b>
ECP 19: 1994	New Zealand electrical code of practice for determination of maximum demand in electrical installations	<b>G9/VM1</b>
ECP 21.2: 1993	New Zealand electrical code of practice for electric security fences	<b>G9/VM1</b>
ECP 24: 1993	New Zealand electrical code of practice for the safety of electricity in a hazardous area	<b>G9/VM1</b>
ECP 28: 1993	New Zealand electrical code of practice for selection and installation of cables	<b>G9/VM1</b>
ECP 29: 1993	New Zealand electrical code of practice for electrical installations of boat marinas and pleasure vessels	<b>G9/VM1</b>
ECP 33: 1993	New Zealand electrical code of practice for electrical installations of mineral insulated cables and equipment	<b>G9/VM1</b>
ECP 34: 1993	New Zealand electrical code of practice for electrical safety distances	<b>G9/VM1</b>
ECP 35: 1993	New Zealand electrical code of practice for power systems earthing	<b>G9/VM1</b>
ECP 36: 1993	New Zealand electrical code of practice for harmonic levels	<b>G9/VM1</b>
ECP 41: 1993	New Zealand electrical code of practice for single wire earth return systems	<b>G9/VM1</b>
ECP 50: 1993	New Zealand electrical code of practice for repair of domestic electrical equipment	<b>G9/AS1</b>
ECP 51: 1993	New Zealand electrical code of practice for electrical wiring work in domestic premises	<b>G9/AS1</b>
Amend 9 Apr 2004   NZECP 54: 2001	Code of practice for the installation of recessed luminaries and auxiliary equipment	<b>C/AS1</b>
<b>Ministry of Transport</b>		
	Power Lift Rules: 1989	<b>D2/AS1/AS2, HB/CS 8/1</b>
	Rules for power lifts not exceeding 750 watts (one horsepower): 1985	<b>D2/AS2, HB/CS 8/2</b>
<b>New Zealand Forest Research Institute</b>		
	Measurement of moisture content of assembled timber framing: 1993	<b>E2/AS1</b>

**New Zealand Meteorological Service**

Average degree-day tables – selected NZ stations. (Miscellaneous publication 159, 1978)

**COMMENT:**

This publication is no longer available, but the relevant information is summarised in the Degree-days data sheets of the BRANZ ALF Manual.

**Transit NZ**

Bridge manual: Design and evaluation: 1994  
*Amend: 1*

**Government Legislation**

Animal Remedies Act: 1967

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Dangerous Goods (licensing fees) Regulations: 1976

Explosives Act: 1957

Explosives Regulations: 1959

Explosives Authorisation Order: 1983  
and amendment No. 1 (1987)

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Gas Regulations: 1993

Pesticides Act: 1979

Pesticides Regulations: 1983

Pesticides (Vertebrate Pest Control) Regulations: 1983

Radiation Protection Act: 1965

Radiation Protection Regulations: 1982

Toxic Substances Act: 1979

Toxic Substances Regulations: 1983

**New Zealand Geomechanics Society**

Guidelines for the field descriptions of soils and rocks in engineering use. Nov 1988

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F3/AS1

F3/AS1

F3/AS1

F4/AS1, HB/CS 14

C/AS1

G12/AS1

F3/AS1

F3/AS1

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**United States of America Publications****American Iron and Steel Institute**

Fire-safe structural steel – a design guide: 1983

C/AS1

**American National Standards Institute and American Society of Mechanical Engineers**

ANSI/ASME B16.1: 1989 Cast iron pipe flanges and flanged fittings, Class 25, 125, 250 and 800

G10/AS1

ANSI/ASME B16.3: 1985 Malleable-iron threaded fittings, Classes 150 and 300

G10/AS1, G14/VM1

ANSI/ASME B16.5: 1988 Pipe flanges and flanged fittings, steel-nickel alloy and other special alloys

G10/AS1, G14/VM1

ANSI/ASME B16.9: 1990 Factory-made wrought steel butt-welding fittings

G10/AS1, G14/VM1

ANSI/ASME B31.3: 1990 Chemical plant and petroleum refinery piping

G14/VM1

ANSI B2.1: 1968 Screwing and socketing

G14/VM1

ANSI B16.11: 1980 Forged steel fittings, socket-welding and threaded

G10/AS1, G14/VM1

ASME Boiler and pressure vessel code-VIII pressure vessels

G14/VM1

**American Petroleum Institute**

API SPEC 5L: 1991 Specification for line pipe

G10/AS1, G14/VM1

API STD 620: 1990 Design and construction of large, welded, low-pressure storage tanks

G14/VM1

API STD 650: 1988 Welded steel tanks for oil storage

G14/VM1

API STD 1104: 1988 Welding of pipelines and related facilities

G10/AS1, G14/VM1

**American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)**

Design of smoke management systems. Klote and Milke 1992

C/AS1

**American Society of Sanitary Engineers**

ASSE 1050: 1991 Performance requirements for air admittance valves for plumbing DWV systems stack type devices

G13/AS1

ASSE 1051: 1992 Performance requirements for air admittance valves for plumbing drainage systems

G13/AS1

**American Society for Testing and Materials**

ASTM A 53 – 90a Specification for pipe, steel, black and hot-dipped, zinc-coated welded and seamless

G10/AS1, G14/VM1

ASTM A 106 – 91a Specification for seamless carbon steel pipe for high temperature service

G10/AS1

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	<b>Where quoted</b>
ASTM C 236: 1987 Standard test method for steady state thermal performance of building assemblies by means of a guarded hot box	<b>E3/AS1</b>
ASTM D 1143: 1981 Test method for piles under static axial compressive load	<b>B1/VM4</b>
ASTM E 96: 1992 Test methods for water vapour transmission of materials	<b>E2/AS1</b>
ASTM E 336: 1990 Method for measurement of airborne sound insulation in buildings	<b>G6/VM1</b>
ASTM E 413: 1987 Classification for rating sound insulation	<b>G6/VM1</b>
ASTM E 492: 1990 Test method for laboratory measurement of impact sound transmission through floor-ceiling assemblies using a tapping machine	<b>G6/VM1</b>
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<b>International Conference of Building Officials, America</b>	
Uniform Building Code Standard 4.1: 1997 Proscenium fire safety curtains	<b>C/AS1</b>
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<b>National Fire Protection Association of America</b>	
NFPA 92B: 1995 Guide for smoke management systems in malls, atria and large areas	<b>C/AS1, F6/AS1</b>
NFPA 285: 1998 Standard method of test for the evaluation of flammability characteristics of exterior non load bearing wall assemblies containing components using the intermediate scale, multi-storey test apparatus	<b>C/AS1</b>
<b>United States Environmental Protection Agency (EPA)</b>	
USEPA SW 846: 1986 Test methods for evaluating solid waste	<b>F1/VM1</b>
EPA/540/1 – 89/002: 1989 Risk assessment guidance for Superfund, Vol 1. Human health evaluation manual (Part A) Interim final. Prepared by USEPA Office of Emergency and Remedial Response	<b>F1/VM1</b>
Cross-connection control manual: 1989	<b>HB/CS 7</b>

**United States Public Health Service**

Toxicological profiles on individual chemicals. Prepared by the Agency for Toxicological Substances and Disease Registry, in collaboration with the US Environmental Protection Agency

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F1/VM1



## Definitions

Unless the context otherwise requires, words used in the New Zealand Building Code and Approved Documents shall have the meaning given under this section of the Handbook.

**Access chamber** A chamber with working space at *drain* level through which the drain passes either as an open channel or as a pipe incorporating an *inspection point*.

**Access point** A place where access may be made to a *drain* or *discharge pipe* for inspection, cleaning or maintenance; and may include a *cleaning eye*, *inspection point*, *rodding point*, *inspection chamber* or *access chamber*.

Amend 6  
Jul 2001

**Access route** A continuous route that permits people and goods to move between the apron or *construction edge* of the *building* to spaces within a *building*, and between spaces within a *building*.

**Accessible** Having features to permit use by *people with disabilities*.

**Accessible route** An *access route* usable by *people with disabilities*. It shall be a continuous route that can be negotiated unaided by a wheelchair user. The route shall extend from street boundary or car parking area to those spaces within the *building* required to be *accessible* to enable *people with disabilities* to carry out normal activities and processes within the *building*.

**Accessible stairway** A *stairway* having features for use by *people with disabilities*. *Buildings* required to be *accessible* shall have at least one *accessible stairway* leading off an *accessible route* whether or not a lift is provided.

Amend 2  
Aug 1994

**Accreditation certificate** means an *accreditation certificate* issued under Part VIII of the Act.

**Active conductor** Any electrical conductor in which the electrical potential differs from that of a neutral conductor or earth.

**Adequate** *Adequate* to achieve the objectives of the *building code*.

**Adjacent building** A nearby *building*, including an adjoining *building*, whether or not erected on *other property*.

**Air gap** The vertical distance through air between the lowest point of the water supply outlet and the *flood level rim* of the equipment or the *fixture* into which the outlet discharges.

**Air admittance valve** A valve that allows air to enter but not to escape in order to limit pressure fluctuations within the sanitary plumbing or drainage system.

Amend 6  
Jul 2001

**Allotment** has the meaning ascribed to it by section 4 of the Building Act 1991.

Amend 1  
Dec 1993

**Alter** in relation to a *building*, includes to rebuild, re-erect, repair, enlarge and extend; and **alteration** has a corresponding meaning.

**Amenity** An attribute of a *building* which contributes to the health, physical independence, and well being of the *building's* users but which is not associated with disease or a specific illness.

**Appliance hearth** A layer of *non-combustible* material under or near an appliance. It may be either part of the *building* structure or an overlay on a *combustible* floor.

**Asbestos** as defined by the Asbestos Regulations 1983 means:

- (a) Actinolite, amosite, chrysotile, crocidolite, fibrous anthophyllite, or tremolite; or
- (b) A mixture containing a mineral specified in paragraph a) of this definition; or
- (c) A material that is composed wholly or partly of any such mineral; or
- (d) A material or article that is contaminated by any such material.

**Atmospheric burner** A burner system where all the air for combustion is induced by the inspiring effect of a gas injector and/or by natural draught in the combustion chamber without mechanical assistance.

**Authority** means the Building Industry Authority established under Part III of the Act.

**Backflow** The unplanned reversal of flow of water or mixtures of water and *contaminants* into the *water supply system*.  
See *back-siphonage* and *back-pressure*.

Amend 6  
Jul 2001

**Backflow prevention device** A device that prevents *backflow*.

**Back-pressure** A *backflow* condition caused by the downstream pressure becoming greater than the supply pressure.

**Back-siphonage** *Backflow* condition caused by the supply pressure becoming less than the downstream pressure.

Amend 6  
Jul 2001

**Baluster** A post providing the support for the top and bottom rails of a barrier.

**Balustrade** The infill parts of a barrier (typically between floor and top rail).

**Basement** Any *firecell* or part of a *firecell* below the level of the lowest *final exit*.

**COMMENT:**

Because *fire safety precautions* are increased with increases in *escape height*, the precautions for *basements* increase with *basement* depth. Thus a single floor *building* with one *basement* level is treated as a two floor *building*, a single floor *building* with three *basement* levels as a four floor *building* and the requirements of C/AS1 Table 4.1 shall be applied downwards as opposed to upwards for levels above ground.

Amend 5  
Dec 2000

**Boundary** means any *boundary* which is shown on a survey plan approved by the Chief Surveyor and which is deposited in the Titles Office whether or not a new title has been issued.

**Boundary joist** A joist running along the outer ends of the floor joists.

**Branch discharge pipe** A *discharge pipe* that serves one or more *fixture discharge pipes* for any one floor.

Amend 6  
Jul 2001

**Branch vent pipe** A *vent pipe* that serves two or more *fixture vent pipes*.

**Building** has the meaning ascribed to it by section 3 of the Act as follows: meaning of *building* –

(1) In this Act, unless the context otherwise requires, the term "*building*" means any temporary or permanent movable or immovable structure (including any structure intended for occupation by people, animals, machinery, or chattels); and includes any mechanical, electrical, or other systems, and any utility systems, attached to and forming part of the structure whose proper operation is necessary for compliance with the *building code*; but does not include:

- (a) Systems owned or operated by a *network utility operator* for the purpose of reticulation of *other property*; or
- (b) Cranes, including any cranes as defined in regulations in force under the Health and Safety in Employment Act 1992; or
- (c) Cablecars, cableways, ski tows, and other similar stand alone machinery systems, whether or not incorporated within any other structure; or
- (d) Any description of vessel, boat, ferry, or craft used in navigation, whether or not it has any means of propulsion, and regardless of that means; nor does it include
  - (i) a barge, lighter, or other like vessel;
  - (ii) a hovercraft or other thing deriving full or partial support in the atmosphere from the reactions of air against the surface of the water over which it operates;
  - (iii) a submarine or other thing used in navigation while totally submerged; or

Amend 1  
Dec 1993Amend 1  
Dec 1993

(e) Vehicles and motor vehicles (including vehicles and motor vehicles as defined in section 2(1) of the Transport Act 1962 and section 2(1) of the Transport (Vehicle and Driver Registration and Licensing) Act 1986, but not including vehicles and motor vehicles, whether movable or immovable, which are used exclusively for permanent or long-term residential purposes; or

Amend 1  
Dec 1993

(ea) Aircraft, including any machine that can derive support in the atmosphere from the reactions of the air otherwise than by the reactions of the air against the surface of the earth; or

(f) Containers as defined in section 2 of the Dangerous Goods Act 1974; or

(g) Magazines as defined in section 2 of the Explosives Act 1957; or

(h) *Scaffolding* used in the course of the *construction* process; or

(i) *Falsework* used in the course of the *construction* process.

Amend 1  
Dec 1993

(2) For the purposes of Part IX of this Act a *building consent*, a *code compliance certificate*, and a *compliance schedule* the term *building* also includes –

(a) Any part of a *building*; and

(b) Any 2 or more *buildings* which, on completion of any *building work*, are intended to be managed as 1 *building* with a common use and a common set of ownership arrangements.

Amend 3  
Dec 1995

(3) For the purposes of subclause (2) of this definition, where any utility system or any part of any utility system –

(a) Is external to the *building*; and

(b) Is also connected to or is intended to be connected to –

(i) A network under the control of a *network utility operator*; or

(ii) Some other facility which is able to provide for the successful functioning of the utility system in accordance with its intended design – that utility system or that part of the utility system shall be deemed to be part of a *building*.

Amend 3  
Dec 1995

(4) Notwithstanding the provisions of subclause (3) of this definition, where a septic tank is connected to a *building* utility system the septic tank shall be deemed to form part of that *building* utility system.

**Building certifier** means a *person* approved as a *building certifier* by the Authority under Part VII of the Building Act 1991.

Amend 5  
Dec 2000

**Building code** means the *building code* made under Part VI of the Building Act 1991, being the *building code* set out in the First Schedule to the Building Regulations.

Amends 1  
and 5

**Building consent** means a consent to carry out *building work* granted by a *territorial authority* under Part V of the Building Act 1991; and includes all conditions to which the consent is subject.

Amend 5  
Dec 2000

**Building element** Any structural and non-structural component or assembly incorporated into or associated with a *building*. Included are *fixtures*, *services*, *drains*, permanent mechanical installations for access, glazing, partitions, ceilings and temporary supports.

**Building height** The vertical distance between the floor level of the lowest *final exit* from the *building*; and the highest occupied floor level containing or supporting any *purpose group* other than IE, IA or ID, or penthouses used to enclose *stairways*, liftshafts or machinery rooms located on or within the roof.

Amend 5  
Dec 2000

**Building performance index (BPI)** in relation to a *building*, means the energy from a *network utility operator* or a depletable resource (measured in kilowatt-hours per square metre of floor area and per *degree-day*, and calculated using the Building Research Association of New Zealand's Annual Loss Factor Design Manual 1990 or some other method that can be correlated with that manual) needed to maintain the *building* at a constant internal temperature for the period from 1 May to the close of 31 August under the following standard conditions:

- (a) A continuous temperature of 20°C throughout the *building*.
- (b) An air change rate of 1 change per hour or the actual air leakage rate, whichever is the greater.
- (c) A heat emission contribution arising from internal heat sources for the period being considered of 1000 kWh for the first 50 m<sup>2</sup> of floor area and 10 kWh for every additional square metre of floor area.
- (d) No allowance for: –
  - (i) carpets, or
  - (ii) blinds, curtains, or drapes, on windows.
- (e) Windows to have a shading coefficient of 0.6 (made up of 0.8 for windows and recesses and 0.75 for site shading).

**Building statement of fitness** means a statement issued by a *territorial authority* under section 44(4)(c) of the Act.

**Building work** means work for or in connection with the *construction, alteration, demolition, or removal of a building*; and includes *sitework*.

**Cavity barrier** A *construction* provided to close openings within a *concealed space* against the passage of *fire*, or to restrict the spread of *fire* within such spaces.

**Check valve (or non-return valve)** A valve that permits flow in one direction but prevents a return flow and is part of a *backflow device*.

**Chimney** A *non-combustible* structure which encloses one or more *flues, fireplaces* or other heating appliances.

**Chimney back** The *non-combustible* wall forming the back of a *fireplace*.

**Chimney base** That part of a *chimney* which houses the *fireplace*.

**Chimney breast** The front *fireplace* wall *construction* above the *fireplace* opening.

**Chimney jambs** The side walls of a *fireplace*.

**Cladding** The exterior weather-resistant surface of a *building*.

**Classified use** means a *classified use* listed in clause A1 of the *building code*.

**Cleaning eye** A small *diameter access point* usually formed as part of a fitting or trap.

**Code compliance certificate** means a certificate to that effect issued by a *territorial authority* or a *building certifier* pursuant to section 43 of the Building Act 1991.

**Combined waste pipe** A *discharge pipe* which serves two or more *waste pipes*.

**Combustible** See *non-combustible*.

**Common ramp** A ramp which is used, or intended to be used by the public whether as of right or not, and is not a *service ramp* or *accessible ramp*.

**Common stairway** A *stairway* which is used, or intended to be used, by the public whether as of right or not, and is not a *private stairway, service stairway* or *accessible stairway*.

**Compliance schedule** means a *compliance schedule* issued under section 44 of the Building Act 1991.

**Compound** In relation to the storage of liquid dangerous goods, a basin, pit, excavation, hollow or enclosure constructed of concrete, brick, clay, earth, or similar incombustible material which will effectively retain the liquid dangerous goods if they leak from their container(s).

Amend 5  
Dec 2000Amend 5  
Dec 2000Amend 6  
Jul 2001Amend 1  
Dec 1993Amend 6  
Jul 2001Amend 5  
Dec 2000Amend 5  
Dec 2000

**Concealed space** Any part of the space within a *building* that cannot be seen from an *occupied space*.

**COMMENT:**

This term includes any ceiling space, roof space, space under a raised floor (such as computer rooms, floors, or stages), plenums, spaces under a tiered floor, "left-over spaces" created when some structural element or the like has been covered in; small service or duct spaces within the volume of a *firecell* and the like, but not a *protected shaft*.

**Construct** in relation to a *building*, includes to build, erect, prefabricate, and relocate; and **construction** has a corresponding meaning.

**Contaminant** includes any substance (including gases, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat

- (a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water, or
- (b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

This is the meaning ascribed to it by the Resource Management Act 1991.

Amend 6  
Jul 2001

**Controlled area** That area where the use of radioactive material or an irradiating apparatus may, in the opinion of the *licensee*, present a hazard to *persons* within that area.

**Cool location** means a location in New Zealand where the *degree-day total* is 920 or more.

Amend 5  
Dec 2000

**Cross connection** Any actual or potential connection between a *potable water* supply and a source of contamination.

Amends 1  
and 6

**Damp-proof course (DPC)** A narrow strip (generally up to 300 mm wide) of *durable vapour barrier* placed between *building elements* to prevent the passage of moisture from one element to another.

Amend 5  
Dec 2000

**Damp-proof membrane (DPM)** A sheet material, coating or vapour barrier, having a low water vapour transmission, and used to prevent water and water vapour movement through concrete in contact with the ground. (Also known as a concrete underlay.)

Amend 5  
Dec 2000

**Dangerous goods** Any materials included in the UN classification, classes 2-5.

**Dangerous goods workroom** A room reserved primarily for the use of *dangerous goods* of Class 3(a) or Class 3(b) (i.e. flammable liquids).

**Dead end** That part of an *open path* where escape is possible in only one direction.

**COMMENT:**

A *dead end* ceases to exist where the *escape route* reaches a point in the *open path* which offers alternative directions of travel, or at a *final exit* or an *exitway*.

**Degree-day** in relation to any location on any day, –

- (a) If a base temperature of 15°C is greater than the mean of the maximum and minimum outdoor temperatures at that location on that day, means the number of degrees Celsius by which that base temperature is greater than that mean.
- (b) If a base temperature of 15°C is not greater than the mean of the maximum and minimum outdoor temperatures at that location on that day, means zero.

Amends 3  
and 5

**Degree-day total** in relation to any location, means the sum of the *degree-days* for that location for the period of 1 May to 31 August, as derived from Average Degree-day Tables – Selected NZ Stations (Miscellaneous Publication 159, 1978 of the New Zealand Meteorological Service).

Amend 5  
Dec 2000

**Depot** In relation to *dangerous goods*, a *building*, place, or vessel as may be prescribed, or as may be approved by an Inspector (of *dangerous goods*), as a *depot* for the storage of *dangerous goods*.

**Developed length** The total length along the centre line of a pipe including fittings and bends.



**Diameter (or bore)** The nominal internal *diameter*.

**Discharge pipe** Any pipe that is intended to convey discharge from *sanitary fixtures* or *sanitary appliances*.

**Discharge stack** A *discharge pipe* that has one or more *discharge pipe* connections, and which is vented at one end via a *discharge stack vent*.

**Discharge stack vent** A *vent pipe* connected to the top of the *discharge stack*.

**Discharge unit** The unit of measure for the discharge (hydraulic load) in the *plumbing system*, and is based on the rate, duration and frequency of *discharge* from a *sanitary fixture* or *sanitary appliance*.

**Doorset** A complete assembly comprising a door leaf or leaves including any glazed or solid panels adjacent to or over the leaves within the door frame including hardware or other inbuilt features; and a door frame, if any, with its fixings to the wall and, for a sliding or tilting door, all guides and their respective fixings to the lintel, wall or sill.

**Drain** A pipe normally laid below ground level including fittings and equipment and intended to convey *foul water* or *surface water* to an *outfall*.

**Drainage access area** means a space within a *building* containing an *inspection chamber* or *access chamber*, and which is isolated from other enclosed spaces within the *building*.

**Drain vent pipe** Any pipe which is intended to permit the movement of air into and out of the *drain* and *sewer*.

**Draught diverter** A device, without moving parts, fitted in the *flue* of an appliance for isolating the combustion system from the effects of pressure changes in the secondary *flue*.

**Durable** Resistant to wear and decay.

**Electrical installation** Any electrical fixed appliances, and components used in the reticulation of electricity, which are intended to remain permanently attached to and form part of the *building*.

**Electrical supply system** The source of electricity external to the *electrical installation*.

**Energy work** means –

- (a) *Gasfitting*;
- (b) *Prescribed electrical work*.

**Energy work certificate** means a certificate of the kind referred to in paragraph (e) or paragraph (f) of section 50(1) of the Act.

**Escape height** The height between the floor level in the *firecell* being considered and the floor level of the required *final exit* which is the greatest vertical distance above or below that *firecell*.

**COMMENT:**

1. It is necessary only to use the greatest height to the exits required for the *firecell* being considered, even though the *building* may have other *final exits* at lower or higher levels.
2. Where the *firecell* contains *intermediate floors*, or upper floors within *household units* the *escape height* shall be measured from the floor having the greatest vertical separation from the *final exit*.

**Escape route** A continuous unobstructed route from any *occupied space* in a *building* to a *final exit* to enable occupants to reach a *safe place*, and shall comprise one or more of the following: *open paths*, *protected paths* and *safe paths*.

**COMMENT:**

Doors are not obstructions in an *escape route* provided they comply with C/AS1 Part 3 and D1/AS1.

**Essential service** In the context of an *electrical installation* means emergency lighting, firemen's lifts, alarms, water pumps, sprinklers, detectors, ventilation systems and public address systems necessary for the safety of people in *buildings*.

**Estimated value** The value of *building work* shall be the aggregate of the values, determined in accordance with section 10 of the Goods and Services Tax Act 1985, of all goods and services to be supplied for that *building work*.

Amend 1  
Dec 1993

Amend 5  
Dec 2000

Amend 5  
Dec 2000

Amend 6  
Jul 2001

**Definitions**

**Evacuation time** The time taken by the occupants of the *building* to evacuate the *building* to a *final exit*.

**Exitway** All parts of an *escape route* protected by *fire* or *smoke separations*, or by distance when exposed to open air, and terminating at a *final exit*.

**External wall** Any exterior face of a *building* within 30° of vertical, consisting of *primary* and/or *secondary elements* intended to provide protection against the outdoor environment, but which may also contain *unprotected areas*.

**COMMENT:**

A roof is an *external wall* if within 30° of the vertical.

**Factor of safety** in relation to any *building* means the ratio of resisting forces to applied forces for a given loading condition. It is generally expressed to two significant figures.

**Falsework** used in the course of the *construction* process means any temporary structure or framework used in *construction* work to support materials, equipment, or any assembly; and includes the use of steel tubes, adjustable steel props, proprietary frames, or any other means to support a permanent structure during its *construction* until it becomes self-supporting; but does not include *scaffolding* or cranes for support.

**Final exit** The point at which an *escape route* terminates by giving direct access to a *safe place*.

**COMMENT:**

*Final exits* are commonly the external doors from a ground floor, but this applies only if such doors open directly onto a *safe place*. If a *safe place* can be reached only by passing down an alley, or across a bridge, then the *final exit* is not reached until the end of such an alley or bridge. *Final exits*, therefore, should be seen strictly as a point of arrival, rather than as any particular element of a *building*. They are determined entirely by the definition of *safe place*.

**Fire** The state of combustion during which flammable materials burn producing heat, toxic gases, or smoke or flame or any combination of these.

**Firecell** Any space including a group of contiguous spaces on the same or different levels within a *building*, which is enclosed by any combination of *fire separations*, *external walls*, roofs, and floors.

**COMMENT:**

Floors, in this context, includes ground floors and those in which the underside is exposed to the external environment (e.g. when cantilevered). Note also that internal floors between *firecells* are *fire separations*.

**Firecell rating (F)** The time in minutes for which it is intended to prevent *fire* spreading to another *firecell* within a *building*, or causing structural collapse within the *firecell* due to failure of any *primary* or *secondary element*.

**COMMENT:**

1. The purpose of the *firecell rating* is to prevent premature collapse of elements of structure in order to protect:
  - a) The occupants, some of whom may have to remain in the *building* for some time while evacuation proceeds, particularly if the *building* is a large one.
  - b) Adjacent *household units* and sleeping areas in the *building* of *fire* origin.
  - c) Fire fighters engaged on rescue and *fire* fighting operations (although this is limited because property protection in the *building* of origin is not a matter covered by the New Zealand Building Code except as required by b) above).
2. The use of the *F rating* to determine the *FRR* of a *primary* or *secondary element* is discussed in C/AS1 Part 5.

Amend 5  
Dec 2000

**Fire damper** A device with a specified *FRR* complete with fixings and operating mechanism for automatically closing off an airway where it passes through a *fire separation*.

**COMMENT:**

An airway may be a duct, plenum, ceiling space, roof space or similar *construction* used for the passage of ventilating air.

**Fire door** A *doorset*, single or multi-leaf, having a specific *fire resistance rating*, and in certain situations a smoke control capability, and forming part of a *fire separation*. The door, in the event of *fire*, if not already closed, will close automatically and be self latching.

Amend 3  
Dec 1995

Amend 5  
Dec 2000

**COMMENT:**

Requirements for *fire doors* are given in C/AS1 Paragraph 6.19.1 and 6.19.8 and Appendix C Paragraph C8.1.

Amend 5  
Dec 2000

**Fire hazard** means the danger in terms of potential harm and degree of exposure arising from the start and spread of *fire* and the smoke and gases that are thereby generated.

**Fire hazard category (FHC)** The number (graded 1 to 4 in order of increasing severity), used to classify *purpose groups* or activities having a similar *fire hazard*, and where fully developed *fires* are likely to have similar impact on the structural stability of the *building*.

**COMMENT:**

*Fire hazard categories* are identified in C/AS1 Table 2.1.

Amend 5  
Dec 2000

**Fire intensity** The release rate of calorific energy in watts, determined either theoretically or empirically, as applicable.

**Fire load** The sum of the net calorific values of the *combustible* contents which can reasonably be expected to burn within a *firecell*, including furnishings, built-in and removable materials, and *building elements*. The calorific values shall be determined at the ambient moisture content or humidity. (The unit of measurement is MJ.)

**Fire load energy density (FLED)** The total *fire load* divided by the *firecell* floor area. In this calculation the floor area shall include circulation and service spaces, but exclude *exitways* and *protected shafts*.

**COMMENT:**

The total *fire load* is converted to *fire load energy* terms in megajoules (MJ) for calculation of the *FLED* (MJ/m<sup>2</sup>).

Amend 5  
Dec 2000

**Fireplace** A space formed by the *chimney back*, the *chimney jambs*, and the *chimney breast* in which fuel is burned for the purpose of heating the room into which it opens.

**Fire resistance rating (FRR)** The term used to describe the minimum *fire* resistance of *primary* and *secondary elements* as determined in the *standard test* for *fire* resistance, or in accordance with a specific calculation method verified by experimental data from standard *fire* resistance tests. It comprises three numbers giving the time in minutes for which each of the criteria *stability*, *integrity* and *insulation* are satisfied, and is presented always in that order.

Amend 5  
Dec 2000**COMMENT:**

1. Examples of *FRRs* are:

- a) 30/30/15 indicating *stability* 30 minutes, *integrity* 30 minutes, *insulation* 15 minutes.
- b) 30/-/- indicating *stability* 30 minutes, but no time requirement for *integrity* or *insulation*.
- c) -/15/15 indicating no time requirement for *stability*, but 15 minutes for *integrity* and *insulation*.
- d) 60/30/x indicating *stability* of 60 minutes, *integrity* of 30 minutes, and a requirement for *insulation* from C/AS1 Paragraph 5.6.4.

2. C/AS1 Part 5 gives more information on *FRRs*.

Amend 5  
Dec 2000

**Fire resisting closure** A *fire* rated device or assembly for closing an opening through a *fire separation*. It shall have a *FRR* of no less than that required for the *fire separation*.

**COMMENT:**

A *fire resisting closure* is intended to include *fire doors*, *fire windows* or access panels. In this context the opening may be used to permit passage of people or goods, or to transmit light, but does not include an opening to permit the passage of *building services*.

Amend 5  
Dec 2000

**Fire resisting glazing** Fixed or openable glazing, complete with frame and fixings, mullions, transoms and glazing beads, with a specified *FRR* and complying with NZS 4232: Part 2.

**COMMENT:**

1. The requirement for *fire resisting glazing* will not be met by ordinary window glass, or safety glasses, but rather by wired glass, or by special *fire* resisting glass shown by test to perform adequately. The nature and design of the frames also have an effect on the performance of *fire resisting glazing*.
2. Openable glazing is required by NZS 4232 Part 2 to be fitted with an automatic device which, in the event of *fire*, will close and latch the window sash.

Amend 5  
Dec 2000



**Fire safety precautions (FSPs)** The combination of all methods used in a *building* to warn people of an emergency, provide for safe evacuation, and restrict the spread of *fire*, and includes both active and passive protection.

**COMMENT:**

This definition has the same meaning and wording as the definition of "fire safety systems" in the Building Regulations.

Amend 1  
Dec 1993

**Fire separation** Any *building element* which separates *firecells* or *firecells* and *safe paths*, and provides a specific *fire resistance rating*.

**Fire shutter** A *fire* rated device, complete with fixings and operating mechanism, for automatically closing off an opening in a *fire separation* or *protected shaft*.

**Fire stop** A material or method of *construction* used to restrict the spread of *fire* within or through *fire separations*, and having a *FRR* no less than that of the *fire separation*.

**COMMENT:**

*Fire stops* are mainly used to seal around *penetrations*, but can also be used to seal narrow gaps between *building elements*.

**Fixture** An article intended to remain permanently attached to and form part of a *building*.

**Fixture discharge pipe** A *discharge pipe* that is used to convey waste from a single *sanitary fixture* or *sanitary appliance* to a *branch discharge pipe*, a *discharge stack*, or directly to a *drain*. It does not include any pipes forming part of a *sanitary appliance*.

Amend 6  
Jul 2001

**Fixture vent pipe (trap vent)** A *vent pipe* that is connected to a *fixture discharge pipe* or the *sanitary fixture* itself.

**Flame barrier** A material or system applied or installed to protect another *building element* from flame contact. The protection shall be effective for no less than 10 minutes exposure in the *standard test* for *fire* resistance.

**COMMENT:**

1. The principal use of *flame barriers* is to delay ignition of *foamed plastics* materials.

Amend 5  
Dec 2000

2. Refer to Appendix C Paragraph C10.1 for details of the test requirements for *flame barriers*.

Amend 5  
Dec 2000

**Flame safeguard system** A system consisting of a flame detector(s) plus associated circuitry, integral components, valves and interlocks the function of which is to shut off the fuel supply to the burner(s) in the event of ignition failure or flame failure.

**Flammability index (FI)** That index number for flammability, which is determined according to the *standard test* method for flammability of thin flexible materials.

**Flood level rim** The top edge at which water can overflow from equipment or a *fixture*.

**Floor waste** An outlet located at the low point of a graded floor or in a level floor designed to receive accidental or intentional discharges.

**Floor waste pipe** A pipe that receives the discharge from a *floor waste* and that discharges outside the *building* or to the *foul water* drainage or sanitary *plumbing system*.

Amend 6  
Jul 2001

**Flue** The passage through which the products of combustion are conveyed to the outside.

**Flue liner** Pipes or linings of *fire* clay, metal or *fire* brick, surrounding *flues*.

**Flue system** A series of interconnecting *flue* pipe casings which form a safe passage (*flue*) for conveying products of combustion from within an appliance to the outside of a *building* or structure.

Amend 9  
Apr 2004

**Foamed plastics** *Combustible* foamed plastic polymeric materials of low density (typically less than 100 kg/m<sup>3</sup>) and are classified as cellular polymers which are manufactured by creating a multitude of fine voids (typically 90 to 98%) distributed more or less uniformly throughout the product. Examples of *foamed plastics* are latex foams, polyethylene foams, polyvinyl chloride foams, expanded or extruded polystyrene foams, phenolic foams, urea-formaldehyde foams, polyurethane foams and polychloropene foams.

Amend 5  
Dec 2000

**COMMENT:**

1. *Foamed plastics* may be rigid or flexible, but rigid foams are the most common in *building* products. When burnt they tend to generate high levels of heat energy (kJ/kg) and varying quantities of smoke and other toxic gases depending on the nature and volume of the particular product.
2. Where doubt exists as to whether a *building* material is *foamed plastics*, an opinion should be sought from a person or organisation with appropriate skill and experience in *fire* engineering. That opinion should be included with the *building consent* application to the *territorial authority*.

Amend 5  
Dec 2000

**Forced or induced draught appliance** An *appliance* where all or part of the air for *combustion* is provided by a fan or other mechanical device which is an integral part of the combustion system.

**Foul water** The discharge from any *sanitary fixture* or *sanitary appliance*.

**Foul water drainage system** *Drains*, joints and fittings normally laid underground and used specifically for the conveyance of water from the *plumbing system* to an *outfall*.

**Free outlet (push through)** In the context of *storage water heaters* means a *water heater* with a tap on the cold water inlet so designed that the hot water is discharged through an open outlet.

**Functional requirements** in relation to a *building*, means those functions which a *building* is to perform for the purposes of the Act.

**Gantry** A structure covering a public way providing protection from both the side and overhead.

**Gasfitting** has the same meaning as in section 2 of the Plumbers, Gasfitters, and Drainlayers Act 1976.

**Gather** That part of a *chimney* where the transition from *fireplace* to stack occurs.

**Good ground** means any soil or rock capable of permanently withstanding an ultimate bearing pressure of 300 kPa (i.e. an allowable bearing pressure of 100 kPa using a factor of safety of 3.0), but excludes:

- a) Potentially compressible ground such as topsoil, soft soils such as clay which can be moulded easily in the fingers, and uncompacted loose gravel which contains obvious voids,
- b) Expansive soils being those that have a liquid limit of more than 50% when tested in accordance with NZS 4402 Test 2.2, and a linear shrinkage of more than 15% when tested, from the liquid limit, in accordance with NZS 4402 Test 2.6, and
- c) Any ground which could foreseeably experience movement of 25 mm or greater for any reason including one or a combination of: land instability, ground creep, subsidence, seasonal swelling and shrinking, frost heave, changing ground water level, erosion, dissolution of soil in water, and effects of tree roots.

Amend 5  
Dec 2000**COMMENT:**

Soils (excepting those described in a), b) and c) above) tested with a dynamic cone penetrometer in accordance with NZS 4402 Test 6.5.2, shall be acceptable as *good ground* for *building* foundations if penetration resistance is no less than:

- a) 3 blows per 75 mm at depths no greater than the footing width.
- b) 2 blows per 75 mm at depths greater than the footing width.

Depths shall be measured from the underside of the proposed footing.

**Grease trap** A device designed to intercept grease in a *foul water* discharge.

**Group sleeping area** A *firecell* containing communal sleeping accommodation for a specified number of people who may or may not be known to one another. Partial subdivision within the *firecell* is permitted with specific limitation including that no *occupied space* is fully enclosed and all *occupied spaces* are open and available to all occupants at any time. A *group sleeping area firecell* may include spaces for associated direct support functions, such as hygiene facilities and tea making (not cooking) activities, for use by the occupants. It does not include spaces, such as waiting rooms, lounges, dining rooms or kitchens, providing a communal service function for all occupants.

Amend 5  
Dec 2000

## Definitions

### COMMENT:

1. Examples of *group sleeping area firecells* are dormitories, hospital wards, *wharehenui*, backpacker hostels and ski lodges.
2. The maximum number of people permitted in a *group sleeping area firecell*, and the permitted form of subdivision, will depend on the ability of the occupants to react to the presence of *fire* and escape to a *safe place*.

Amend 5  
Dec 2000

**Gully trap** A fitting designed to prevent foul air escaping from the drainage system and used to receive the discharge from *waste pipes*.

**Habitable space** A space used for activities normally associated with domestic living, but excludes any bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, clothes-drying room, or other space of a specialised nature occupied neither frequently nor for extended periods.

**Habitable work** Any *building* where people live, work or may assemble, but does not include *buildings* associated with the storage or use of *dangerous goods* on the same site.

### COMMENT:

The terms 'Habitable Work' and 'Title Boundary' in this document replace the definition 'Protected Work' used in the Dangerous Goods Regulations 1980/46, 1985/188, 1985/170.

Amends 1  
and 5

**Handrail** A rail to provide support to, or assist with the movement of a *person*.

**Hazardous** Creating an unreasonable risk to people of bodily injury or deterioration of health.

**Hazardous substance** Has the meaning ascribed to it by the Fire Service Act 1975.

**Hearth** The insulating floor under the *fire* and in front and at the sides of the *fireplace*.

**Hoarding** A structure alongside a public way providing side protection but no overhead protection.

**Hold-open device** A device which holds a *smoke control door* or *fire door* open during normal use, but is released by deactivating the device by an automatic *fire* detection system, allowing the door to close automatically under the action of a self-closing device.

Amend 1  
Dec 1993

**Household unit** means any *building* or group of *buildings*, or part of any *building* or group of *buildings*, used or intended to be used solely or principally for residential purposes and occupied or intended to be occupied exclusively as the home or residence of not more than one household; but does not include a hostel or boardinghouse or other specialised accommodation.

**HVAC** An abbreviation for heating, ventilating and airconditioning.

**Ignitability index (Ig)** That index number for ignitability which is determined according to the *standard test* method for measuring the properties of lining materials.

**Illuminance** The luminous flux falling onto a unit area of surface.

**Impact insulation class (IIC)** A single number rating derived from measured values of normalized impact sound pressure levels in accordance with Method ASTM E 492, Annex A1, Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine. It provides an estimate of the impact sound insulating performance of a floor-ceiling assembly.

**Impervious** That which does not allow the passage of moisture.

**In bulk** In relation to liquid or gaseous *dangerous goods*, product contained in receptacles of a liquid capacity greater than 250 litres. Conversely, **non-bulk** means contained in receptacles of 250 litres capacity or less.

**Inspection chamber** A chamber with working space at ground level through which the *drain* passes either as an open channel or as a pipe incorporating an *inspection point*.

**Inspection point** A removable cap at *drain* level through which access may be made for cleaning and inspecting the drainage system.

**Insulating material** A material that has a thermal conductivity of less than 0.07 W/mK.

**Insulation** In the context of *fire* protection, the time in minutes for which a prototype specimen, of a *fire separation* when subjected to the *standard test for fire* resistance, has limited the transmission of heat through the specimen.

**Integrity** In the context of *fire* protection, the time in minutes for which a prototype specimen, of a *fire separation* when subjected to the *standard test for fire* resistance, has prevented the passage of flame or hot gases.

**COMMENT:**

The precise meaning of *integrity* depends on the type of *building elements* being treated and how it is defined in the *standard test* being used.

Amend 5  
Dec 2000

**Intended use** of a *building* includes:

- a) Any reasonably foreseeable occasional other use that is not incompatible with the *intended use*; and
- b) Normal maintenance; and
- c) Activities taken in response to *fire* or any other reasonably foreseeable emergency – but does not include any other maintenance and repairs or rebuilding.

**Interceptor trap** A device which will separate and retain desired liquids and solids from a liquid stream and which will provide a water barrier to prevent foul air or gas from entering any downstream system.

**Intermediate floor** Any upper floor within a *firecell* and which is not *fire* separated from the floor below. Upper floors within *household units* need not meet the specific *fire* safety requirements which apply to *intermediate floors* in all other situations.

**COMMENT:**

1. An *intermediate floor* may be open to the *firecell* or enclosed with non-*fire* rated *construction*. If enclosed with *fire* rated walls another *firecell* is created.
2. *Household units* occur only in *purpose groups* SR and SH. Life safety provisions are governed by the limitations in permitted *open path* lengths.

Amend 5  
Dec 2000

**Isolation distance** The minimum physical distance by which an installation, or specified part of an installation, containing *dangerous goods* must be separated from any other specified place, or *building*.

**Kerb ramp** means a short ramp either cutting through a kerb or built up to the kerb.

**Land held under the same title** includes a piece of land, or a *building* or part of a *building*, or both, that is:

- (a) A unit under the Unit Titles Act 1972, or
- (b) Leased under a crosslease registered under the Land Transfer Act 1952, or
- (c) Leased under a company lease registered under the Land Transfer Act 1952.

**Licensee** A *person* holding a license issued under the Radiation Protection Act 1965 and for the time being in force.

Amend 1  
Dec 1993

**Limited area atrium** A single *firecell* in which individual *occupied spaces* at different levels open onto a common enclosed space. Limitations are placed on the number of *intermediate floors* (no more than two levels), individual floor areas and permitted *occupant load*, depending on the provisions for smoke detection, smoke control and the *means of escape from fire*.

**COMMENT:**

Typical *limited area atrium buildings* are small shopping malls, and motel complexes with a central atrium feature open to a number of floors.

Amend 5  
Dec 2000

**Lock-out** The safety shut down condition of the control system such that re-start cannot be accomplished without manual resetting.

**Lower flammable limit (LFL)** (also referred to as Lower Explosive Limit (LEL)). The lowest percentage of hydrocarbon or flammable vapour in the air which will readily ignite on introduction of an ignition source.

**Main private stairway** A *private stairway* intended to provide access to and between frequently used spaces such as living areas, kitchens and garages, and includes all exterior *private stairways*.

Amend 2  
Aug 1994

**Definitions**

**Means of escape from fire** in relation to a *building* which has a floor area, means continuous unobstructed routes of travel from any part of a floor area of that *building* to a place of safety; and includes all active and passive protection features required to assist in protecting people from the effects of the *fire* in the course of their escape.

**Minister** means the Minister of Internal Affairs.

**Minor private stairway** A *private stairway* not on a main thoroughfare, and intended to provide infrequent access to a single room which is not a living area or kitchen.

Amend 2  
Aug 1994

**Multi-unit dwelling** Applies to a *building* or use which contains more than one separate household or family.

**COMMENT:**

For *fire-safety* purposes each *household unit* is a separate *firecell*.

**Natural draught** The flow produced by the tendency of warmed gases to rise.

**Network utility operator** means a person who:

- (a) Undertakes the distribution or transmission by pipeline of natural or manufactured gas, petroleum, or geothermal energy; or
- (b) Is an electricity operator or electrical distributor as defined by section 2(1) of the Electricity Act 1992 for the purposes of any works defined by that Act; or
- (c) Undertakes the piped distribution of *potable water* for supply; or
- (d) Is the operator of a sewerage system or a stormwater drainage system.

Amend 1  
Dec 1993

**Nominal pile width** The least width of a pile in side view and is equal to the diameter in round piles.

**Non-bulk** See *in bulk*.

**Non-combustible** Materials shall be classified as *non-combustible* or *combustible* when tested to:

Amend 5  
Dec 2000

AS 1530 - Part 1.

Amend 2  
Aug 1994

**Non-return valve** A valve that permits flow in one direction but prevents a return flow and is part of a hot or cold water system.

**Nosing** The rounded projecting edge of a stair tread.

**Notional boundary** The *boundary* which for *fire safety* purposes, is assumed to exist between two *buildings* on the same property under a single land title.

**COMMENT:**

A *notional boundary* may be located anywhere between the two *buildings*, and once chosen determines the *unprotected area* permitted in each *building*. Locating it closer to one *building* than the other, may be an advantage where it is planned for a rear wall without windows to face the front wall of the other *building* requiring windows.

**Occupant load** The greatest number of people likely to occupy a particular space within a *building*. It is determined by:

- a) Multiplying the number of people per m<sup>2</sup> (occupant density) for the activity being undertaken, by the total floor area, or
- b) For sleeping areas, counting the number of beds, or
- c) For fixed seating areas, counting the number of seats.

Amend 5  
Dec 2000

**Occupied space** Any space within a *building* in which a *person* will be present from time to time during the *intended use* of the *building*.

**Open path** That part of an *escape route* (including *dead ends*) within a *firecell* where occupants may be exposed to *fire* or smoke while making their escape.

**Open space** includes land on which there is and will be no *buildings* and which has no roof over any part of it other than overhanging eaves.

Amend 5  
Dec 2000

**Open vented storage water heater** A *water heater* incorporating a *vent pipe* which is permanently open to the atmosphere.



**Other property** means any land or *buildings* or part thereof which are:

- (a) Not held under the same *allotment*; or
- (b) Not held under the same *ownership* – and includes any *road*.

**Outdoor air** Air as typically comprising by volume:

- i) oxygen 20.94%
- ii) carbon dioxide 0.03%
- iii) nitrogen and other inert gases 79.03%.

**Outfall** That part of the disposal system receiving *surface water* or *foul water* from the drainage system. For *foul water*, the *outfall* may include a *sewer* or a septic tank. For *surface water*, the *outfall* may include a natural water course, kerb and channel, or soakage system.

**Over-pressure protection** Devices preventing the pressure in piping or appliances from exceeding a predetermined value.

**Owner** in relation to any land, including any *buildings* on that land, means the *person* who is for the time being entitled to the rack rent thereof or who would be so entitled if the land were let to a tenant at a rack rent; and, for the purposes of sections 30, 33, and 43 of the Act, includes the:

- (a) *Owner* of the fee simple of the land; and
- (b) Any *person* who has agreed in writing, whether conditionally or unconditionally, to purchase the land or any leasehold estate or interest in the land, or to take a lease of the land, while the agreement remains in force, and **ownership** has a corresponding meaning.

**Penetration** A pipe, cable or duct passing through an opening in a *fire separation*.

**People with disabilities** means any *person* who suffers from physical or mental disability to such a degree that he or she is seriously limited in the extent to which he or she can engage in the activities, pursuits, and the processes of everyday life.

**Performance criteria** in relation to a *building*, means those qualitative or quantitative criteria which the *building* is to satisfy in performing its *functional requirement*.

**Person** includes the Crown, a corporation sole, and also a body of *persons*, whether corporate or unincorporated.

**Piping system** An assembly of pipes, pipe fittings, gaskets, bolting and pipe supports.

**Pitch line** The line joining the leading edge or *nosings* (if any) of successive stair treads within a single flight of a *stairway*.

**Plans and specifications** means the drawings, specifications, and other documents according to which a *building* is proposed to be constructed, altered, demolished, or removed, including proposed procedures for inspection during *construction*, *alteration*, demolition, or removal, and also including (in respect of *construction* or *alteration*):

- (a) The *intended use* of the *building*; and
- (b) The design features or systems which the applicant considers will be required to be included in any *compliance schedule* issued in terms of section 44 of the Act; and
- (c) The proposed procedures for inspection and routine maintenance for the purposes of that *compliance schedule* in respect of those design features or systems.

**Plumbing system** Pipes, joints and fittings laid above ground and used for the conveyance of *foul water* to the *foul water drain*, and includes *vent pipes*.

**Potable (and potable water)** Water that is suitable for human consumption.

**Prescribed electrical work** has the same meaning as in section 2(1) of the Electricity Act 1992.

**Pressure control valve** A pressure limiting valve or pressure reducing valve.

Amend 6  
Jul 2001

Amend 1  
Dec 1993

## Definitions

Amend 5  
Dec 2000

**Primary element** A *building element* providing the basic load bearing capacity to the structure, and which if affected by *fire* may initiate instability or premature structural collapse.

**Principal user** A member of the primary group for which a *building* was constructed, and therefore explicitly excludes *persons* or groups of *persons* providing care or control of that *principal user* group.

**Privacy** The situation of being withdrawn from view.

**Private stairway** A *stairway* used, or intended to be used, by the occupants of a single *household unit*.

**Privy** A private room containing a receptacle (other than a WC) or an excavation for excreted liquid or solid human waste, and with a means of disposal or containment of the waste.

**Producer statement** means any statement supplied by or on behalf of an applicant for a *building consent* or by or on behalf of a *person* who has been granted a *building consent* that certain work will be or has been carried out in accordance with certain technical specifications.

**Property** includes land, *buildings*, and goods; but does not include incorporeal forms of *property*.

**Protected path** That portion of an *exitway* within a *firecell* which is protected from the effects of smoke by *smoke separations*.

**Protected shaft** A space, other than a *safe path*, enclosed by *fire separations* or *external walls* used to house *building* services, lifts, or conveyors which pass from one *firecell* to another.

**Public place** Any place which is freely open to and frequented by the public, but excludes private property where the access of the public to *dangerous goods* can be controlled by the *licensee*.

**Purpose group** The classification of spaces within a *building* according to the activity for which the spaces are used.

**R-value** The common abbreviation for describing the values of both *thermal resistance* and *total thermal resistance*.

**Railway line** has the meaning ascribed to it by section 2 of the Transport Services Licensing Act 1989.

**Reflectance** The ratio of the flux reflected from a surface to the flux incident on it.

**Regulations** means *regulations* in force under Part VI of the Act.

**Regulator** A device which automatically regulates the pressure or volume of gas passing through it to a predetermined level.

**Relevant boundary** means the *boundary* of an *allotment* which is *other property* in relation to the *building* concerned and from which is measured the separation between the *building* and that *other property*. For the *external wall* of any *building*, the *relevant boundary* shall be the nearest of the following *boundaries*:

- (a) A *boundary* of a freehold *allotment*, except that where the *other property* is a *road*, *railway line* or *public open space* the *relevant boundary* is the *boundary* on the far side of that *other property*;
- (b) A *boundary* of a cross lease or of a company lease or licence, except that where the *other property* is *open space* to which the lessee or licensee of the *building* concerned has an exclusive right of access and occupation or to which two or more occupiers have rights of access and occupation the *relevant boundary* is the *boundary* on the far side of that *other property*;
- (c) A *boundary* shown on a unit plan excluding a *boundary* between a principal unit and its accessory unit, except that where the *other property* is *open space* which is common property, the *relevant boundary* is the *boundary* on the far side of that *other property*.

Amend 5  
Dec 2000

Amend 1  
Dec 1993

Amend 5  
Dec 2000

**COMMENT:**

1. Where an easement, such as a right of way, occurs within an *allotment*, the *relevant boundary* shall remain the same as if the easement did not exist.
2. *Boundaries* within a cross-lease or company lease or licence are shown on a survey plan. In some cases the *boundary* is the *external wall* or roof of a *building*.
3. The unit title *boundaries* of principal units, accessory units, and common property are shown in the unit plan. A *boundary* is frequently an internal or *external wall*, an upper floor, or the roof of a *building*.
4. A wall along a *boundary* between two *allotments* is called a "party wall" when the *owners* of the *allotments* each have legal rights in respect of that wall registered by way of easements on one or both titles. An internal wall between cross-leases, company leases, or unit titles, or between one of them and common property, is not generally called a party wall but in that case also the lessees, unit title holders, or corporate body concerned each have legal rights in respect of that wall. Such a wall separates areas which are *other property* in relation to each other, but the wall itself is part of each property. The *fire* protection consequence of that legal concept is that such a wall can be regarded as a *fire separation* providing protection against horizontal *fire* spread in each direction. In other words, that wall may provide the appropriate *FRR* instead of each property having its own wall of that *FRR*.

Amend 5  
Dec 2000

**Relief vent** A *vent pipe* which is connected to a *discharge stack* below the lowest branch connection and which connects at its upper end to the *discharge stack vent* or terminates as an open vent.

Amend 6  
Jul 2001

**Road** has the meaning ascribed to it by section 315 of the Local Government Act 1974 and includes a public place and also includes a motorway.

Amend 5  
Dec 2000

**Rodding point** A removable cap at ground level through which access may be made for cleaning and inspecting the drainage system.

Amend 1  
Dec 1993

**Room-sealed appliance** An appliance designed so that air for combustion neither enters from, nor combustion products enter into, the room in which the appliance is located.

**Safe path** That part of an *exitway* which is protected from the effects of *fire* by *fire separations*, *external walls*, or by distance when exposed to open air.

**Safe place** A place of safety in the vicinity of a *building*, from which people may safely disperse after escaping the effects of a *fire*. It may be a place such as a street, *open space*, public space or an *adjacent building*.

**Safety colour (green, red or yellow)** A colour of specified properties to which a safety meaning is attributed.

**Safety glass** means a glass so treated or combined with other materials as to reduce the likelihood of injury to persons when it is cracked or broken.

**Safety shut-off system** An arrangement of valves and associated control systems which shuts off the supply of gas when required by a device which senses an unsafe condition.

**Safety sign** A particular type of sign which comprises a geometric form and a *safety colour*, together with a *safety symbol* or text (that is, words, letters, numbers or a combination of these) and gives a particular safety message.

**Safety symbol** means a graphic symbol used in a *safety sign*.

**Sanitary appliance** An appliance which is intended to be used for *sanitation* and which is not a *sanitary fixture*. Included are machines for washing dishes and clothes.

**Sanitary fixture** Any *fixture* which is intended to be used for *sanitation*.

**Sanitation** The term used to describe the activities of washing and/or excretion carried out in a manner or condition such that the effect on health is minimised, with regard to dirt and infection.



**Definitions**

**Scaffolding** used in the course of the *construction* process means any structure, framework, swinging stage, suspended *scaffolding*, or boatswain's chair, of a temporary nature, used or intended to be used for the support or protection of workers engaged in or in connection with *construction* work for the purpose of carrying out that work, or for the support of materials used in connection with any such work; and includes any plank, coupling, fastening, fitting, or device used in connection with the *construction*, erection, or use of *scaffolding*.

**Screen wall** Any wall or barrier which effectively diverts flammable vapours by virtue of its width, height and position, or which prevents the spread of *fire* from one place to another.

**Secondary element** A *building element* not providing load bearing capacity to the structure and if affected by *fire*, instability or collapse of the *building* structure will not occur.

**Secondary flow path** The path over which *surface water* will follow if the drainage system becomes overloaded or inoperative.

**Secondary private stairway** A *private stairway* other than a *main* or *minor private stairway*, intended to provide access to another floor containing only bedrooms, bathroom or similar accommodation.

Amend 2  
Aug 1994

**Secretary** has the same meaning as in section 2(1) of the Electricity Act 1992 or in section 2(1) of the Gas Act 1992, as the case may require.

Amend 1  
Dec 1993

**Service ramp** means a ramp that is used, or intended to be used, infrequently by service personnel to gain access to spaces for the purposes of maintenance and the movement of goods.

**Service stairway** means a *stairway* that is used, or intended to be used, infrequently by service personnel to gain access to spaces for the purposes of maintenance and the movement of goods.

Amend 1  
Dec 1993

**Sewer** A *drain* that is under the control of, or maintained by, a *network utility operator*.

**Sitework** means work on a *building* site, including earthworks, preparatory to or associated with the *construction*, *alteration*, demolition or removal of a *building*.

Amend 5  
Dec 2000

**Smokecell** A space within a *building* which is enclosed by an envelope of *smoke separations*, or *external walls*, roofs, and floors.

**Smoke control door** A *doorset* with close-fitting single or multi-leaves which are impermeable to the passage of smoke, fitted with smoke seals and installed within a *smoke separation*. The door, in the event of smoke, if not already closed, will close automatically and be held closed.

**COMMENT:**

1. A *smoke control door* may be held closed by use of a door closer. The door need not be latched.
2. Requirements for *smoke control doors* are given in C/AS1 Paragraph 6.19.1 and 6.19.8, and Appendix C Paragraph C8.1.

Amend 5  
Dec 2000

**Smoke developed index (SDI)** That index number for smoke developed when determined according to the *standard test* method for measuring the properties of lining materials.

**Smoke separation** Any *building element* able to prevent the passage of smoke between two spaces. *Smoke separations* shall:

- a) Consist of rigid *building elements* capable of resisting without collapse:
  - i) a horizontal pressure of 0.25 kPa applied from either side, and
  - ii) self weight plus the intended vertically applied live loads, and
- b) Form an imperforate barrier to the spread of smoke, and
- c) Be of *non-combustible construction* or a *flame barrier*, or achieve a *FRR* of 10/10/-, except that *non-fire resisting glazing* may be used if it is toughened or laminated safety glass.

Amend 5  
Dec 2000

**COMMENT:**

1. The pressure requirement is to ensure *adequate* rigidity and is not a smoke leakage requirement.
2. Walls and floors, whether *constructed* of sheet linings fixed to studs or joists, or of concrete, metal or fired clay, need only be inspected by someone experienced in *building construction* to judge whether the *construction* is tight enough to inhibit the passage of smoke.
3. Item c) is intended to ensure that the *smoke separation* will continue to perform as an effective barrier when exposed to *fire* or smoke for a short period during *fire* development.
4. There is no requirement for *smoke control doors* or other closures in *smoke separations* to meet the provisions of item c).

Amend 5  
Dec 2000

**Socket outlet** An accessory fixed to a wall or ceiling and designed to accept a plug that extends the electrical supply to an appliance by means of a flexible cable.

**Soil fixture** A *sanitary fixture* constructed to receive solid and/or liquid excreted human waste. It includes bedpan disposal units, slop sinks, urinals, water closet pans, and water-flushed sanitary towel disposal units.

Amend 6  
Jul 2001

**Sound transmission class (STC)** A single number rating derived from measured values of transmission loss in accordance with classification ASTM E 413, Determination of Sound Transmission Class. It provides an estimate of the performance of a partition in certain common sound insulation situations.

**Specified intended life** has the meaning ascribed to it by section 39 of the Act as follows: "*specified intended life*" in relation to a proposed *building*, or any existing *building* proposed to be altered, and which is intended to have a use of not more than 50 years, means the period of time, as stated in an application for a *building consent* or in the consent itself, for which the *building* is proposed to be used for its *intended use*.

**Spread of flame index (SFI)** That index number for spread of flame which is determined according to the *standard test* method for measuring the properties of lining materials.

**Stability** In the context of *fire* protection, the time in minutes for which a prototype specimen, of a *primary element* when subject to the *standard test for fire* resistance, has continued to carry its *fire* design load without failure.

**COMMENT:**

The *fire* design load should be as specified in the limit state loadings code NZS 4203.

**Stairway** A series of steps or stairs with or without landings, including all necessary *handrails* and giving access between two different levels.

**Standard test** A test method which is recognised as being appropriate for the *fire* protection properties being assessed.

**COMMENT:**

A list of *standard test* methods is given in Appendix C of C/AS1.

Amend 5  
Dec 2000

**Standard year** For the purposes of determining natural lighting, the hours between 8 am and 5 pm each day with an allowance being made for daylight saving.

**Storage water heater** A *water tank* with an integral *water heater* for the storage of hot water.

Amend 6  
Jul 2001

**Strength reduction factor** The factor by which the ultimate strength is multiplied to obtain the design strength.

**COMMENT:**

NZS 4203: 1992 uses the terms ideal strength in place of ultimate strength, and dependable strength in place of design strength.

Amend 2  
Aug 1994

**Structural fire endurance rating (S)** The time in minutes within which a *fire* should not cause structural failure of *primary* or *secondary elements*, resulting in consequential *fire* spread or collapse damage to *other property*, or an *adjacent building* on the same property which contains sleeping *purpose groups*.

Amend 1  
Dec 1993

**Suite** A *firecell* providing residential accommodation for the exclusive use of one *person* or of several people known to one another. It comprises one or more rooms for sleeping and may include spaces used for associated domestic activities such as hygiene and cooking.

**COMMENT:**

1. Bed numbers are limited to 6 in *purpose groups* SC and SD or 12 in *purpose group* SA in accordance with C/AS1 Paragraphs 6.6.5 and 6.7.6. Examples may be found in hotels, motels and residential care facilities, such as old people's homes or in hospices providing temporary family accommodation.
2. It is assumed that the social cohesion of the occupants by virtue of the personal relationship (as family members, friends or associates) would ensure that any individual, becoming aware of *fire*, would naturally assist others within the *firecell* to escape. The term *suite* does not apply to a group of bedrooms where each room is available to different "key-holders". In some cases a *suite* may be a single bedroom.

Amend 5  
Dec 2000

**Sump** A chamber which is installed in the *drain* and incorporates features to intercept and retain silt, gravel and other debris.

**Surface finish** The combination of a surface coating and substrate material on surfaces of *building elements* exposed to view. It can be an applied decorative coating or the uncoated *building element* itself. For interior surfaces the requirements are evaluated in terms of *SFI* and *SDI*. For exterior surfaces the requirements are evaluated in terms of rate of heat release as determined by Appendix C, Paragraph C9.1.

Amend 5  
Dec 2000

**Surface water** All naturally occurring water, other than sub-surface water, which results from rainfall on the site or water flowing onto the site, including that flowing from a *drain*, stream, river, lake or sea.

**Tailpipe** A device placed at the low point of a gas piping system to collect condensate, and from which the condensate may be removed.

**Territorial authority** has the meaning ascribed to it by section 2 of the Local Government Act 1974; and includes any organisation which is authorised to permit structures pursuant to section 12(1)(b) of the Resource Management Act 1991.

**Theatre** A place of assembly intended for the production and viewing of performing arts, and consisting of an auditorium and stage with provision for raising and suspending stage scenery above and clear of the working area.

**Thermal resistance** The resistance to heat flow of a given component of a *building element*. It is equal to the temperature difference (°C) needed to produce unit heat flux (W/m<sup>2</sup>) through unit area (m<sup>2</sup>) under steady conditions. The units are °Cm<sup>2</sup>/W.

**Threshold** A sill to an external door, or the floor under an internal door.

**Title boundary** A *boundary* with *other property*.

**COMMENT:**

The terms 'Habitable Work' and 'Title Boundary' in this document replace the definition 'Protected Work' used in the Dangerous Goods Regulations 1980/46, 1985/188, 1985/170.

**Total thermal resistance** The overall air-to-air *thermal resistance* across all components of a *building element* such as a wall, roof or floor. (This includes the surface resistances which may vary with environmental changes e.g. temperature and humidity, but for most purposes can be regarded as having standard values as given in NZS 4214.)

**Town gas** A manufactured gas.

**Toxic environment** An environment that contains *contaminants* that can contaminate the water supply in concentrations greater than those included in the New Zealand Drinking Water Standard 1995.

Amend 6  
Jul 2001

**Trap** A chamber which is installed in the *drain* and incorporates features to intercept and retain floatable debris.

**Travel distance** The length of the *escape route* as a whole or the individual lengths of its parts, namely:

- a) *Open paths*
- b) *Protected paths* and
- c) *Safe paths*.

**Unisex facilities** Facilities available for use by either sex.

**COMMENT:**

*Unisex facilities* may also be described as both gender facilities.

Amend 5  
Dec 2000

**Unprotected area** in relation to an *external wall* of a *building*, means any part of the *external wall* which is not *fire* rated or has less than the required *FRR*.

**COMMENT:**

*Unprotected area* includes non-*fire* rated windows, doors, or other openings, and non-*fire* rated *external wall construction*.

Amend 5  
Dec 2000

**Valve vented storage water heater (unvented storage water heater)** A *storage water heater* in which the required venting to the atmosphere is controlled by a valve.

**Vapour barrier** Sheet material or coating having a low water-vapour transmission, and used to minimise water-vapour penetration in *buildings*. (*Vapour barriers* are sometimes referred to as *damp-proof membranes*.)

**Vapour path length** The travel distance between the vapour source and the point at which the vapour concentration is being considered.

**Vent line** A pipe or tube which conveys gas to a safe place outside the *building* from a gas pressure *regulator* relief valve.

**Vent pipe** A pipe for the purpose of protecting *water seals* that at its upper end is either open to the atmosphere or fitted with an *air admittance valve* and that at its lower end is connected to a *discharge pipe*.

Amend 6  
Jul 2001

**Vent stack** A main vertical *vent pipe*, to which two or more *branch vent pipes* are connected.

Amend 1  
Dec 1993

**Warm location** means a location in New Zealand where the *degree-day total* is less than 920.

Amend 5  
Dec 2000

**Waste pipe** A *discharge pipe* that conveys the discharge from *waste water fixtures* to a *gully trap*.

**Waste water fixture** A *sanitary fixture* or *sanitary appliance* used to receive wastes, and which is not a *soil fixture*.

**Water heater** A device for heating water.

**Water main** A water supply pipe vested in, or is under the control, or maintained by, a *network utility operator*.

Amend 1  
Dec 1993

**Water seal** The depth of water that can be retained in a *water trap*.

Amend 6  
Jul 2001

**Water supply system** Pipes, fittings and tanks intended to be used in the piping of water from a *water main* or other water source to *sanitary fixtures*, *sanitary appliances* and fittings within a *building*.

**Water tank (vessel)** A covered fixed container for storing hot or cold water.

**Water trap** A fitting designed to retain a depth of water that prevents foul air and gases escaping from the *plumbing system* or *foul water drainage system* and entering a *building*.

Amend 6  
Jul 2001

**Weatherboards** Any overlapping strip *cladding*. It may be fixed either horizontally or vertically.

**Wharenui** A communal meeting house having a large open floor area used for both assembly and sleeping in the traditional Maori manner.

Amend 5  
Dec 2000

**Working day** means any day except a Saturday, a Sunday, Good Friday, Easter Monday, Christmas Day, Boxing Day, Anzac Day, Labour Day, the Sovereign's birthday, Waitangi Day, and any other day observed in any locality concerned as a public holiday.

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# Compliance Schedules

## 1.0 Introduction

**1.0.1** Section 44 of the Building Act 1991 requires specific systems in buildings to be subject to regular inspection, maintenance and reporting procedures. This section of the New Zealand Building Code Handbook provides guidelines for those procedures.

**1.0.2** Where suitable reference documents have been identified these are quoted. In other cases suggested check lists are provided, but those lists do not necessarily satisfy the essential requirements for all installations.

**1.0.3** In many cases inspection and maintenance requirements will be specific to a particular type of equipment, and recommendations of the designer, manufacturer or supplier should be followed.

**1.0.4** The definition (Act s.2) of plans and specifications, includes the proposed procedures for inspection and routine maintenance of design features or systems required to have a compliance schedule. These must be supplied to the territorial authority with the application for a building consent.

**1.0.5** The procedures and independent qualified persons must have the approval of the territorial authority which issues the compliance schedule in the prescribed form in accordance with the Act s.44(2).

## 1.1 Inspection and maintenance

**1.1.1** Inspections will generally cover the complete installation. The frequency of such inspections shall be appropriate to the type of installation and the consequences of the system not functioning.

**1.1.2** Maintenance for mechanical, electrical, hydraulic or electronic systems will generally be based on the designer's, manufacturer's or supplier's recommendations for routine servicing, and the frequency will vary for different parts of the installation. Routine maintenance is aimed at avoiding breakdown or malfunction, but should breakdown or malfunction occur, corrective action should be taken as soon as is reasonably practical.

## 1.2 Reporting

**1.2.1** Section 44(4) of the Act requires the compliance schedule to be kept in the building or some other location agreed upon with the territorial authority. Section 45(3) of the Act requires the owner to state on the building warrant of fitness, the location of the compliance schedule and associated written reports.

**1.2.2** Depending on the installation it may, for practical reasons, be appropriate for a log book to be kept at the installation, with a summary report held in the designated location with the compliance schedule. Defects and action taken should be recorded with the date and the name of the individual concerned.

**1.2.3** Written reports by independent qualified persons shall be filed by the owner in a systematic manner. The reports shall be kept for no less than 2 years and be available for inspection by authorised persons.

**1.2.4** Where inspections are undertaken by the owner, details of those inspections and any remedial action taken shall be recorded and filed.

## 1.3 Existing buildings

**1.3.1** Compliance schedules are required for existing buildings containing any of the nominated systems (Act s.44(6)). Existing buildings (other than those subject to alteration or change of use) are not required to be upgraded to comply with the New Zealand Building Code (Act s.8).

**1.3.2** It is therefore implicit that the inspection and maintenance procedures for an existing building need only satisfy the requirements appropriate to the system at the time of installation. In such cases the examples given in this part of the Handbook may not be appropriate and this must be taken into account by the territorial authority when issuing compliance schedules for existing buildings.

**1.3.3** Sections 38 and 46 of the Act explain the extent to which existing buildings, subject to alteration or change of use, must satisfy the New Zealand Building Code.



# CS 1 Automatic Sprinkler Systems

## A Inspections

---

Amend 1  
Dec 1993

Automatic sprinkler systems shall be inspected regularly to ensure continued effective operation. Content of the inspections shall be in accordance with NZS 4541 or NZS 4515 as is appropriate for the installation.

Amend 2  
Aug 1994

Frequency of inspection is dependent upon the type of installation, and shall be weekly, monthly, quarterly, annually, 2 yearly and 4 yearly as prescribed in the relevant referenced Standards.

## B Maintenance

---

Amend 3  
Dec 1995

Automatic sprinkler systems shall be maintained in accordance with NZS 4541 or NZS 4515 as is appropriate for the installation.

## C Persons responsible

---

All inspections and maintenance shall be undertaken by independent qualified persons.



## CS 2 Automatic Fire Doors

### A Inspections

Automatic fire doors, including smoke control doors fitted with hold-open devices, shall be inspected regularly to ensure continued effective operation. Inspections shall be monthly and annually and in particular shall check that:

- i) Doors are not damaged or obstructed.
- ii) Door leaves or fire shutters close and latch automatically from any position.
- iii) Double acting doors and double leaf doors stop with the leaves in line with the frame, and seals are in contact at meeting stile and/or frame.
- iv) Smoke control door seals are intact and provide continuous contact.
- v) Hardware is securely fixed.
- vi) No unauthorised hardware is attached.
- vii) Doors in exitways can be opened without keys to allow ready egress from the inside of the building at all times.
- viii) Fire door to frame clearances comply with NZS 4232.
- ix) Manufacturer's label is on the fire door leaf or shutter and frame, and where the door installation has been work that is subject to a building consent, the labels comply with C/AS1 Paragraph 6.19.2 a).
- x) Electrical interlocks on hold-open devices are operable.

Amends 1 and 3

Amend 3 Dec 1995

Amend 3 Dec 1995

Amend 3 Dec 1995

Amends 1 and 6

Amend 3 Dec 1995

### B Maintenance

Automatic fire doors and fire shutters shall be maintained to ensure continued effective operation and fire separation integrity, and in particular compliance with the requirements i) to x) above.

### C Persons Responsible

Monthly inspection and maintenance including items i) to vii) above shall be undertaken by the owner.

Annual inspection and maintenance including all items i) to x) above shall be undertaken by independent qualified persons.

#### COMMENT:

1. Doors included under CS 2 are those which automatically close when a fire alarm is actuated.
2. Compliance Schedule requirements for fire dampers are included under CS 9, and for fire doors and smoke control doors not having hold-open devices, under CS 13.
3. The terms "fire damper" and "fire shutter" are often loosely applied. These are defined terms with meanings being given under the definitions section in this Handbook.

Amend 3 Dec 1995

Amend 1 Dec 1993

Amend 1 Dec 1993

Amend 3 Dec 1995

# CS 3 Emergency Warning Systems

## A Inspections

Emergency warning systems shall be inspected regularly to ensure continued effective operation. Content of the inspections for the different inspection frequencies shall be in accordance with the following referenced Standards:

Amend 1  
Dec 1993

- i) Automatic and manual fire alarms – monthly, annually – NZS 4512.
- ii) Voice communication systems – monthly, 6 monthly – AS 2220 and AS 1851.10.

Amend 3  
Dec 1995

Amend 3  
Dec 1995

## B Maintenance

Emergency warning systems shall be maintained in accordance with the appropriate Standard referenced above.

## C Persons Responsible

All inspection and maintenance shall be undertaken by independent qualified persons.

### COMMENT:

1. F7/AS1 Paragraph 1.1.2 permits three monthly inspections in place of monthly inspections for certain types of buildings.
2. Manual fire alarms come in varying degrees of technical complexity. Where satisfied that the owner has the skill and training appropriate to the technology of the particular system, the territorial authority may permit the monthly inspections of non-monitored manual fire alarms to be undertaken by the owner.

Amend 6  
Jul 2001

Amend 3  
Dec 1995

# CS 4 Emergency Lighting Systems

## A Inspections

Emergency lighting systems shall be inspected regularly to ensure continued effective operation. Existing systems installed in accordance with NZS 6742 shall be inspected fortnightly or monthly (depending on type of installation), and annually. Systems installed in accordance with AS/NZS 2293 shall be inspected six monthly.

Amend 1  
Dec 1993

## B Maintenance

Existing systems installed in accordance with NZS 6742 shall be maintained in accordance with that Standard.

Systems installed in accordance with AS/NZS 2293 shall be maintained in accordance with that Standard.

The maintenance, inspection and reporting procedures should be appropriate to the particular emergency lighting system concerned. Where there are no appropriate procedures in either NZS 6742 or AS/NZS 2293, these should be developed for the systems concerned and submitted to the territorial authority for its approval.

## C Persons Responsible

The fortnightly, monthly or six monthly inspection and maintenance shall be undertaken by the owner who must ensure the person doing the work is appropriately qualified. Annual inspection and maintenance shall be undertaken by independent qualified persons.

Amend 1  
Dec 1993

Amend 5  
Dec 2000

Amend 3  
Dec 1995

# CS 5 Escape Route Pressurisation Systems

## A Inspections

---

Amend 1  
Dec 1993

Escape route pressurisation systems shall be inspected regularly to ensure continued effective operation. Inspections shall be monthly, 6 monthly, and 2 yearly. Inspection content shall be in accordance with AS 1851.6 or the designer's recommendations as is appropriate for the installation.

## B Maintenance

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Escape route pressurisation systems shall be maintained in accordance with AS 1851.6 or the designer's recommended maintenance procedures, as is appropriate.

## C Persons Responsible

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All inspection and maintenance shall be undertaken by independent qualified persons.

# CS 6 Riser Mains

## A Inspections

---

Amend 1  
Dec 1993

Riser mains for Fire Service use shall be inspected regularly to ensure continued effective operation. Inspections shall be:

- For pumps – weekly if diesel powered, or monthly if electrically powered.
- For hydrants – monthly.
- For total installation – annually.

Inspection content shall be in accordance with NZS 4510.

## B Maintenance

---

Riser mains for Fire Service use shall be maintained in accordance with NZS 4510.

## C Persons Responsible

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The monthly inspection of hydrants to detect obvious faults or damage shall be undertaken by the owner. All other inspection and maintenance shall be undertaken by independent qualified persons.

# CS 7 Automatic Backflow Preventers

## A Inspections

---

Amend 1  
Dec 1993 | Automatic backflow preventers connected to a potable water supply shall be inspected and tested annually in accordance with Chapter 5 of the United States Environmental Protection Agency "Cross Connection Control Manual" or AS 2845: Part 3.

Amend 3  
Dec 1995 |

Amends 2  
and 3 | Where non-testable backflow preventers are used in accordance with AS 3500.1, they shall be inspected annually and replaced if leaking or displaying any other fault. (Under AS 3500.1 non-testable backflow preventers are permitted only in a zone downstream of a zone testable device.)

## B Maintenance

---

Amend 3  
Dec 1995 | Automatic backflow preventers shall be immediately repaired or replaced if they fail the inspection test.

## C Persons Responsible

---

The above inspection and maintenance procedures shall be undertaken by independent qualified persons.

# CS 8/1 Passenger Carrying Lifts

## A Inspections

Passenger carrying lift installations shall be inspected annually.

Lifts installed in buildings prior to the introduction of the Building Act (i.e. pre-1993) shall comply with the Power Lift Rules applicable at the time of installation.

For installations that comply with D2/AS1:

– **If the lift design is based on NZS 4332**

Inspections and checks shall be carried out in accordance with the requirements of the attached list.

– **If the lift design is based on EN 81 (Part 1 or 2)**

Inspections shall comprise those given in Clause D.2 “Tests and verifications” of Annex D of that Standard plus the checks required by the attached list. The tests of Clause D.2 shall be performed in such a manner that, despite their repetition, they do not cause excessive wear or impose stresses likely to reduce the safety of the lift. This is the case in particular of the tests on components such as the safety gear and the buffers. Tests on these components shall be carried out with an empty car and at reduced speed.

If D2/AS1 has not been used the owner shall nominate the necessary lift inspections. Such proposals shall be to the approval of the territorial authority.

Amend 7  
Jan 2002  
Amends 3  
and 5

## B Maintenance

Lifts shall be maintained in accordance with the manufacturer’s or supplier’s recommendations.

Where such instructions are not available, maintenance shall be in accordance with a schedule prepared by a person who, on the basis of experience and qualifications, is competent to determine lift maintenance requirements.

Amend 3  
Dec 1995

Maintenance frequency shall reflect the rate of lift usage, but in no case shall it be at greater than 6 monthly intervals. For heavy usage the maintenance could be fortnightly.

Amend 1  
Dec 1993

## C Persons Responsible

The above inspection and maintenance procedures shall be undertaken by independent qualified persons.

## D Reporting

Reports shall include the name of the independent qualified person performing the work along with the dates that the work was performed.

Amend 7  
Jan 2002

# Checklists

List of Inspections and Checks Required for Passenger Carrying Lifts complying with D2/AS1				
		For lift designed to D2/AS1 based on reference document:		Initials and comments
		NZS 4332 <sup>1</sup>	EN 81 <sup>2,3</sup>	
		Inspections and checks required	Checks required	
<b>Machine room</b>				
Amend 5 Dec 2000	Visual inspection of machine beams and supports.	6.1, 6.3, 7.18	✓	
	Check security of machine room door.	7.4.1	6.3.3, 6.3.4	
	Check there are no obstructions or rubbish in the machine room.	7.2, 7.7	✓	
	Check that lighting in machine room functions.	7.14	6.3.6	
	Check ventilation in machine room functions.	7.17	1.6 (7.17)	
Amend 5 Dec 2000	Check for the presence of circuit diagrams and manual.	24.10	1.6 (24.10)	
	Check condition of any emergency hand winding equipment.	8.16	12.5	
<b>Machinery</b>				
Amend 7 Jan 2002	Check condition of traction sheave, with special attention to the grooves.	18.1, 18.2	✓	
	Check condition of divertor sheave and other sheaves.	18.1, 18.2	✓	
	Check the operation of the brake.	8.11	12.4	
	Check the condition of the brake and the brake linings.	8.11	12.4	
	Check the running of machines, gearboxes, motors, generators, their bearings and any commutators.	✓	✓	
Amend 7 Jan 2002	Check operation of governor.	30	9.9	
<b>Lift well</b>				
Amends 5 and 7	Visual check of liftwell enclosure.	12.1, 12.3, 12.4	5.2	
	Check hoisting ropes for equal tension, attachments and terminations correct and in good condition, number of broken wires within acceptable limits, fillings not being shed, all ropes of similar condition.	16, 17	9.2.3.1, 9.5.1	
	Check for presence and legibility of rope data plates.	16.6	-	
	Check that rope retainers are present and correctly fastened.	18.2	9.5.4	
Amend 3 Dec 1995	Visual check of guide rails for straightness and security.	20	✓	
<b>Lift pit</b>				
Amend 7 Jan 2002	Check there are no obstructions or rubbish in the pit.	11.3	1.6 (11.3)	
	Check that lighting in the lift pit and lift well functions.	11.6	5.9	
	Check dryness of pit.	11.3, 11.9	1.6 (11.3, 11.9)	
	Visual check of buffer condition.	10	✓	
Amend 7 Jan 2002	Check function of lift pit safety switch.	11.7	5.7.3.4 (a)	
<b>Lift car exterior</b>				
Amend 3 Dec 1995	Check functioning of car external lighting.	22.20.1	13.6	
	Check condition of guides or rollers.	19.4, 20.15, 20.16	10.2	
	Check function of car top controls.	25.3	8.15	
<b>Lift car</b>				
Amend 7 Jan 2002	Inspect and test safety gear (car and counterweight).	29, 30, 69	9.8	
Amend 5 Dec 2000	Visual check of the car construction and linings.	22	8.3	
Amend 7 Jan 2002	Check door operation, including door protective devices.	23	1.6 (23.6), 8.7	
	Check lift rating plate present.	21.3	15.2.1	
Amends 3 and 5	Check lift controls for correct operation.	25	14.2	
	Check correct operation of alarms and emergency telephone.	28.2	1.6 (28.2.1), 14.2.3, 15.12	
	Check access to all, if any, emergency trapdoor.	22.15	8.12	

Amend 7  
Jan 2002



Amends 3, 5 and 7

List of Inspections and Checks Required for Passenger Carrying Lifts complying with D2/AS1 (Continued)

	For lift designed to D2/AS1 based on reference document:		Initials and comments
	NZS 4332 <sup>1</sup>	EN 81 <sup>2,3</sup>	
	Inspection and checks required	Checks required	
<b>Landings doors</b>			
	Check door locks.	14.1, 14.4	7.7
	Check emergency opening facilities on landing doors.	14.5	7.7.3.2, 15.11
Amend 7 Jan 2002	Check door operation, including door protective devices.	23.6	1.6 (23.6), 7.5
<b>Hydraulic systems</b>			
	Visual check of the hydraulic system, including hoses, ram and cylinder.	34, 35, 37	✓
	Check caisson for moisture.	34.3.7	✓
	Check condition of flow restriction valve.	36.5	12.5.5
	Check operation of the manual lowering means.	36.6	12.9
Amend 7 Jan 2002	Check operation of device to hold car at lowest floor.	31.6	5.7.3
	Check operation of anti-creep device.	60.4	9.5.1
<b>Operation</b>			
Amend 5 Dec 2000	Check operation of door locks, limit switches, slack rope switch, stop switches, trapdoor switch and other safety switches.	7.12, 11.7, 22.15(f), 24.1, 26.1, 26.7, 27, 60	14.1, 14.2
Amend 3 Dec 1995	Check functioning of lift car emergency lighting.	22.20.2.7, 22.21	1.6 (22.20.2.7)
	Check for correct operation under fire conditions.	25.6, 25.7	1.6 (25.6, 25.7)
Amend 5 Dec 2000	Check correct operation of counterweight displacement detector.	25.8	1.6 (25.8)
Amend 3 Dec 1995	Check operation of load weighing device.	26.6	✓
<b>Lifts on access routes for people with disabilities</b>			
Amends 3 and 5	Check floor levelling.	70.1	1.6 (70.1)
Amend 7 Jan 2002	Check door dwell time.	70.3	1.6 (70.3)
	Check controls distinction.	70.4	1.6 (70.4)
Amend 7 Jan 2002	Check correct operation of landing indicators.	70.5	1.6 (70.5)
	Check handrails.	70.6	1.6 (70.6)
<b>General</b>			
	Visual check for any repairs or modifications carried out incorrectly.	✓	✓
	Check maintenance records are properly kept.	✓	✓

Note:

- 1 For lifts designed to NZS 4332 all of the items above must be checked. References given are to clauses of NZS 4332.
- 2 For lifts designed to EN 81 (Part 1 or 2) checks shall be carried out where the item is ticked (✓) or a reference is given. References given are to clauses of EN 81, as modified by D2/AS1. References given in brackets are the relevant clauses imported from NZS 4332.
- 3 These checks are to be made in addition to the tests and verifications of Clause D.2 of Annex D of EN 81.

Amend 7  
Jan 2002

Name of independent qualified person:

Address:

Date of Inspection:

## CS 8/2 Service Lifts

### A Inspections

---

Service lift installations shall be inspected annually. Installations in existing buildings shall comply with the Rules for Power Lifts Not Exceeding 750 Watts (1.H.P.): applicable at the time of installation. Where the lift installation complies with D2/AS2 the attached check list is a suitable basis for the inspection. If D2/AS2 has not been used the owner should provide and work to a similar check list approved by the territorial authority.

### B Maintenance

---

Lifts shall be maintained in accordance with the manufacturer's or supplier's recommendations but at least every six months.

### C Persons Responsible

---

The above inspection and maintenance procedures shall be undertaken by independent qualified persons.

# Checklist

## Checklist Suitable for Service Lifts complying with D2/AS2

References are rules in The Rules For Power Lifts Not Exceeding 750 Watts (I.H.P.)

\* Indicates that the rule has been modified by D2/AS2

	Reference	Initials and comments
<b>Machinery spaces</b>		
Visual inspection of machine beams and supports.	3.1 (a)	
Check security of machine room door.	3.2 (f)*	
Clean the machinery space and clear out any rubbish.	3.2 (f)*	
Check lighting in the machinery space functions.	3.2 (d)	
Check the condition of the controller.		
Check the governor and any position devices.		
Check for the presence of circuit diagrams, manual and log book.		
<b>Machinery</b>		
Check sheaves, pulleys and drums with special attention to the grooves.	6.2	
Check the condition and operation of the brake and the condition of brake linings.	3.1 (b)	
Check the running of the lift machinery.		
Check condition of drive belts.	3.1 (c)	
<b>Lift well</b>		
Inspect and test any safety gear.	1.5	
Visual check of liftwell enclosure.	5	
Check hoisting ropes for equal tension, attachments and terminations correct and in good condition, number of broken wires within acceptable limits, filling not being shed, all ropes of similar condition, correct length of rope.	6.1.1	
Visual check of guide rails for integrity, straightness and security.	9.2*	
Check condition of guide shoes or rollers.		
<b>Lift pit</b>		
Remove any rubbish from the lift pit.		
Check lighting in the pit functions.	4.4 (g)	
Check dryness of pit.	4.4 (b)	
Visual check of buffer condition and other pit components.	4.3*	
<b>Landing stations</b>		
Check door locks.	8.3 (a) and (b), 8.4	
Check lift controls for correct operation.		

**Checklist Suitable for Service Lifts complying with D2/AS2 (Continued)**

References are rules in The Rules For Power Lifts Not Exceeding 750 Watts (I.H.P.)

\* Indicates that the rule has been modified by D2/AS2

	Reference	Initials and comments
<b>Lift car</b>		
Check car doors or safety barriers.		
Check lift car lighting.		
<b>Hydraulic systems</b>		
Visual check of the hydraulic system, including hoses, ram and cylinder.	12*	
Check caisson for moisture.		
Check operation of anti-creep device.	12.7	
Check the operation of control and auxiliary valves.	12.8, 12.9	
<b>Operation</b>		
Check operation of terminal stopping devices, slack rope switch and any emergency switch.	10	
Check landing door interlocks and opening of the door when the car is away from the landing.	8.4 (a)	
<b>General</b>		
Visually check for any repairs or modifications carried out.		
Maintain full records of maintenance and inspections.		
<p><b>Name of independent qualified person:</b> <input type="text"/></p> <p><b>Address:</b> <input type="text"/></p> <p><b>Date of Inspection:</b> <input type="text"/></p>		

# CS 8/3 Escalators and Moving Walks

## **A Inspections**

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Escalators and moving walks shall be inspected annually. Where the installation complies with D2/AS3 the attached check list is a suitable basis for the inspection. If D2/AS3 has not been used the owner should provide and work to a similar check list approved by the territorial authority.

## **B Maintenance**

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Escalators and moving walks shall be maintained in accordance with the manufacturer's or supplier's recommendations.

## **C Persons Responsible**

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The above inspection and maintenance procedures shall be undertaken by independent qualified persons.

# Checklist

<b>Check List Suitable for Escalators and Moving Walks</b>		
References are to clauses in EN 115		
* Indicates that the rule has been modified by D2/AS3		
	<b>Reference</b>	<b>Initials and comments</b>
Safety devices as appropriate.		
Switches to inspection doors.	5.1.3	
Stop switch in machinery space.	6.3.3*	
Overspeed protection.	12.5	
Emergency stop devices.	14.2.2.3.1	
Other stop switches.	14.2.2.1 (a) to (h)	
Brakes.	12.4, 16.2.1 (d)	
Driving elements for visible signs of wear and tear and for insufficient tension of belts and chains.	9.0*	
Steps, pallets or the belt for defects, true run and guidance.	8.0*	
Dimensions and tolerances.	0.1.2, 11.0	
Combs for proper condition and adjustment.	8.3, 11.3	
Balustrade interior panelling and the skirting.	5.1.5.4 to 5.1.5.6	
Handrails.	7.0*	
<b>Name of independent qualified person:</b>	<input type="text"/>	
<b>Address:</b>	<input type="text"/>	
<b>Date of Inspection:</b>	<input type="text"/>	

# CS 9 Mechanical Ventilation and Air Conditioning Systems

## A Inspections

Mechanical ventilation and air conditioning systems shall be inspected regularly to ensure continued effective operation. Inspection content and frequency shall be as follows:

- i) Mechanical ventilation and air conditioning systems shall be inspected in accordance with either Part 2 of NZS 4302 or Section 2 of AS/NZS 3666.2 and the designer's recommendations for functional operation and inspection frequency. Where the designer's recommendations are not available, the requirements of either Part 2 of NZS 4302 or Section 2 of AS/NZS 3666.2 shall be met through compliance with an inspection and maintenance schedule prepared by a person who, on the basis of experience and qualifications, is competent to design heating, ventilating and air conditioning systems.
- ii) Smoke control systems, including fire dampers, shall be inspected monthly, quarterly, half-yearly or yearly, as required by AS 1851.6, or in accordance with the designer's recommendations as is appropriate.

Amend 9  
Apr 2004

Amend 1  
Dec 1993

Amend 3  
Dec 1995

Amend 9  
Apr 2004

## B Maintenance

Mechanical ventilation and air conditioning systems shall be maintained in accordance with either Part 2 of NZS 4302 and AS 1851.6 or the designer's recommended maintenance procedures as is appropriate to the installation. Specific design and designs in accordance with G4/AS1 shall include a maintenance manual. Particular attention must be given to systems incorporating cooling towers where organisms such as Legionella may be present. The procedures listed in either Section 309.3 of NZS 4302, or Section 2 of AS/NZS 3666.2 must be carried out.

To ensure adequate chemical control is being achieved in cooling towers with automatic chemical dosing, bacteriological tests shall be performed as detailed in the table below.

Cooling towers without automatic chemical dosing shall, in addition to the table below, be subject to weekly dipslide tests. When dipslide tests have a result of greater than 10<sup>5</sup> cfu/ml, control strategies in AS/NZS 3666.3 Table 3.2 must be implemented.

Amend 1  
Dec 1993

Amend 1  
Dec 1993

Amend 9  
Apr 2004

Amend 1  
Dec 1993

Amend 9  
Apr 2004

Amend 9  
Apr 2004

**Table 1: Cooling tower testing**

Cooling tower with automatic chemical dosing	Time	Test method	Test result levels and control strategies <sup>2</sup>
Legionella:	Monthly	AS/NZS 3896 <sup>1</sup>	AS/NZS 3666.3 <sup>2</sup> Table 3.1
Heterotrophic microorganisms	Monthly	AS 4276.3.1 <sup>1</sup>	AS/NZS 3666.3 Table 3.2

**Cooling tower without automatic chemical dosing**

In addition to the testing above, cooling towers without automatic chemical dosing must also do the following test.

Heterotrophic microorganisms	Weekly	Dipslide	AS/NZS 3666.3 Table 3.2
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**Note 1**

Tests to AS/NZS 3896 and AS 4276.3.1 shall be undertaken by an IANZ biologically accredited laboratory.

**Note 2**

Legionella tests with results greater than or equal to 1000 cfu/ml should be notified within 48 hours to the local Medical Officer of Health at the Public Health Service of the District Health Board, and the Required Control Strategy from Table 3.1 of AS/NZS 3666.3 shall be implemented.

**Note 3**

Industrial cooling towers, or cooling towers used for industrial process that are not part of a building as defined in section 3 of the Building Act 1991, are not required by the Building Act to be included on the compliance schedule. Testing for Legionella in these cooling towers is required by employers to ensure a safe working environment for their employees under the Health and Safety in the Workplace Act legislation.

Amend 9  
Apr 2004



**C Persons Responsible**

All inspection and maintenance shall be undertaken by independent qualified persons.

**COMMENT:**

1. A mechanical ventilation or air conditioning system is required by section 44 (1) (i) to be on the compliance schedule only if serving all or a major part of the building.

However, if a specialist system does not serve all or a major part of the building, but:

- can spread pathogens or toxic gases from their source to other building spaces, and
- those pathogens or toxic gases would remain undetected until illness has occurred,

then the system could well come within section 44 (1) (j) and should be listed in the compliance schedule, see CS 10.

2. Mechanical ventilation or air conditioning systems which are ducted through smoke or fire separations and could spread fire or smoke to other firecells are to be included on this compliance schedule. For example, a system that included a central plant serving more than one floor, or plant serving a single floor having more than one firecell or smokecell.

3. Where failure of a system is readily apparent and likely to result in occupant complaints before health or safety are threatened, and does not serve all or a major part of the building, the system need not be a compliance schedule item. Examples are package units serving a single office and extract fans in cooking areas and toilet spaces, where failure may cause annoyance or discomfort but the effects are unlikely to be life threatening.

Amend 9  
Apr 2004

Amends 3  
and 5

# CS 10 Other Mechanical, Electrical, Hydraulic or Electronic Systems

Any other mechanical, electrical, hydraulic or electronic system whose proper operation is necessary for compliance with the Building Act, shall have inspection and maintenance procedures determined by a person who, on the basis of experience and qualifications, is competent to do the work.

Amend 1  
Dec 1993

The procedures shall be contained in the compliance schedule and include the nature and frequencies of inspection and the required maintenance, and identify which activities may be undertaken by the owner, and which must be undertaken by independent qualified persons.

Amend 1  
Dec 1993

**COMMENT:**

1. This requirement is intended to provide the necessary flexibility for including in compliance schedules:
  - specialist building elements generally peculiar to a limited number of buildings, and
  - new systems which may be developed in the future.
2. The systems included should be restricted to those in which a failure is likely to go undetected until a life threatening situation has occurred. Examples are laboratory fume cupboards (for which inspection and maintenance procedures are given in NZS 7203), automatic locking security doors which could trap people within a building, and exitway pressurisation systems.

Amend 3  
Dec 1995



# CS 11 Building Maintenance Units

## A Inspections

Building maintenance units shall be inspected 3 monthly, 6 monthly and annually.

Inspections shall be in accordance with Clauses 21.1.4 and 21.1.5 of BS 6037: 1990. The annual testing shall be as described in Clause 19.2 of that document.

Amend 2  
Aug 1994

## B Maintenance

Building maintenance units shall be maintained in accordance with Clause 21 of BS 6037: 1990, together with any additional requirements of the manufacturer.

Amend 2  
Aug 1994

### COMMENT:

In using BS 6037: 1990, references to overseas legislation shall be read as references to corresponding New Zealand legislation.

Amend 2  
Aug 1994

## C Persons Responsible

The 3 monthly inspections shall be undertaken by the owner. The 6 monthly and annual inspections and all maintenance procedures shall be undertaken by independent qualified persons.

# CS 12 Signs

## A Inspections

---

Amend 1  
Dec 1993

Signs shall be inspected regularly to ensure continued effectiveness, and in particular that they are of the correct type, are present and in the right locations, and are legible.

Inspections of signs required for emergency purposes to be illuminated, shall (as for emergency lighting) be done monthly. For other signs inspections shall be done annually.

## B Maintenance

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Signs shall be refurbished before they become illegible, and shall be replaced immediately should they be missing.

Defects in illuminated emergency signs shall be remedied immediately they are apparent.

## C Persons Responsible

---

The above monthly inspection shall be undertaken by the building owner. Annual inspection shall be undertaken by independent qualified persons.

Amend 1  
Dec 1993

Maintenance shall be undertaken by the owner.

## CS 13 Means of Escape

### A Inspections

Means of escape shall be inspected:

Amend 3  
Dec 1995

- Daily, when the building is in use, for crowd occupancies (purpose groups CS, CL, CO and CM).
- Monthly in other occupancies.
- Annually for all occupancies.

Inspections shall be made to ensure that the passive and active features of the means of escape continue to perform as designed for safe evacuation, and in particular that:

- i) Escape routes are kept clear of obstacles and hazards such as uneven flooring or insecure handrails at all times.
- ii) Exit doors are not locked, barred, or blocked so as to prevent occupants from leaving the building in the event of an emergency without the use of a key.
- iii) Smoke-control doors, fire doors and associated fittings including self-closing devices, are undamaged and operate correctly. The doors are not kept open by methods other than hold-open devices that comply with the New Zealand Building Code and are in good working order.
- iv) Sliding automatic doors fitted with emergency fail-safe systems operate as designed.
- v) Stairwells and passageways which are designed specifically for means of escape from fire are not used as places of storage or places where refuse is allowed to accumulate.
- vi) Flammable cleaning liquid or material or any other like flammable liquid or material is not stored near or within any part of the building used as a means of escape from fire, and is in non-combustible containers with close fitting lids.

Amend 3  
Dec 1995

Amend 1  
Dec 1993

vii) Fire separations show no signs of damage or deterioration which could adversely affect their fire resisting function, particularly with respect to closures and fire stopping.

viii) No new surface coatings have been applied unless their fire properties have been confirmed as acceptable by an independent qualified person.

Amend 1  
Dec 1993

### B Maintenance

Means of escape shall be maintained at all times in a safe condition with particular attention to freedom from obstructions and from storage of combustibles, adequacy of handrails, proper operation of fire and smoke control doors, and ease of opening any doors leading into the escape route and at the final exit.

For automatic sliding doors, AS 4085 (also published as NZS 4239) Appendix A provides suitable guidelines for determining maintenance procedures.

Amends 1  
and 3

### C Persons Responsible

Daily and monthly inspections shall be undertaken by the building owner, and annual inspections by independent qualified persons. Maintenance shall be undertaken by the owner.

# CS 14 Safety Barriers

## A Inspections

- a) All safety barriers shall be inspected annually to ensure that:
- i) the barrier is structurally sound and has not become damaged or corroded, and
  - ii) no materials, rubbish or other objects are located near the safety barrier so as to permit the barrier to be climbed by a child under the age of six years.
- b) Safety barriers required for compliance with the Fencing of Swimming Pools Act 1987 shall in addition to the requirements of a) above be inspected quarterly with particular attention to ensure that:

Automatic closers on gates or doors effectively return the gate or door to the closed position and operate the latching device when the gate or door is released from a stationary position giving an opening width of no greater than 150 mm.

Amend 1  
Dec 1993

## B Maintenance

Safety barriers shall be maintained in a structurally sound condition and, where applicable, self-closing gates and other components required for the protection of children shall be kept operable. Defects shall be remedied immediately they are apparent.

## C Persons Responsible

The quarterly inspection procedures shall be undertaken by the owner. Annual inspections shall be undertaken by independent qualified persons. All maintenance shall be undertaken by the owner.

Amend 1  
Dec 1993



# CS 15 Access and Facilities for People with Disabilities

## A Inspections

Amend 1  
Dec 1993

Access and facilities for people with disabilities shall be inspected 6 monthly and annually to ensure that the building's provisions (if any) for access and facilities for people with disabilities are kept in good working order.

The inspection shall check the adequacy of accessible routes from street level or car park to spaces within the building, with particular attention to:

Usability of accessible route to the principal entrance.

Manoeuvre spaces in:

- accessible routes,
- accessible car parking spaces,
- accessible toilet areas,
- accessible laundry areas,
- accessible kitchens.

Handrails.

Lighting levels.

Door hardware.

Grab rails in toilets.

Lifts:

- door opening times,
- location and height of control panels,
- handrails.

## B Maintenance

Defects shall be remedied immediately they become apparent.

## C Persons Responsible

Amend 1  
Dec 1993

The 6 monthly inspections shall be undertaken by the owner. The annual inspections shall be undertaken by independent qualified persons. Maintenance shall be undertaken by the OWNER.

# CS 16 Fire Hose Reels

## A Inspections

---

Fire hose reels shall be inspected monthly and annually to ensure continued effective operation. Monthly inspections shall be in accordance with NZS 4503 Clause 6.1.3, and annual inspections with Clause 6.2.

Amend 3  
Dec 1995

## B Maintenance

---

Defects in fire hose reels shall be remedied immediately they are apparent.

## C Persons Responsible

---

Maintenance and monthly inspections shall be undertaken by the owner. Annual inspections shall be undertaken by an independent qualified person.

The following Approved Documents have been published by the Building Industry Authority. AS indicates an acceptable solution, VM indicates a verification method. The Approved Document for any topic includes both the acceptable solution and verification method (where one has been adopted by the Authority).

**B STABILITY**

.....			
B1	Structure		
	AS1	VM1	General
	AS2		Timber barriers
	AS3		Small chimneys
		VM4	Foundations
B2	AS1	VM1	Durability

**C FIRE SAFETY**

.....			
C1	AS1	VM1	Fire safety in buildings

**D ACCESS**

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# A General Provisions

## A1 Classified Uses

### FIRST SCHEDULE—*continued*

#### Clause A1—CLASSIFIED USES

##### 1.0 EXPLANATION

**1.0.1** For the purposes of this building code *buildings* are classified according to type, under seven categories.

**1.0.2** A *building* with a given classified use may have one or more *intended uses* as defined in the Act.

##### 2.0 Housing

**2.0.1** Applies to *buildings* or use where there is self care and service (internal management). There are three types:

##### 2.0.2 Detached Dwellings

Applies to a *building* or use where a group of people live as a single household or family. Examples: a holiday cottage, boarding house accommodating fewer than 6 people, dwelling or hut.

##### 2.0.3 Multi-unit Dwelling

Applies to a *building* or use which contains more than one separate household or family. Examples: an attached dwelling, flat or multi-unit apartment.

##### 2.0.4 Group Dwelling

Applies to a *building* or use where groups of people live as one large extended family. Examples: within a commune or marae.

##### 3.0 COMMUNAL RESIDENTIAL

**3.0.1** Applies to *buildings* or use where assistance or care is extended to the *principal users*. There are two types.

##### 3.0.2 Community Service

Applies to a residential *building* or use where limited assistance or care is extended to the *principal users*. Examples: a boarding house, hall of residence, holiday cabin, hostel, hotel, motel, nurses' home, retirement village, time-share accommodation, a work camp, or camping ground.

##### 3.0.3 Community Care

Applies to a residential *building* or use where a large degree of assistance or care is extended to the *principal users*. There are two types:

- a) **Unrestrained;** where the *principal users* are free to come and go. Examples: a hospital, an old people's home or a health camp.
- b) **Restrained;** where the *principal users* are legally or physically constrained in their movements. Examples: a borstal or drug rehabilitation centre, an old people's home where substantial care is extended, a prison or hospital.

##### 4.0 COMMUNAL NON-RESIDENTIAL

**4.0.1** Applies to a *building* or use being a meeting place for people where care and service is provided by people other than the *principal users*. There are two types:

**4.0.2 Assembly Service**

Applies to a *building* or use where limited care and service is provided. Examples: a church, cinema, clubroom, hall, museum, public swimming pool, stadium, theatre, or whare runanga (the assembly house).

**4.0.3 Assembly Care**

Applies to a *building* or use where a large degree of care and service is provided. Examples: an early childhood centre, college, day care institution, centre for handicapped persons, kindergarten, school or university.

**5.0 COMMERCIAL**

**5.0.1** Applies to a *building* or use in which any natural resources, goods, services or money are either developed, sold, exchanged or stored. Examples: an amusement park, auction room, bank, car-park, catering facility, coffee bar, computer centre, fire station, funeral parlour, hairdresser, library, office (commercial or government), police station, post office, public laundry, radio station, restaurant, service station, shop, showroom, storage facility, television station or transport terminal.

**6.0 INDUSTRIAL**

**6.0.1** Applies to a *building* or use where people use material and physical effort to:

- (a) extract or convert natural resources,
- (b) produce goods or energy from natural or converted resources,
- (c) repair goods, or
- (d) store goods (ensuing from the industrial process).

Examples: an agricultural building, agricultural processing facility, aircraft hanger, factory, power station, sewage treatment works, warehouse or utility.

**7.0 OUTBUILDINGS**

**7.0.1** Applies to a *building* or use which may be included within each classified use but are not intended for human habitation, and are accessory to the principal use of associated *buildings*. Examples: a carport, farm *building*, garage, greenhouse, machinery room, private swimming pool, public toilet, or shed.

**8.0 ANCILLARY**

**8.0.1** Applies to a *building* or use not for human habitation and which may be exempted from some amenity provisions, but which are required to comply with structural and safety-related aspects of the *building code*. Examples: a bridge, derrick, fence, free standing outdoor fireplace, jetty, mast, path, platform, pylon, retaining wall, tank, tunnel or dam.



**A2 Interpretation**

This Clause of the New Zealand Building Code lists defined words used within the code.

Those definitions, plus defined word or terms used in the Approved Documents are included in the section on definitions in this Handbook.



# B Stability

## B1 Structure

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FIRST SCHEDULE— <i>continued</i>		
<b>Clause B1—STRUCTURE</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
<b>B1.1</b> The objective of this provision is to:		
<ul style="list-style-type: none"> <li>(a) Safeguard people from injury caused by structural failure,</li> <li>(b) Safeguard people from loss of <i>amenity</i> caused by structural behaviour, and</li> <li>(c) Protect <i>other property</i> from physical damage caused by structural failure.</li> </ul>		
<b>FUNCTIONAL REQUIREMENT</b>		
<b>B1.2</b> <i>Buildings, building elements and sitework</i> shall withstand the combination of loads that they are likely to experience during <i>construction or alteration</i> and throughout their lives.		
<b>PERFORMANCE</b>		
<b>B1.3.1</b> <i>Buildings, building elements and sitework</i> shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during <i>construction or alteration</i> and throughout their lives.		
<b>B1.3.2</b> <i>Buildings, building elements and sitework</i> shall have a low probability of causing loss of <i>amenity</i> through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during <i>construction or alteration</i> when the <i>building</i> is in use.		
<b>B1.3.3</b> Account shall be taken of all physical conditions likely to affect the stability of <i>buildings, building elements and sitework</i> , including:		
<ul style="list-style-type: none"> <li>(a) Self-weight,</li> <li>(b) Imposed gravity loads arising from use,</li> <li>(c) Temperature,</li> </ul>		

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
(d) Earth pressure,	
(e) Water and other liquids,	
(f) Earthquake,	
(g) Snow,	
(h) Wind,	
(i) <i>Fire</i> ,	
(j) Impact,	
(k) Explosion,	
(l) Reversing or fluctuating effects,	
(m) Differential movement,	
(n) Vegetation,	
(o) Adverse effects due to insufficient separation from other <i>buildings</i> ,	
(p) Influence of equipment, services, non-structural elements and contents,	
(q) Time dependent effects including creep and shrinkage, and	
(r) Removal of support.	
<b>B1.3.4</b> Due allowance shall be made for:	
(a) The consequences of failure,	
(b) The intended use of the <i>building</i> ,	
(c) Effects of uncertainties resulting from <i>construction</i> activities, or the sequence in which <i>construction</i> activities occur,	
(d) Variation in the properties of materials and the characteristics of the site, and	
(e) Accuracy limitations inherent in the methods used to predict the stability of <i>buildings</i> .	
<b>B1.3.5</b> The demolition of <i>buildings</i> shall be carried out in a way that avoids the likelihood of premature collapse.	
<b>B1.3.6</b> <i>Sitework</i> , where necessary, shall be carried out to:	

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FIRST SCHEDULE—*continued*

**Provisions**

**Limits on application**

- (a) Provide stability for *construction* on the site, and
- (b) Avoid the likelihood of damage to *other property*.

**B1.3.7** Any *sitework* and associated supports shall take account of the effects of:

- (a) Changes in ground water level,
- (b) Water, weather and vegetation, and
- (c) Ground loss and slumping.

## B2 Durability

## FIRST SCHEDULE—continued

## Clause B2—DURABILITY

## Provisions

## OBJECTIVE

**B2.1** The objective of this provision is to ensure that a *building* will throughout its life continue to satisfy the other objectives of this code.

## FUNCTIONAL REQUIREMENT

**B2.2** *Building* materials, components and *construction* methods shall be sufficiently durable to ensure that the *building*, without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the *building*.

## PERFORMANCE

**B2.3.1** *Building elements* must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the *specified intended life* of the *building*, if stated, or:

- (a) The life of the building, being not less than 50 years, if:
- (i) Those *building elements* (including floors, walls, and fixings) provide structural stability to the *building*, or
  - (ii) Those *building elements* are difficult to access or replace, or
  - (iii) Failure of those *building elements* to comply with the *building code* would go undetected during both normal use and maintenance of the *building*.
- (b) 15 years if:
- (i) Those *building elements* (including the *building* envelope, exposed plumbing in the subfloor space, and in-built chimneys and flues) are moderately difficult to access or replace, or

## Limits on application

Performance B2.3.1 applies from the time of issue of the applicable *code compliance certificate*. *Building elements* are not required to satisfy a durability performance which exceeds the *specified intended life* of the *building*.

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**FIRST SCHEDULE—continued****Provisions**

- (ii) Failure of those *building elements* to comply with the *building code* would go undetected during normal use of the *building*, but would be easily detected during normal maintenance.
- (c) 5 years if:
  - (i) The *building elements* (including services, linings, renewable protective coatings, and *fixtures*) are easy to access and replace, and
  - (ii) Failure of those *building elements* to comply with the *building code* would be easily detected during normal use of the *building*.

**B2.3.2** Individual *building elements* which are components of a *building* system and are difficult to access or replace must either:

- (a) All have the same durability, or
- (b) Be installed in a manner that permits the replacement of *building elements* of lesser durability without removing *building elements* that have greater durability and are not specifically designed for removal and replacement.

**Limits on application**

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# C Fire Safety

## C1 Outbreak of Fire

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### FIRST SCHEDULE—*continued*

#### Clause C1—OUTBREAK OF FIRE

##### Provisions

##### OBJECTIVE

**C1.1** The objective of this provision is to safeguard people from injury or illness caused by *fire*.

##### FUNCTIONAL REQUIREMENT

**C1.2** In *buildings* fixed appliances using the controlled combustion of solid, liquid or gaseous fuel, shall be installed in a way which reduces the likelihood of *fire*.

##### PERFORMANCE

**C1.3.1** Fixed appliances and services shall be installed so as to avoid the accumulation of gases within the installation and in *building* spaces, where heat or ignition could cause uncontrolled combustion or explosion.

**C1.3.2** Fixed appliances shall be installed in a manner that does not raise the temperature of any *building element* by heat transfer or concentration to a level that would adversely affect its physical or mechanical properties or function.

##### Limits on application

## C2 Means of Escape

**FIRST SCHEDULE—continued****Clause C2—MEANS OF ESCAPE****Provisions****Limits on application****OBJECTIVE**

**C2.1** The objective of this provision is to:

- (a) Safeguard people from injury or illness from a *fire* while escaping to a *safe place*, and
- (b) Facilitate *fire* rescue operations.

**FUNCTIONAL REQUIREMENT**

**C2.2** Buildings shall be provided with *means of escape from fire* which:

- (a) Give people *adequate* time to reach a *safe place* without being overcome by the effects of *fire*, and
- (b) Give fire service personnel *adequate* time to undertake rescue operations.

**PERFORMANCE**

**C2.3.1** The number of *open paths* available to each person escaping to an *exitway* or *final exit* shall be appropriate to:

- (a) The *travel distance*.
- (b) The number of occupants,
- (c) The *fire hazard*, and
- (d) The *fire safety systems* installed in the *firecell*.

**C2.3.2** The number of *exitways* or *final exits* available to each person shall be appropriate to:

- (a) The *open path travel distance*,
- (b) The *building height*,
- (c) The number of occupants,
- (d) The *fire hazard*, and
- (e) The *fire safety systems* installed in the *building*.

**C2.3.3** *Escape routes* shall be:

- (a) Of *adequate* size for the number of occupants,

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**FIRST SCHEDULE—continued****Provisions**

- (b) Free of obstruction in the direction of escape,
- (c) Of length appropriate to the mobility of the people using them,
- (d) Resistant to the spread of *fire* as required by Clause C3 “Spread of Fire”,
- (e) Easy to find as required by Clause F8 “Signs”,
- (f) Provided with *adequate* illumination as required by Clause F6 “Lighting for Emergency”, and
- (g) Easy and safe to use as required by Clause D1.3.3 “Access Routes”.

**Limits on application**

Performance C2.3.3(b) must not prevent a door that forms part of an *escape route* from being locked if the person who locks it is satisfied that no-one is in that part of the *building* served by the *escape route* and that no one is likely to enter that part of the *building*, except in an emergency, without unlocking that door.

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## C3 Spread of Fire

FIRST SCHEDULE—*continued*

## Clause C3—SPREAD OF FIRE

## Provisions

## Limits on application

**OBJECTIVE**

**C3.1** The objective of this provision is to:

- (a) Safeguard people from injury or illness when evacuating a *building* during *fire*.
- (b) Provide protection to fire service personnel during firefighting operations.
- (c) Protect adjacent *household units*, other residential units, and *other property* from the effects of *fire*.
- (d) Safeguard the environment from adverse effects of *fire*.

**FUNCTIONAL REQUIREMENT**

**C3.2** *Buildings* shall be provided with safeguards against *fire* spread so that:

- (a) Occupants have time to escape to a *safe place* without being overcome by the effects of *fire*,
- (b) Firefighters may undertake rescue operations and protect property,
- (c) Adjacent *household units*, other residential units, and *other property* are protected from damage, and
- (d) Significant quantities of *hazardous substances* are not released into the environment during *fire*.

Requirement C3.2(d) applies only to *buildings* where significant quantities of *hazardous substances* are stored and processed.

**PERFORMANCE**

**C3.3.1** Interior surface finishes on walls, floors, ceilings and suspended *building elements*, shall resist the spread of *fire* and limit the generation of toxic gases, smoke and heat, to a degree appropriate to:

- (a) The *travel distance*,
- (b) The number of occupants,

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## FIRST SCHEDULE—continued

## Provisions

- (c) The *fire hazard*, and
  - (d) The active *fire safety systems* installed in the *building*.
- C3.3.2** *Fire separations* shall be provided within *buildings* to avoid the spread of *fire* and smoke to:
- (a) Other *firecells*,
  - (b) Spaces intended for sleeping, and
  - (c) *Household units* within the same *building* or *adjacent buildings*.
  - (d) *Other property*.
- C3.3.3** *Fire separations* shall:
- (a) Where openings occur, be provided with *fire resisting closures* to maintain the *integrity* of the *fire separations* for an *adequate* time, and
  - (b) Where penetrations occur, maintain the *fire resistance rating* of the *fire separation*.
- C3.3.4** *Concealed spaces* and cavities within *buildings* shall be sealed and subdivided where necessary to inhibit the unseen spread of *fire* and smoke.
- C3.3.5** *External walls* and roofs shall have resistance to the spread of *fire*, appropriate to the *fire load* within the *building* and to the proximity of other *household units*, other residential units and *other property*.
- C3.3.6** Automatic *fire* suppression systems shall be installed where people would otherwise be:
- (a) Unlikely to reach a safe place in *adequate* time because of the number of storeys in the *building*,
  - (b) Required to remain within the *building* without proceeding directly to a *final exit*, or where the *evacuation time* is excessive,

## Limits on application

Performance C3.3.2(b) does not apply to *Detached Dwellings* or within *household units* of *Multi-unit Dwellings*.

Performance C3.3.4 shall not apply to *Detached Dwellings*.

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**FIRST SCHEDULE—continued****Provisions**

(c) Unlikely to reach a *safe place* due to confinement under institutional care because of mental or physical disability, illness or legal detention, and the *evacuation time* is excessive, or

(d) At high risk due to the *fire load* and *fire hazard* within the *building*.

**C3.3.7** Air conditioning and mechanical ventilation systems shall be constructed to avoid circulation of smoke and *fire* between *firecells*.

**C3.3.8** Where an automatic smoke control system is installed, it shall be constructed to:

- (a) Avoid the spread of *fire* and smoke between *firecells*, and
- (b) Protect *escape routes* from smoke until the occupants have reached a *safe place*.

**C3.3.9** The *fire safety systems* installed shall facilitate the specific needs of fire service personnel to:

- (a) Carry out rescue operations, and
- (b) Control the spread of *fire*.

**C3.3.10** Environmental protection systems shall ensure a low probability of *hazardous substances* being released to:

- (a) Soils, vegetation or natural waters,
- (b) The atmosphere, and
- (c) *Sewers* or public *drains*.

**Limits on application**

Performance C3.3.10 applies only to *buildings* where significant quantities of *hazardous substances* are stored or processed.

## C4 Structural Stability During Fire

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FIRST SCHEDULE—*continued*

## Clause C4—STRUCTURAL STABILITY DURING FIRE

## Provisions

## Limits on application

**OBJECTIVE**

**C4.1** The objective of this provision is to:

- (a) Safeguard people from injury due to loss of structural stability during *fire*, and
- (b) Protect *household units and other property* from damage due to structural instability caused by *fire*.

**FUNCTIONAL REQUIREMENT**

**C4.2** *Buildings* shall be constructed to maintain structural stability during *fire* to:

- (a) Allow people *adequate* time to evacuate safely,
- (b) Allow fire service personnel *adequate* time to undertake rescue and firefighting operations, and
- (c) Avoid collapse and consequential damage to adjacent *household units or other property*.

**PERFORMANCE**

**C4.3.1** Structural elements of *buildings* shall have *fire* resistance appropriate to the function of the elements, the *fire load*, the *fire intensity*, the *fire hazard*, the height of the *buildings* and the *fire* control facilities external to and within them.

**C4.3.2** Structural elements shall have a *fire* resistance of no less than that of any element to which they provide support within the same *firecell*.

**C4.3.3** Collapse of elements having lesser *fire* resistance shall not cause the consequential collapse of elements required to have a higher *fire* resistance.





# D Access

## D1 Access Routes

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### FIRST SCHEDULE—continued

#### Clause D1—ACCESS ROUTES

##### Provisions

##### Limits on application

#### OBJECTIVE

**D1.1** The objective of this provision is:

- (a) Safeguard people from injury during movement into, within and out of *buildings*,
- (b) Safeguard people from injury resulting from the movement of vehicles into, within and out of *buildings*, and
- (c) Ensure that *people with disabilities* are able to enter and carry out normal activities and functions within *buildings*.

Objective D1.1(c) shall apply only to those *buildings* to which section 25 of the Disabled Persons Community Welfare Act 1975 applies.

#### FUNCTIONAL REQUIREMENT

**D1.2.1** *Buildings* shall be provided with reasonable and adequate access to enable safe and easy movement of people.

Requirement D1.2.1 shall not apply to *Ancillary buildings* or *Outbuildings*.

**D1.2.2** Where a *building* is provided with loading or parking spaces, they shall be constructed to permit safe and easy unloading and movement of vehicles, and to avoid conflict between vehicles and pedestrians.

#### PERFORMANCE

**D1.3.1** *Access routes* shall enable people to:

- (a) Safely and easily approach the main entrance of *buildings* from the apron or *construction edge* of a *building*,
- (b) Enter *buildings*,
- (c) Move into spaces within *buildings* by such means as corridors, doors, stairs, ramps and lifts,
- (d) Manoeuvre and park cars, and
- (e) Manoeuvre and park delivery vehicles required to use the loading space.

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
<p><b>D1.3.2</b> At least one <i>access route</i> shall have features to enable <i>people with disabilities</i> to:</p> <p>(a) Approach the <i>building</i> from the street boundary or, where required to be provided, the <i>building</i> car park,</p> <p>(b) Have access to the internal space served by the principal access, and</p> <p>(c) Have access to and within those spaces where they may be expected to work or visit, or which contain facilities for personal hygiene as required by Clause G1 “Personal Hygiene”.</p> <p><b>D1.3.3</b> Access routes shall:</p> <p>(a) Have <i>adequate</i> activity space,</p> <p>(b) Be free from dangerous obstructions and from any projections likely to cause an obstruction,</p> <p>(c) Have a safe cross fall, and safe slope in the direction of travel,</p> <p>(d) Have <i>adequate</i> slip-resistant walking surfaces under all conditions of normal use,</p> <p>(e) Include stairs to allow access to upper floors irrespective of whether an escalator or lift has been provided,</p> <p>(f) Have stair treads, and ladder treads or rungs which:</p> <p>(i) provide <i>adequate</i> footing, and</p> <p>(ii) have uniform rise within each flight and for consecutive flights,</p> <p>(g) Have stair treads with a leading edge that can be easily seen,</p>	<p>Performance D1.3.2 shall not apply to <i>Housing, Outbuildings, Ancillary buildings, and to Industrial buildings</i> where no more than 10 people are employed.</p>

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
(h) Have stair treads which prevent children falling through or becoming held fast between treads, where open risers are used,	Performance D1.3.3 (h) shall not apply within <i>Industrial buildings, Outbuildings</i> and <i>Ancillary buildings</i> .
(i) Not contain isolated steps,	Performance D1.3.3 (i) shall not apply with <i>Detached Dwellings</i> or within <i>household units</i> of <i>Multi-unit Dwellings</i> , or to <i>Outbuildings</i> and <i>Ancillary buildings</i> .
(j) Have smooth, reachable and graspable <i>handrails</i> to provide support and to assist with movement along a stair or ladder,	Performance D1.3.3 (j) shall not apply to isolated steps.
(k) Have <i>handrails</i> of <i>adequate</i> strength and rigidity as required by Clause B1 “Structure”,	
(l) Have landings of appropriate dimensions and at appropriate intervals along a stair or ramp to prevent undue fatigue,	
(m) Have landings of appropriate dimensions where a door opens from or onto a stair, ramp or ladder so that the door does not create a hazard, and	
(n) Have any automatically controlled doors <i>constructed</i> to avoid the risk of people becoming caught or being struck by moving parts.	
<b>D1.3.4</b> An <i>accessible route</i> , in addition to the requirement of Clause D1.3.3, shall:	
(a) Be easy to find, as required by Clause F8 “Signs”,	
(b) Have <i>adequate</i> activity space to enable a person in a wheelchair to negotiate the route while permitting an ambulant person to pass,	

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
<p>(c) Include a lift complying with Clause D2 “Mechanical Installations for Access” to upper floors where:</p> <p>(i) <i>buildings</i> are four or more storeys high,</p> <p>(ii) <i>buildings</i> are three storeys high and have a total design occupancy of 50 or more persons on the two upper floors,</p> <p>(iii) <i>buildings</i> are two storeys high and have a total design occupancy of 40 or more persons on the upper floor, or</p> <p>(iv) an upper floor, irrespective of design occupancy, is to be used for the purposes of public reception areas of banks, central, regional and local government offices and facilities, hospitals, medical and dental surgeries, and medical, paramedical and other primary health care centres,</p> <p>(d) Contain no thresholds or upstands forming a barrier to an unaided wheelchair user,</p> <p>(e) Have means to prevent the wheel of a wheelchair dropping over the side of the <i>accessible route</i>,</p> <p>(f) Have doors and related hardware which are easily used,</p> <p>(g) Not include spiral stairs, or stairs having open risers,</p> <p>(h) Have stair treads with leading edge which is rounded, and</p>	

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FIRST SCHEDULE—*continued*

## Provisions

- (i) Have *handrails* on both sides of the *accessible route* when the slope of the route exceeds 1 in 20. The *handrails* shall be continuous along both sides of the stair, ramp and landing except where the *handrail* is interrupted by a doorway.

**D1.3.5** Vehicle spaces and circulation routes shall have:

- (a) Dimensions appropriate to the *intended use*,  
 (b) Appropriate crossfall, and slope in the direction of travel,  
 (c) *Adequate* queuing and circulation space, and  
 (d) *Adequate* sight distances.

**D1.3.6** Vehicle spaces for use by *people with disabilities*, shall, in addition to the requirements of Clause D1.3.5, be:

- (a) Provided in sufficient numbers,  
 (b) Located to avoid conflict between vehicles and people using or moving to or from the space, and  
 (c) Easy to find as required by Clause F8 Signs.

## Limits on application

## D2 Mechanical Installations for Access

**FIRST SCHEDULE—continued****Clause D2—MECHANICAL INSTALLATIONS FOR ACCESS****Provisions****Limits on application****OBJECTIVE**

**D2.1** The objective of this provision is to:

- (a) Safeguard people from injury and loss of amenity while using mechanical installations for movement into, within and out of *buildings*,
- (b) Safeguard maintenance personnel from injury while servicing mechanical installations for access, and
- (c) Ensure that *people with disabilities* are able to carry out normal activities and processes within *buildings*.

Objective D2.1(c) shall apply only to those *buildings* to which section 47A of the Act applies.

Amend 7  
Jan 2002

**FUNCTIONAL REQUIREMENT**

**D2.2** Mechanical installations for access into, within and out of *buildings* shall provide for the safe and easy movement of people, and for the safety of maintenance personnel.

**PERFORMANCE**

**D2.3.1** Mechanical installations for access shall:

- (a) Move people safely, and stop and hold as required for the normal use of the installation, for all loads up to and including 25% in excess of the rated load,
- (b) Not produce excessive acceleration or deceleration,
- (c) Be constructed to avoid the likelihood of people falling, tripping, becoming caught, being able to touch or be struck by moving parts, sharp edges or projections, under both normal and reasonably foreseeable abnormal conditions of use,

**FIRST SCHEDULE—continued****Provisions**

- (d) Be constructed to prevent collision between components, or between components and the *building*,
- (e) Have a control system that ensures safe abnormal operation in the event of overloading or failure of any single component, and
- (f) Be capable of being isolated for inspection, testing and maintenance.

**D2.3.2** Mechanical installations for access shall be provided with:

- (a) *Adequate* control over normal use, to ensure people's safety throughout any operation involving starting, stopping or changing the direction of travel,
- (b) Notification of position, where people are fully enclosed and the installation serves more than two levels,
- (c) *Adequate* lighting and ventilation for both normal and emergency use, and
- (d) Signs as required by Clause F8 "Signs",

**D2.3.3** Mechanical installations for access shall, for emergency purposes, be provided with a means of:

- (a) Calling outside help,
- (b) Releasing people safely,
- (c) Safeguarding people from exposure to *hazardous* situations, and
- (d) Allowing authorised personnel to override the normal running procedure and take exclusive control of the installation.

**D2.3.4** Potentially dangerous equipment shall be located in spaces which:

**Limits on application**

Performance D2.3.3(d) shall not apply to installations travelling less than 15 m vertically.

**FIRST SCHEDULE—continued****Provisions**

- (a) Are secure from unauthorised entry and contain only equipment associated with the installation,
- (b) Are appropriately sized and suitably guarded to provide *adequate* safe working areas for maintenance personnel,
- (c) Are provided with *adequate* power and lighting for maintenance, and
- (d) Have an environment that ensures the safe operation of the equipment under all likely conditions of use.

**D2.3.5** Mechanical installations on *accessible routes* shall:

- (a) Where the passenger conveyor is manually controlled, provide:
  - (i) controls which are easily identifiable and easy to use,
  - (ii) *adequate* notification that the passenger conveyor has registered a summoning call, and
  - (iii) *adequate* notification that the passenger conveyor has arrived, and of its future direction of travel,
- (b) Where the passenger conveyor is fully enclosed and serves more than two levels, provide an *adequate* means of informing occupants of their location,
- (c) Where appropriate, have doors which:
  - (i) are power operated,
  - (ii) are readily distinguishable from their surroundings, and
  - (iii) where automatic, remain open sufficiently long to enable *people with disabilities* to pass through, and
- (d) Have *handrails* within the passenger conveyor.

**Limits on application**



# E Moisture

## E1 Surface Water

### FIRST SCHEDULE—continued

#### Clause E1—SURFACE WATER

##### Provisions

##### OBJECTIVE

**E1.1** The objective of this provision is to:

- (a) Safeguard people from injury or illness, and *other property* from damage, caused by *surface water*, and
- (b) Protect the *outfalls* of drainage systems.

##### FUNCTIONAL REQUIREMENT

**E1.2** *Buildings* and *sitework* shall be constructed in a way that protects people and *other property* from the adverse effects of *surface water*.

##### PERFORMANCE

**E1.3.1** Except as otherwise required under the Resource Management Act 1991 for the protection of *other property*, *surface water*, resulting from an event having a 10% probability of occurring annually and which is collected or concentrated by *buildings* or *sitework*, shall be disposed of in a way that avoids the likelihood of damage or nuisance to *other property*.

**E1.3.2** *Surface water*, resulting from an event having a 2% probability of occurring annually, shall not enter *buildings*.

**E1.3.3** Drainage systems for the disposal of *surface water* shall be constructed to:

- (a) Convey *surface water* to an appropriate *outfall* using gravity flow where possible,
- (b) Avoid the likelihood of blockages,
- (c) Avoid the likelihood of leakage, penetration by roots, or the entry of ground water where pipes or lined channels are used,

##### Limits on application

Performance E1.3.2 shall apply only to *Housing*, *Communal Residential* and *Communal Non-residential buildings*.

Amend 7  
Jan 2002

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Jan 2002

**FIRST SCHEDULE—continued****Provisions**

- (d) Provide reasonable access for maintenance and clearing blockages,
- (e) Avoid the likelihood of damage to any *outfall*, in a manner acceptable to the *network utility operator*, and
- (f) Avoid the likelihood of damage from superimposed loads or normal ground movements.

**Limits on application**

## E2 External Moisture

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FIRST SCHEDULE—*continued*

**Clause E2—EXTERNAL MOISTURE**

**Provisions**

**Limits on application**

**OBJECTIVE**

**E2.1** The objective of this provision is to safeguard people from illness or injury which could result from external moisture entering the *building*.

**FUNCTIONAL REQUIREMENT**

**E2.2** *Buildings* shall be constructed to provide *adequate* resistance to penetration by, and the accumulation of, moisture from the outside.

**PERFORMANCE**

**E2.3.1** Roofs shall shed precipitated moisture. In locations subject to snowfalls, roofs shall also shed melted snow.

**E2.3.2** Roofs and exterior walls shall prevent the penetration of water that could cause undue dampness, or damage to *building elements*.

**E2.3.3** Walls, floors and structural elements in contact with the ground shall not absorb or transmit moisture in quantities that could cause undue dampness, or damage to *building elements*.

**E2.3.4** *Building elements* susceptible to damage shall be protected from the adverse effects of moisture entering the space below suspended floors.

**E2.3.5** *Concealed spaces* and cavities in *buildings* shall be constructed in a way which prevents external moisture being transferred and causing condensation and the degradation of *building elements*.

**E2.3.6** Excess moisture present at the completion of *construction*, shall be capable of being dissipated without permanent damage to *building elements*.

Requirement E2.2 shall not apply to *buildings* in which moisture from outside would result in effects which are no more harmful than those likely to arise indoors during normal use.

## E3 Internal Moisture

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FIRST SCHEDULE— <i>continued</i>		
<b>Clause E3—INTERNAL MOISTURE</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
<b>E3.1</b> The objective of this provision is to:		
<ul style="list-style-type: none"> <li>(a) Safeguard people against illness or injury which could result from accumulation of internal moisture, and</li> <li>(b) Protect <i>household units</i> from damage caused by free water from another occupancy in the same <i>building</i>.</li> </ul>		
<b>FUNCTIONAL REQUIREMENT</b>		
<b>E3.2</b> <i>Buildings</i> shall be constructed to avoid the likelihood of:		
<ul style="list-style-type: none"> <li>(a) Fungal growth or the accumulation of <i>contaminants</i> on linings and other <i>building elements</i>,</li> <li>(b) Free water overflow penetrating to an adjoining <i>household unit</i>, and</li> <li>(c) Damage to <i>building elements</i> being caused by use of water.</li> </ul>		
<b>PERFORMANCE</b>		
<b>E3.3.1</b> An <i>adequate</i> combination of <i>thermal resistance</i> and ventilation shall be provided to all <i>habitable spaces</i> , bathrooms, laundries, and other spaces where moisture may be generated.		Performance E3.3.1 shall not apply to <i>Communal Non-residential, Commercial, Industrial, Outbuildings</i> or <i>Ancillary buildings</i> .
<b>E3.3.2</b> Accidental overflow from <i>sanitary fixtures</i> or laundering facilities shall be constrained from penetrating to another occupancy in the same <i>building</i> .		
<b>E3.3.3</b> Floor surfaces of any space containing <i>sanitary fixtures</i> or laundering facilities shall be <i>impervious</i> and easily cleaned.		
<b>E3.3.4</b> Wall surfaces adjacent to <i>sanitary fixtures</i> or laundering facilities shall be <i>impervious</i> and easily cleaned.		

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FIRST SCHEDULE—*continued*

**Provisions**

**Limits on application**

**E3.3.5** Surfaces of *building elements* likely to be splashed or become contaminated in the course of the *intended use* of the *building*, shall be *impervious* and easily cleaned.

**E3.3.6** Water splash shall be prevented from penetrating behind linings or to *concealed spaces*.



# F Safety of Users

## F1 Hazardous Agents on Site

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FIRST SCHEDULE—*continued*

## Clause F1—HAZARDOUS AGENTS ON SITE

## Provisions

## Limits on application

**OBJECTIVE**

**F1.1** The objective of this provision is to safeguard people from injury or illness caused by *hazardous agents* or *contaminants* on a site.

**FUNCTIONAL REQUIREMENT**

**F1.2** *Buildings* shall be constructed to avoid the likelihood of people within the *building* being adversely affected by *hazardous agents* or *contaminants* on the site.

**PERFORMANCE**

**F1.3.1** Sites shall be assessed to determine the presence and potential threat of any *hazardous agents* or *contaminants*.

**F1.3.2** The likely effect of any *hazardous agent* or *contaminant* on people shall be determined taking account of:

- (a) The *intended use* of the *building*,
- (b) The nature, potency or toxicity of the *hazardous agent* or *contaminant*, and
- (c) The protection afforded by the *building envelope* and *building systems*.

## F2 Hazardous Building Materials

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<b>FIRST SCHEDULE—continued</b>		
<b>Clause F2—HAZARDOUS BUILDING MATERIALS</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
F2.1 The objective of this provision is to safeguard people from injury and illness caused by exposure to <i>hazardous building materials</i> .		
<b>FUNCTIONAL REQUIREMENT</b>		
F2.2 <i>Building materials</i> which are potentially <i>hazardous</i> , shall be used in ways that avoid undue risk to people.		
<b>PERFORMANCE</b>		
F2.3.1 The quantities of gas, liquid, radiation or solid particles emitted by materials used in the <i>construction of buildings</i> , shall not give rise to harmful concentrations at the surface of the material where the material is exposed, or in the atmosphere of any space.		
F2.3.2 Transparent panels capable of being mistaken for an unimpeded path of travel shall be marked to make them visible.		Performance F2.3.2 does not apply to <i>Housing</i>
F2.3.3 Glass or other brittle materials with which people are likely to come into contact shall:		
(a) If broken on impact, break in a way which is unlikely to cause injury, or		
(b) Resist a reasonably foreseeable impact without breaking, or		
(c) Be protected from impact.		



## F3 Hazardous Substances and Processes

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FIRST SCHEDULE—*continued*

## Clause F3—HAZARDOUS SUBSTANCES AND PROCESSES

## Provisions

## Limits on application

**OBJECTIVE**

**F3.1** The objective of this provision is to safeguard people from injury or illness, and *other property* from damage, caused by *hazardous substances* or processes in *buildings*.

**FUNCTIONAL REQUIREMENT**

**F3.2** *Buildings* where *hazardous substances* are stored and *hazardous* processes undertaken, shall be constructed to provide *adequate* protection to people and to *other property*.

**PERFORMANCE**

**F3.3** Spaces in *buildings* where *hazardous substances* are stored, handled or used, or where *hazardous* processes are undertaken, shall be located and constructed to protect people, and *other property*, under both normal and reasonably foreseeable abnormal conditions, and shall be provided with:

- (a) Means of restricting unauthorised access,
- (b) Means of preventing *hazardous substances*, or other materials unacceptable to the *network utility operator*, from entering *sewers* or *public drains*,
- (c) Means of allowing the harmless release of pressure where there is a significant risk of explosion occurring,
- (d) Protected ignition sources where flammable or explosive goods are stored,
- (e) Means of rendering harmless by ventilation, containment, dilution, or chemical or biological action, any radioactive, toxic or flammable vapours, gases or materials which may escape from pipes, vessels or containers,

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
(f) Impervious, easily cleaned surface finishes on <i>building elements</i> likely to be splashed or become contaminated in the course of the <i>intended use</i> of the <i>building</i> , and	
(g) Signs as required by Clause F8 “Signs”.	

## F4 Safety from Falling

### FIRST SCHEDULE—*continued*

#### Clause F4—SAFETY FROM FALLING

##### Provisions

##### OBJECTIVE

**F4.1** The objective of this provision is to safeguard people from injury caused by falling.

##### FUNCTIONAL REQUIREMENT

**F4.2** *Buildings* shall be constructed to reduce the likelihood of accidental fall.

##### PERFORMANCE

**F4.3.1** Where people could fall 1 metre or more from an opening in the external envelope or floor of a *building*, or from a sudden change of level within or associated with a *building*, a barrier shall be provided.

**F4.3.2** Roofs with permanent access shall have barriers provided.

**F4.3.3** Swimming pools have a depth of water exceeding 400mm, shall have barriers provided.

**F4.3.4** Barriers shall:

- (a) Be continuous and extend for the full extent of the hazard,
- (b) Be of appropriate height,
- (c) Be constructed with *adequate* rigidity,
- (d) Be of *adequate* strength to withstand the foreseeable impact of people and, where appropriate, the static pressure of people pressing against them.
- (e) Be constructed to prevent people from falling through them, and

##### Limits on application

Performance F4.3.1 shall not apply where such a barrier would be incompatible with the *intended use* of an area, or to temporary barriers on *construction* sites where the possible fall is less than 3 metres or to *buildings* providing pedestrian access in remote locations where the route served presents similar natural hazards.

Performance F4.3.3 shall not apply to any pool exempted under section 5 of the Fencing of Swimming Pools Act 1987.

Amend 7  
Jan 2002

**FIRST SCHEDULE—continued****Provisions**

- (f) In the case of a swimming pool, restrict the access of children under 6 years of age to the pool or the immediate pool area.
- (g) Restrict the passage of children under 6 years of age when provided to guard a change of level in areas likely to be frequented by them.

**F4.3.5** Barriers to swimming pools shall have in addition to performance F4.3.4:

- (a) All gates and doors fitted with latching devices not readily operated by children, and constructed to automatically close and latch when released from any stationary position 150 mm or more from the closed and secured position, but excluding sliding and sliding-folding doors that give access to the immediate pool surround from a *building* that forms part of the barrier, and
- (b) No permanent objects on the outside of the barrier that could provide a climbing step.

**Limits on application**

Performance F4.3.4 (f) shall not apply to any pool exempted under section 5 of the Fencing of Swimming Pools Act 1987.

## F5 Construction and Demolition Hazards

**FIRST SCHEDULE—continued****Clause F5—CONSTRUCTION AND DEMOLITION HAZARDS****Provisions****OBJECTIVE**

**F5.1** The objective of this provision is to safeguard people from injury, and *other property* from damage, caused by *construction* or demolition site hazards.

**FUNCTIONAL REQUIREMENT**

**F5.2** *Construction* and demolition work on *buildings* shall be performed in a manner that avoids the likelihood of:

- (a) Objects falling onto people on or off the site,
- (b) Objects falling on property off the site,
- (c) Other hazards arising on the site affecting people off the site and *other property*, and
- (d) Unauthorised entry of children to hazards on the site.

**PERFORMANCE**

**F5.3.1** Suitable *construction* methods shall be used to avoid the likelihood of tools or materials falling onto places where people might be present.

**F5.3.2** Where *construction* or demolition work presents a hazard in places to which the public has access, barriers shall be provided and shall:

- (a) Be of appropriate height and *construction* to prevent site hazards from harming traffic or passersby,
- (b) Be difficult to climb,
- (c) Have no openings other than those approved by the *territorial authority* for access and viewing,
- (d) Have no gates or doors which project beyond the site when opened,

**Limits on application**

**FIRST SCHEDULE—continued****Provisions**

- (e) Contain no projection that would be a hazard to traffic or people, and
- (f) Be clearly marked where the barrier itself may otherwise present a hazard to traffic or passersby.

**F5.3.3** Where a *construction* or demolition site contains any hazard which might be expected to attract the unauthorised entry of children, the hazard shall be enclosed to restrict access by children.

**F5.3.4** Suitable barriers shall be constructed to provide a safe route for people where lifting equipment creates a risk of accident from objects falling on a place of public access, or where a similar risk results from the height at which *construction* or demolition work is being carried out.

**Limits on application**

## F6 Lighting for Emergency

### FIRST SCHEDULE—*continued*

#### Clause F6—LIGHTING FOR EMERGENCY

##### Provisions

##### OBJECTIVE

**F6.1** The objective of this provision is to safeguard people from injury due to inadequate lighting being available during an emergency.

##### FUNCTIONAL REQUIREMENT

**F6.2** *Buildings* shall be provided with *adequate* lighting within all *escape routes* in an emergency.

##### PERFORMANCE

**F6.3.1** An *illuminance* of 1 lux minimum shall be maintained at floor level throughout *buildings* for a period equal to 1.5 times the *evacuation time* or 30 minutes, whichever is the greater.

**F6.3.2** Signs to indicate *escape routes* shall be provided as required by Clause F8 “Signs”.

##### Limits on application

Requirement F6.2 shall not apply to *Detached Dwellings*, *household units* within *Multi-unit Dwellings*, *Outbuildings* or *Ancillary buildings*.

Performance F6.3.1 shall not apply to spaces infrequently inhabited such as plant rooms, storage areas and service tunnels.

Amend 3  
Dec 1995

F7 Warning Systems

**FIRST SCHEDULE—continued**

**Clause F7—WARNING SYSTEMS**

**Provisions**

**Limits on application**

**OBJECTIVE**

**F7.1** The objective of this provision is to safeguard people from injury or illness due to lack of awareness of an emergency.

**FUNCTIONAL REQUIREMENT**

**F7.2** *Buildings* shall be provided with appropriate means of warning people to escape to a *safe place* in an emergency.

**PERFORMANCE**

**F7.3.1** A means of warning must alert people to the emergency in *adequate* time for them to reach a *safe place*.

**F7.3.2** Appropriate means of detection and warning for fire must be provided within each *household unit*.

**F7.3.3** Appropriate means of warning for fire and other emergencies must be provided in *buildings* as necessary to satisfy the other performance requirements of this code.

Performance F7.3 does not apply to *Outbuildings* or *Ancillary buildings*.

Amend 8  
Apr 2003

Amend 8  
Apr 2003



## F8 Signs

**FIRST SCHEDULE—continued****Clause F8—SIGNS****Provisions****OBJECTIVE**

**F8.1** The objective of this provision is to:

- (a) Safeguard people from injury or illness resulting from inadequate identification of *escape routes*, or of hazards within or about the *building*,
- (b) Safeguard people from loss of *amenity* due to inadequate direction, and
- (c) Ensure that *people with disabilities* are able to carry out normal activities and processes within *buildings*.

**FUNCTIONAL REQUIREMENT**

**F8.2** Signs shall be provided in and about *buildings* to identify:

- (a) *Escape routes*,
- (b) Emergency related safety features,
- (c) Potential hazards, and
- (d) *Accessible routes* and facilities for *people with disabilities*.

**PERFORMANCE**

**F8.3.1** Signs shall be clearly visible and readily understandable under all conditions of foreseeable use.

**F8.3.2** Signs indicating potential hazards shall be provided in sufficient locations to notify people before they encounter the hazard.

**F8.3.3** Signs to facilitate escape shall:

- (a) Be provided in sufficient locations to identify *escape routes* and guide people to a *safe place*, and

**Limits on application**

Objective F8.1 (c) shall apply only to those *buildings* to which section 47A of the Act applies.

Requirement F8.2 shall not apply to *Detached Dwellings*, or within *household units* of *Multi-unit Dwellings*.

**FIRST SCHEDULE—continued****Provisions**

- (b) Remain visible in the event of a power failure of the main lighting supply, for the same duration as required by Clause F6 “Lighting for Emergency”.

**F8.3.4** Signs shall be provided in sufficient locations to identify *accessible routes* and facilities provided for *people with disabilities*.

**Limits on application**

# G Services and Facilities

## G1 Personal Hygiene

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<b>FIRST SCHEDULE—continued</b>		
<b>Clause G1—PERSONAL HYGIENE</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
G1.1 The objective of this provision is to:		
<ul style="list-style-type: none"> <li>(a) Safeguard people from illness caused by infection or contamination,</li> <li>(b) Safeguard people from loss of <i>amenity</i> arising from the absence of appropriate personal hygiene facilities, and</li> <li>(c) Ensure <i>people with disabilities</i> are able to carry out normal activities and processes within <i>buildings</i>.</li> </ul>		
Objective G1.1 (c) shall apply only to those <i>buildings</i> to which section 25 of the Disabled Persons Community Welfare Act 1975 applies.		
<b>FUNCTIONAL REQUIREMENT</b>		
G1.2 <i>Buildings</i> shall be provided with appropriate spaces and facilities for personal hygiene.		
<b>PERFORMANCE</b>		
G1.3.1 <i>Sanitary fixtures</i> shall be provided in sufficient number and be appropriate for the people who are intended to use them.		
G1.3.2 <i>Sanitary fixtures</i> shall be located, constructed and installed to:		
<ul style="list-style-type: none"> <li>(a) Facilitate <i>sanitation</i>,</li> <li>(b) Avoid risk of food contamination,</li> <li>(c) Avoid harbouring dirt or germs,</li> <li>(d) Provide appropriate privacy,</li> <li>(e) Avoid affecting occupants of adjacent spaces from the presence of unpleasant odours, accumulation of offensive matter, or other source of annoyance,</li> <li>(f) Allow effective cleaning,</li> </ul>		

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<b>FIRST SCHEDULE—continued</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<p>(g) Discharge to a plumbing and drainage system as required by Clause G13 “Foul Water” when water-borne disposal is used, and</p> <p>(h) Provide a healthy safe disposal system when non-water-borne disposal is used.</p> <p><b>G1.3.3</b> Facilities for personal hygiene shall be provided in convenient locations.</p> <p><b>G1.3.4</b> Personal hygiene facilities provided for <i>people with disabilities</i> shall be <i>accessible</i>.</p>	<p>Performance G1.3.4 shall not apply to <i>Housing, Outbuildings, Ancillary buildings, and to Industrial buildings</i> where no more than 10 people are employed.</p>	

## G2 Laundering

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FIRST SCHEDULE—*continued*

**Clause G2—LAUNDERING**

**Provisions**

**Limits on application**

**OBJECTIVE**

**G2.1** The objective of this provision is to ensure:

- (a) *Adequate amenities* for people to do laundering, and
- (b) That *people with disabilities* are able to carry out normal activities and processes within *buildings*.

Objective G2.1 (b) shall apply to those *buildings* to which section 25 of the Disabled Persons Community Welfare 1975 Act applies.

**FUNCTIONAL REQUIREMENT**

**G2.2** *Buildings* shall be provided with *adequate* space and facilities for laundering.

Requirement G2.2 shall apply only to *Housing*, old people's homes, early childhood centres, camping grounds and work camps.

**PERFORMANCE**

**G2.3.1** Facilities shall have capacity for the *intended use*, and consist of *fixtures*, or space and services for appliances.

**G2.3.2** Space shall be *adequate* in size to provide for the installation and use of *fixtures* or appliances.

**G2.3.3** Space and facilities shall be provided within each accommodation unit or may be grouped elsewhere in a convenient location.

**G2.3.4** *Accessible* facilities shall be provided for *people with disabilities*.

Performance G2.3.4 shall apply only to camping grounds.

## G3 Food Preparation and Prevention of Contamination

FIRST SCHEDULE—*continued*

## Clause G3—FOOD PREPARATION AND PREVENTION OF CONTAMINATION

## Provisions

## OBJECTIVE

**G3.1** The objective of this provision is to:

- (a) Safeguard people from illness due to contamination,
- (b) Enable hygienic food preparation without loss of *amenity*, and
- (c) Ensure that *people with disabilities* are able to carry out normal activities and processes within *buildings*.

## FUNCTIONAL REQUIREMENT

**G3.2.1** *Buildings* shall be provided with space and facilities for the hygienic storage, preparation and cooking of food, that are *adequate* for the *intended use* of the *building*.

**G3.2.2** *Buildings* used for the storage, manufacture or processing of food, including animal products, shall be constructed to safeguard the contents from contamination.

**G3.2.3** *Buildings* used for the medical treatment of humans or animals, or the reception of dead bodies, shall be constructed to avoid the spread of contamination from the *building* contents.

## PERFORMANCE

**G3.3.1** Food preparation facilities shall be hygienic and include:

- (a) Space for a refrigerator, or a perishable food storage area capable of being cooled and protected from vermin and insects.

## Limits on application

Objective G3.1 (c) shall apply only to those *buildings* to which section 47A of the Act applies.

Requirement G3.2.1 shall apply to *Housing*, work camps, old people's homes and early childhood centres, and where appropriate shall also apply to *Commercial* and *Industrial buildings* whose *intended uses* include the manufacture, preparation, packaging or storage of food.

Performance G3.3.1 (a) and (b) shall apply to *Housing*, work camps, old people's homes, early childhood centres and *Commercial* or *Industrial buildings* whose *intended uses* include the handling of perishable food.

**FIRST SCHEDULE—continued****Provisions**

- (b) Means for food rinsing, utensil washing and waste water disposal.
- (c) Means for cooking food, and
- (d) Space and a surface for food preparation.

**G3.3.2** Spaces for food preparation and utensil washing shall have:

- (a) Interior linings and work surfaces shall be *impervious* and easily cleaned,
- (b) All *building elements* constructed with materials which are free from *hazardous substances* which could cause contamination to the *building contents*, and

- (c) Exposed *building elements* located and shaped to avoid the accumulation of dirt.

**G3.3.3** An *adequate* energy supply shall be provided, appropriately located for use by cooking and refrigeration appliances.

**G3.3.4** Space and facilities shall be provided within each *household unit*, or grouped elsewhere in a convenient location.

**G3.3.5** Where facilities are provided for *people with disabilities* they shall be *accessible*.

**Limits on application**

Performance G3.3.1 (c) shall apply to *Housing*, work camps, old people's homes and early childhood centres.

Performance G3.3.1 (d) shall apply to *Housing*, work camps, old people's homes and early childhood centres.

Performance G3.3.2 (b) shall apply to *Housing*, work camps, old people's homes and early childhood centres, and where appropriate shall also apply to *Commercial* and *Industrial buildings* whose *intended uses* include the manufacture, preparation, packaging or storage of food.

Performance G3.3.2 (c) shall not apply to *Housing*.

Performance G3.3.5 shall apply only to camping grounds and *accessible* accommodation units in *Communal Residential buildings*.

**FIRST SCHEDULE—continued****Provisions**

**G3.3.6** Spaces in *buildings* shall be protected from the likelihood of contamination or vermin entering areas used for the storage, processing or preparation of food, and shall have a means of preventing contamination spreading from these areas to other spaces.

**Limits on application**

Performance G3.3.6 shall apply to *Commercial or Industrial buildings* whose *intended uses* include the handling of perishable food, the medical treatment of humans or animals, the slaughter of animals or the reception of dead bodies.



## G4 Ventilation

### FIRST SCHEDULE—*continued*

#### Clause G4—VENTILATION

##### Provisions

##### Limits on application

##### OBJECTIVE

**G4.1** The objective of this provision is to safeguard people from illness or loss of *amenity* due to lack of fresh air.

##### FUNCTIONAL REQUIREMENT

**G4.2** Spaces within *buildings* shall be provided with *adequate* ventilation consistent with their maximum occupancy and their *intended use*.

##### PERFORMANCE

**G4.3.1** Spaces within *buildings* shall have means of ventilation with *outdoor air* that will provide an *adequate* number of air changes to maintain air purity.

**G4.3.2** Mechanical air-handling systems shall be constructed and maintained in a manner that prevents harmful bacteria, pathogens and allergens from multiplying within them.

**G4.3.3** *Buildings* shall have a means of collecting or otherwise removing the following products from the spaces in which they are generated:

- (a) Cooking fumes and odours,
- (b) Moisture from laundering, utensil washing, bathing and showering,
- (c) Odours from sanitary and waste storage spaces,
- (d) Gaseous by-products and excessive moisture from commercial or industrial processes,
- (e) Poisonous fumes and gases,
- (f) Flammable fumes and gases,
- (g) Airborne particles,
- (h) Bacteria, viruses or other pathogens, or
- (i) Products of combustion.

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**FIRST SCHEDULE—continued****Provisions**

**G4.3.4** Contaminated air shall be disposed of in a way which avoids creating a nuisance or hazard to people and *other property*.

**G4.3.5** The quantities of air supplied for ventilation shall meet the additional demands of any fixed *combustion appliances*.

**Limits on application**

**G5 Interior Environment**

**FIRST SCHEDULE—continued**

**Clause G5—INTERIOR ENVIRONMENT**

**Provisions**

**Limits on application**

**OBJECTIVE**

**G5.1** The objective of this provision is to:

- (a) Safeguard people from illness caused by low air temperature,
- (b) Safeguard people from injury or loss of *amenity* caused by inadequate activity space,
- (c) Safeguard people from injury caused by unsafe installations, and
- (d) Ensure that *people with disabilities* are able to carry out normal activities and processes within *buildings*.

Objective G5.1 (d) shall apply to those *buildings* to which section 25 of the Disabled Persons Community Welfare Act 1975 applies.

**FUNCTIONAL REQUIREMENT**

**G5.2.1** *Buildings* shall be constructed to provide:

- (a) An *adequate*, controlled interior temperature,
- (b) *Adequate* activity space for the *intended use*, and
- (c) *Accessible* spaces and facilities.

Requirement G5.2.1 (a) shall apply only to *habitable spaces*, bathrooms and recreation rooms in old people's homes and early childhood centres.

Requirement G5.2.1 (b) shall apply only to *old people's homes*.

Requirement G5.2.1 (c) shall apply only to *Communal Residential, Communal Non-residential, and Commercial buildings*.

**G5.2.2** Heating appliances in *buildings* shall be installed in a way that reduces the likelihood of injury.

**PERFORMANCE**

**G5.3.1** *Habitable spaces*, bathrooms and recreation rooms shall have the provision for maintaining the internal temperature at no less than 16°C measured at 750 mm above floor level, while the space is *adequately* ventilated.

Performance G5.3.1 shall apply only to old people's homes and early childhood centres.

**FIRST SCHEDULE—continued****Provisions**

**G5.3.2** Heating appliances, and any attached cables, pipes or other fittings shall be securely fixed in place.

**G5.3.3** *Habitable spaces* shall have sufficient space for activity, furniture, and sanitary and mobility aids.

**G5.3.4** Where reception counters or desks are provided for public use, at least one counter or desk shall be *accessible*.

**G5.3.5** *Buildings* shall be provided with listening systems which enable enhanced hearing by people with hearing aids.

**G5.3.6** Enhanced listening systems shall be identified by signs complying the Clause F8 “Signs”.

**Limits on application**

Performance G5.3.2 shall apply only to old people’s homes and early childhood centres.

Performance G5.3.3 shall apply only to old people’s homes.

Performance G5.3.4 applies only to *Communal Residential*, *Communal Non-Residential*, and *Commercial buildings*.

Performance G5.3.5 applies only to:

- (a) *Communal Non-residential* assembly spaces occupied by more than 250 people, and
- (b) Any theatre, cinema, or public hall, and
- (c) Assembly spaces in old people’s homes occupied by more than 20 people.

**G6 Airborne and Impact Sound**

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FIRST SCHEDULE—*continued*

**Clause G6—AIRBORNE AND IMPACT SOUND**

**Provisions**

**Limits on application**

**OBJECTIVE**

**G6.1** The objective of this provision is to safeguard people from illness or loss of *amenity* as a result of undue noise being transmitted between abutting occupancies.

**FUNCTIONAL REQUIREMENT**

**G6.2** *Building elements* which are common between occupancies, shall be constructed to prevent undue noise transmission from other occupancies or common spaces, to the *habitable spaces* of *household units*.

**PERFORMANCE**

**G6.3.1** The *Sound Transmission Class* of walls, floors and ceilings, shall be no less than 55.

**G6.3.2** The *Impact Insulation Class* of floors shall be no less than 55.

G7 Natural Light

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<b>FIRST SCHEDULE—continued</b>		
<b>Clause G7—NATURAL LIGHT</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
<p><b>G7.1</b> The objective of this provision is to safeguard people from illness or loss of <i>amenity</i> due to isolation from natural light and the outside environment.</p>		
<b>FUNCTIONAL REQUIREMENT</b>		
<p><b>G7.2</b> <i>Habitable spaces</i> shall provide <i>adequate</i> openings for natural light and for a visual awareness of the outside environment.</p>		
<b>PERFORMANCE</b>		
<p><b>G7.3.1</b> Natural light shall provide an <i>illuminance</i> of no less than 30 lux at floor level for 75% of the <i>standard year</i>.</p>		
<p><b>G7.3.2</b> Openings to give awareness of the outside shall be transparent and provided in suitable locations.</p>		
		<p>Requirement G7.2 shall apply only to <i>Housing</i>, old people's homes and early childhood centres.</p>

## G8 Artificial Light

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FIRST SCHEDULE—*continued*

**Clause G8—ARTIFICIAL LIGHT**

**Provisions**

**Limits on application**

**OBJECTIVE**

**G8.1** The objective of this provision is to safeguard people from injury due to lack of *adequate* lighting.

**FUNCTIONAL REQUIREMENT**

**G8.2** Spaces within *buildings* used by people, shall be provided with *adequate* artificial lighting which, when activated in the absence of sufficient natural light, will enable safe movement.

**PERFORMANCE**

**G8.3** *Illuminance* at floor level shall be no less than 20 lux.

Requirement G8.2 shall apply to:

- (a) All *exitways* in *Multi-unit Dwellings, Group Dwellings and Communal Residential, Communal Non-residential, Commercial and Industrial buildings,*
- (b) All *access routes* except those in *Outbuildings and Ancillary buildings,* and
- (c) All common spaces within *Multi-unit Dwellings, Group Dwellings, and Communal Residential and Communal Non-residential buildings.*

Performance G8.3 shall not apply in **emergencies**, for which *Illuminance* requirements are given in Clause F6 "Lighting for Emergency".

## G9 Electricity

66	<i>Building Regulations 1992</i>	1992/150
FIRST SCHEDULE— <i>continued</i>		
<b>Clause G9—ELECTRICITY</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
G9.1 The objective of this provision is to ensure that:		
<ul style="list-style-type: none"> <li>(a) In <i>buildings</i> supplied with electricity, the <i>electrical installation</i> has safeguards against outbreak of <i>fire</i> and personal injury, and</li> <li>(b) <i>People with disabilities</i> are able to carry out normal activities and processes within <i>buildings</i>.</li> </ul>		
Objective G9.1 (b) shall apply only to those <i>buildings</i> to which section 25 of the Disabled Persons Community Welfare Act 1975 applies.		
<b>FUNCTIONAL REQUIREMENT</b>		
G9.2 Where provided in a <i>building</i> , <i>electrical installations</i> shall be safe for their <i>intended use</i> .		
<b>PERFORMANCE</b>		
G9.3.1 The <i>electrical installation</i> shall incorporate systems to:		
<ul style="list-style-type: none"> <li>(a) Protect people from contact with parts of the installation which are live during normal operation, and to prevent parts of the installation or other <i>building elements</i> becoming live during fault conditions,</li> <li>(b) Permit the safe isolation of the installation and of electrical fittings and appliances,</li> <li>(c) Safeguard people from excessive temperatures resulting from either normal operation of electrical equipment, or from currents which could exceed the installation rating,</li> <li>(d) Safeguard people from injury which may result from electromechanical stress in electrical components caused by currents in excess of the installation rating,</li> </ul>		



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## FIRST SCHEDULE—continued

Provisions	Limits on application
(e) Protect <i>building elements</i> from risk of ignition, impairment of their physical or mechanical properties, or function, due to temperature increases resulting from heat transfer or electric arc,	
(f) Operate safely in its intended environment, and	
(g) Safeguard against ignition of the surrounding atmosphere where it is potentially flammable or explosive.	
<b>G9.3.2</b> An <i>electrical installation</i> supplying an <i>essential service</i> shall:	
(a) Maintain the supply for a time appropriate to that service, and	
(b) Be capable of being isolated from the supply system, independently of the remainder of the installation.	
<b>G9.3.3</b> An <i>electrical installation</i> connected to an <i>electrical supply system</i> , shall contain safeguards which protect the safety features of the external supply.	
<b>G9.3.4</b> In <i>buildings</i> intended for use by <i>people with disabilities</i> , light switches and plug socket outlets shall be <i>accessible</i> and usable.	Performance G9.3.4 shall not apply to <i>Housing</i> , <i>Outbuildings</i> , <i>Ancillary buildings</i> , and to <i>Industrial buildings</i> where no more than 10 people are employed.

## G10 Piped Services

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<b>FIRST SCHEDULE—continued</b>		
<b>Clause G10—PIPED SERVICES</b>		
<b>Provisions</b>	<b>Limits on application</b>	
<b>OBJECTIVE</b>		
<b>G10.1</b> The objective of this provision is to safeguard people from injury or illness caused by extreme temperatures or <i>hazardous substances</i> associated with <i>building services</i> .		
<b>FUNCTIONAL REQUIREMENT</b>		
<b>G10.2</b> In <i>buildings</i> provided with potentially <i>hazardous</i> services containing hot, cold, flammable, corrosive or toxic fluids, the installations shall be constructed to provide <i>adequate</i> safety for people.		
<b>PERFORMANCE</b>		
<b>G10.3.1</b> Piping systems shall be constructed to avoid the likelihood of:		
(a) Significant leakage or damage during normal or reasonably foreseeable abnormal conditions,		
(b) Detrimental contamination of the contents by other substances,		
(c) Adverse interaction between services, or between piping and electrical systems, and		
(d) People having contact with pipes which could cause them harm.		
<b>G10.3.2</b> Provision shall be made for the ready removal of moisture or condensate in gas pipes.		
<b>G10.3.3</b> Pipes shall be protected against corrosion in the environment of their use.		
<b>G10.3.4</b> Piping systems shall be identified with markings if the contents are not readily apparent from the location or associated equipment.		

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FIRST SCHEDULE—*continued*

## Provisions

**G10.3.5** Enclosed spaces shall be constructed to avoid the likelihood of accumulating vented or leaking gas.

**G10.3.6** Piped systems shall have isolation devices which permit the installation or individual items of apparatus to be isolated from the supply system, for maintenance, testing, fault detection and repair.

## Limits on application

## G11 Gas as an Energy Source

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FIRST SCHEDULE—*continued*

## Clause G11—GAS AS AN ENERGY SOURCE

## Provisions

## Limits on application

**OBJECTIVE**

**G11.1** The objective of this provision is to:

- (a) Safeguard people from injury arising from the use of gas as an energy source,
- (b) Safeguard people and *other property* from the risk of *fire* or explosion, and
- (c) Safeguard people from loss of *amenity* due to the gas supply being inadequate for the *intended use*.

**FUNCTIONAL REQUIREMENT**

**G11.2** *In buildings* where gas is used as an energy source, the supply system shall be safe and *adequate* for its *intended use*.

**PERFORMANCE**

**G11.3.1** Supply systems shall be constructed to maintain a safe pressure range appropriate to the appliances and the type of gas used.

**G11.3.2** The gas supply to all appliances in a single ventilated space, shall be fitted with an automatic cut-off activated by failure of any continuous forced ventilation system used for combustion, ventilation or safe operation of a fixed gas appliance.

**G11.3.3** A flued fixed gas appliance shall have no adverse interaction with any other flued appliance.

**G11.3.4** Supply systems shall have isolation devices which permit the whole installation, or individual items of apparatus, to be isolated from the supply for maintenance, testing, fault detection or repair.

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FIRST SCHEDULE—*continued*

## Provisions

**G11.3.5** Where gas is supplied from an external source, the supply system within *buildings* shall be constructed to avoid the likelihood of:

- (a) Contamination of the external supply from other gas sources within the *building*,
- (b) Adverse effects on the pressure of the external supply, and
- (c) The external supply pipe acting as an earthing conductor.

**G11.3.6** The location and installation of meters and service risers shall meet the requirements of the *network utility operator*.

## Limits on application

## G12 Water Supplies

Schedule

Building Amendment Regulations 2001

**Schedule**  
**New clause G12 substituted in First Schedule of**  
**principal regulations**

**Clause G12–Water Supplies****Provisions****Limits on application****Objective**

**G12.1** The objective of this provision is to–

- (a) safeguard people from illness caused by contaminated water;
- (b) safeguard people from injury caused by hot water system explosion, or from contact with excessively hot water;
- (c) safeguard people from loss of *amenity* arising from–
  - (i) a lack of hot water for personal hygiene; or
  - (ii) water for human consumption, which is offensive in appearance, odour or taste;
- (d) ensure that *people with disabilities* are able to carry out normal activities and functions within *buildings*.

Objective G12.1(d) shall apply only to those *buildings* to which section 47A of the Act applies.

**Functional requirement**

**G12.2** *Buildings* provided with water outlets, *sanitary fixtures*, or *sanitary appliances* must have safe and *adequate* water supplies.

**Performance**

**G12.3.1** Water intended for human consumption, food preparation, utensil washing, or oral hygiene must be potable

**G12.3.2** A potable *water supply system* shall be–

- (a) protected from contamination; and
- (b) installed in a manner which avoids the likelihood of contamination within the system and the *water main*; and
- (c) installed using components that will not contaminate the water.

**G12.3.3** A non-potable *water supply system* used for personal hygiene shall be installed in a manner that avoids the likelihood of illness or injury being caused by the system.

**G12.3.4** Water pipes and outlets provided with non-potable water shall be clearly identified.

## Building Amendment Regulations 2001

## Schedule

**Provisions****Performance**—continued

**G12.3.5** *Sanitary fixtures and sanitary appliances* must be provided with hot water when intended to be used for—

- (a) utensil washing; and
- (b) personal washing, showering, or bathing.

**G12.3.6** Where hot water is provided to *sanitary fixtures and sanitary appliances*, used for personal hygiene, it must be delivered at a temperature that avoids the likelihood of scalding.

**G12.3.7** *Water supply systems* must be installed in a manner that—

- (a) pipes water to *sanitary fixtures and sanitary appliances* flow rates that are *adequate* for the correct functioning of those *fixtures and appliances* under normal conditions; and
- (b) avoids the likelihood of leakage; and
- (c) allows reasonable access to components likely to need maintenance; and
- (d) allows the system and any backflow prevention devices to be isolated for testing and maintenance.

**G12.3.8** Vessels used for producing or storing hot water must be provided with safety features that—

- (a) relieve excessive pressure during both normal and abnormal conditions; and
- (b) limit temperatures to avoid the likelihood of flash steam production in the event of rupture.

**G12.3.9** A *hot water system* must be capable of being controlled to prevent the growth of legionella bacteria.

**G12.3.10** Water supply taps must be *accessible* and usable for *people with disabilities*.

**Limits on application**

Performance G12.3.5(b) shall apply only to *housing*, retirement homes and early childhood centres.

Performance G12.3.10 applies only to those *buildings* to which section 47A of the Act applies.

Clerk of the Executive Council.





## G13 Foul Water

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FIRST SCHEDULE—*continued*

## Clause G13—FOUL WATER

## Provisions

## Limits on application

**OBJECTIVE**

**G13.1** The objective of this provision is to:

- (a) Safeguard people from illness due to infection or contamination resulting from personal hygiene activities, and
- (b) Safeguard people from loss of *amenity* due to the presence of unpleasant odours or the accumulation of offensive matter resulting from *foul water* disposal.

**FUNCTIONAL REQUIREMENT**

**G13.2** *Buildings*, in which *sanitary fixtures* and *sanitary appliances* using water-borne waste disposal are installed, shall be provided with an *adequate* plumbing and drainage system to carry *foul water* to appropriate *outfalls*.

**PERFORMANCE**

**G13.3.1** The *plumbing system* shall be constructed to:

- (a) Convey *foul water* from *buildings* to a drainage system,
- (b) Avoid the likelihood of blockage and leakage,
- (c) Avoid the likelihood of foul air and gases entering *buildings*, and
- (d) provide reasonable access for maintenance and clearing blockages.

**G13.3.2** The drainage system shall:

- (a) Convey *foul water* to an appropriate *outfall*,
- (b) Be constructed to avoid the likelihood of blockage,

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FIRST SCHEDULE—*continued*

Provisions	Limits on application
<p>(c) Be supported, jointed and protected in a way that will avoid the likelihood of penetration of roots or the entry of ground water,</p> <p>(d) Be provided with reasonable access for maintenance and clearing blockages,</p> <p>(e) Be ventilated to avoid the likelihood of foul air and gases accumulating in the drainage system and <i>sewer</i>, and</p> <p>(f) Be constructed to avoid the likelihood of damage from superimposed loads or normal ground movement.</p> <p><b>G13.3.3</b> Where a <i>sewer</i> connection is available, the drainage system shall be connected to the <i>sewer</i>, and the connection shall be made in a manner that avoids damage to the <i>sewer</i> and is to the approval of the <i>network utility operator</i>.</p> <p><b>G13.3.4</b> Where no <i>sewer</i> is available, an <i>adequate</i> on-site disposal system shall be provided for <i>foul water</i> in the same manner as detailed in clause G14 “Industrial Liquid Waste”.</p>	

## G14 Industrial Liquid Waste

**FIRST SCHEDULE—continued****Clause G14—INDUSTRIAL LIQUID WASTE****Provisions****Limits on application****OBJECTIVE**

**G14.1** The objective of this provision is to safeguard people from injury or illness caused by infection or contamination resulting from industrial liquid waste.

**FUNCTIONAL REQUIREMENT**

**G14.2** *Buildings* in which industrial liquid waste is generated shall be provided with *adequate* spaces and facilities for the safe and hygienic collection, holding, treatment and disposal of the waste.

**PERFORMANCE**

**G14.3.1** Industrial liquid waste shall be conveyed to storage containers and within disposal systems in a way which will:

- (a) Transfer wastes from *buildings* safely and hygienically,
- (b) Avoid the likelihood of blockage and leakage,
- (c) Avoid the likelihood of foul air and gases entering *buildings*, and
- (d) Provides reasonable access for clearing of blockages.

**G14.3.2** Facilities for the storage, treatment, and disposal of industrial liquid waste shall be constructed:

- (a) With *adequate* capacity for the volume of waste and the frequency of disposal,
- (b) With *adequate* vehicle access for collection if required,
- (c) To avoid the likelihood of contamination of any potable water supplies in compliance with Clause G12 “Water Supplies”,

**FIRST SCHEDULE—continued****Provisions****Limits on application**

- (d) To avoid the likelihood of contamination of soils, ground water and waterways except as permitted under the Resource Management Act 1991.
- (e) From materials which are impervious both to the waste for which disposal is required, and to water,
- (f) To avoid the likelihood of foul air and gases accumulating within or entering into *buildings*,
- (g) To avoid the likelihood of unauthorised access by people, and
- (h) To permit easy cleaning and maintenance.

Amend 2  
Dec 1995

**G15 Solid Waste**

**FIRST SCHEDULE—continued**

**Clause G15—SOLID WASTE**

**Provisions**

**Limits on application**

**OBJECTIVE**

**G15.1** The objective of this provision is to safeguard people from injury or illness caused by infection or contamination from solid waste.

**FUNCTIONAL REQUIREMENT**

**G15.2** *Buildings* shall be provided with space and facilities for the collection, and safe hygienic holding prior to disposal, of solid waste arising from the *intended use* of the *buildings*.

Requirement G15.2 shall not apply to *Detached Dwellings*, *household units* of *Multi-unit Dwellings*, *Outbuildings* or *Ancilliary buildings* if there is independent access or private open space at ground level.

**PERFORMANCE**

**G15.3.1** Where provision is made within *buildings* for the collection and temporary holding of solid waste, the spaces provided shall be:

- (a) Of sufficient size for the volume of waste and frequency of disposal,
- (b) Provided with reasonable access for the depositing and collection of the waste,
- (c) Capable of maintaining sanitary conditions having regard to the types of waste and storage containers, and
- (d) Capable of maintaining the appropriate temperature for the type of waste stored.

**G15.3.2** Where a rubbish chute is provided, it shall be located and constructed to:

- (a) Convey the solid waste to an appropriate storage container,
- (b) Avoid the likelihood of blockage or leakage,
- (c) Permit easy cleaning and maintenance,

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- (d) Avoid the likelihood of foul air or gases accumulating or entering the *building*,
- (e) Avoid the likelihood of the spread of *fire* beyond the refuse chute,
- (f) Have openings that allow waste to be safely deposited in the chute, and
- (g) Restrict access by children, animals and vermin.

**G15.3.3** Where it is acceptable to the *network utility operator*, solid waste which has been suitably treated for disposal to a *sewer* may be discharged via a *foul water drain* complying with Clause G13 “Foul Water”.

**Limits on application**

# H Energy Efficiency

## H1 Energy Efficiency Provisions

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### 5 Clause H1 of code (energy efficiency provisions) replaced

The First Schedule of the principal regulations is amended by revoking clause H1, and substituting the following clause:

#### Clause H1—Energy efficiency provisions

##### Provisions

##### Limits on application

##### Objective

**H1.1** The objective of this provision is to facilitate efficient use of energy.

Objective H1.1 applies only when the energy is sourced from a *network utility operator* or a depletable energy resource.

##### Functional requirement

**H1.2** Buildings must be constructed to achieve an adequate degree of energy efficiency when that energy is used for—

- (a) modifying temperature or humidity, or both; or
- (b) providing hot water to *sanitary fixtures* or *sanitary appliances*, or both; or
- (c) providing artificial lighting

Requirement H1.2(a) does not apply to *assembly service buildings*, *industrial buildings*, *outbuildings*, or *ancillary buildings*, or to plant and equipment provided to modify temperature, humidity, or both.

Requirement H1.2(c) applies only to *commercial buildings* and *communal non-residential buildings* whose floor area is greater than 300 m<sup>2</sup>.

##### Performance

**H1.3.1** The *building* envelope enclosing spaces where the temperature or humidity (or both) are modified must be constructed to—

- (a) provide *adequate thermal resistance*; and
- (b) limit uncontrollable airflow.

**H1.3.2** Buildings must be constructed to ensure that the *building performance index* does not exceed:

- (a) 0.13 kWh in a *warm location*; and
- (b) 0.12 kWh in a *cool location*.

Performance H1.3.2 applies only to *housing*.

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**H1.3.3** Account must be taken of physical conditions likely to affect energy performance of *buildings*, including—

- (a) the thermal mass of *building elements*; and
- (b) the building orientation and shape; and
- (c) the airtightness of the building envelope; and
- (d) the heat gains from services, processes and occupants; and
- (e) the local climate; and
- (f) heat gains from solar radiation.

**H1.3.4** Systems for the heating, storage, or distribution of hot water to *sanitary fixtures* or *sanitary appliances* must, having regard to the energy source used,—

- (a) limit the energy lost in the heating process; and
- (b) be constructed to limit heat losses from storage vessels, and from distribution systems connected to storage vessels.

**H1.3.5** Artificial lighting fixtures must—

- (a) be located and sized to limit energy use, consistent with the *intended use* of space; and
- (b) be fitted with a means to enable light intensities to be reduced, consistent with reduced activity in the space.

Performance H1.3.4(b) applies only where individual storage vessels are 700 litres or less in capacity.

Performance H1.3.5 does not apply to lighting provided solely to meet the requirements of clause F6.

Marie Shroff,  
Clerk of the Executive Council.