

## Compliance Document for New Zealand Building Code Clause F7 Warning Systems – Third edition

Prepared by the Department of Building and Housing

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## Status of Compliance Documents

Compliance Documents are prepared by the Department of Building and Housing in accordance with section 22 of the Building Act 2004. A Compliance Document is for use in establishing compliance with the New Zealand Building Code.

A person who complies with a Compliance Document will be treated as having complied with the provisions of the Building Code to which the Compliance Document relates. However, a Compliance Document is only one method of complying with the Building Code. There may be alternative ways to comply.

Users should make themselves familiar with the preface to the New Zealand Building Code Handbook, which describes the status of Compliance Documents and explains alternative methods of achieving compliance.

Defined words (italicised in the text) and classified uses are explained in Clause A1 of the Building Code and in the Definitions at the start of this Compliance Document.

| <b>F7: Document History</b>   |   |   |   |
|---|---|---|---|
|   | <b>Date</b>                                   | <b>Alterations</b>  |   |
| First published   | July 1992                                     |   |   |
| Second edition incorporating Amendment 1  | December 1993                                 | p. v, Contents<br>p. vi, References   | p. vii, Definitions<br>p. 3 to 8, Complete rewrite            |
| Amendment 2   | 19 August 1994                                | pp. i and ii, Document History<br>p. 4, 1.2.5, 1.3.3, 1.3.4, 1.4.3  | p. 5, 1.4.4, 1.4.5, 1.5.4<br>p. 7 and 8, Index                |
| Amendment 3   | 1 December 1995                               | p. ii, Document History<br>p. vi, References<br>p. 3, 1.1.1, 1.1.2, 1.1.3,<br>1.2.1, 1.2.2, 1.2.3         | p. 4, 1.4.2<br>p. 5, 1.5.1<br>p. 6, 2.2.5 added               |
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| Third edition   | 1 December 2000<br>Effective from 1 June 2001 | Document revised – third edition issued   |   |
| Amendment 4   | 24 April 2003                                 | p. 3, Code Clause<br>p. 5, Contents<br>p. 7, References   | p. 13, 1.2.1 Type 1<br>pp. 17 and 18, 3.1-3.4<br>p. 20, Index |
| Reprinted incorporating Amendment 4   | April 2004                                    |   |   |
| Amendment 5<br>4 July 2005  | Effective 1 October 2005                      | pp. 1-2, Document History and Status<br>pp. 7-8, References<br>pp. 9-10, Definitions<br>pp. 13-14, F7/AS1 |   |
| <b>Note: Page numbers relate to the document at the time of Amendment and may not match page numbers in current document.</b> |   |   |   |

## Document Status

The most recent version of this document, as detailed in the Document History, is approved by the Chief Executive of the Department of Building and Housing. It is effective from 1 October 2005 and supersedes all previous versions of this document.

People using this Compliance Document should check for amendments on a regular basis. The Department of Building and Housing may amend any part of any Compliance Document at any time. Up-to-date versions of Compliance Documents are available from [www.building.dbh.govt.nz](http://www.building.dbh.govt.nz)

## References

For the purposes of New Zealand Building Code compliance, acceptable reference documents include only the quoted edition and specific amendments listed below.

|   |  | Where quoted   |
|---|--|--|
| <b>Standards New Zealand</b>                |  |  |
| Amend 5<br>Oct 2005                         | NZS 4512: 2003 Fire alarm systems in buildings   | AS1 1.1.1, 1.1.2,<br>1.1.3, 1.1.4, 1.1.5,<br>1.2.2, 1.2.3, 1.2.4,<br>1.2.6, 1.2.7, 1.3.2,<br>1.5.1, 2.1.2 b) |
|   | NZS 4515: 2003 Fire sprinkler systems for residential occupancies  | AS1 1.2.8  |
| Amend 5<br>Oct 2005                         | NZS 4541: 2003 Automatic fire sprinkler systems  | AS1 1.2.8  |
| <b>British Standards Institution</b>        |  |  |
|   | BS 5446:- Components of automatic fire alarm systems for residential premises  |  |
|   | Part 1: 1990 Specification for self-contained smoke alarms and point-type smoke detectors<br><i>Amends: 6863, 7648, 9628</i> | AS1 3.2.2  |
| <b>Standards Australia</b>                  |  |  |
| Amend 4<br>Apr 2003                         | AS/NZS 1668:- The use of ventilation and air conditioning in buildings   |  |
|   | Part 1: 1998 Fire and smoke control in multi-compartment building<br><i>Amend: 1</i>   | AS1 1.5.3  |
| Amend 5<br>Oct 2005                         | AS 1670:- Fire detection, warning, control and intercom systems – System design, installation and commissioning              |  |
|   | Part 6: 1997 Smoke alarms  | AS1 3.3.2  |
|   | AS 3786: 1993 Smoke alarms<br><i>Amends: 1, 2, 3</i>   | AS1 3.2.2  |
| <b>Underwriters Laboratories Inc</b>        |  |  |
|   | UL 217: 1997 Single and multiple station smoke alarms  | AS1 3.2.2  |
| <b>Underwriters' Laboratories of Canada</b> |  |  |
| Amend 4<br>Apr 2003                         | CAN/ULC S531: 1995 Smoke alarms  | AS1 3.2.2  |

## Definitions

Amend 5  
Oct 2005

See Compliance Document C/AS1 for the full list of fire safety definitions.

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

Amend 5  
Oct 2005

**Building** has the meaning ascribed to it by Sections 8 and 9 of the Building Act 2004.

**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*.

**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*.

**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.

**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.

**Household unit**

- a) means any *building* or group of *buildings*, or part of a *building* or group of *buildings*, that is:
  - i) used, or intended to be used, only or mainly for residential purposes; and
  - ii) occupied, or intended to be occupied, exclusively as the home or residence of not more than one household; but
- b) does not include a hostel, boarding house or other specialised accommodation.

Amend 5  
Oct 2005

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

**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.

**Person with a disability** means a *person* who has an impairment or a combination of impairments that limits the extent to which the person can engage in the activities, pursuits, and processes of everyday life, including, without limitation, any of the following:

- a) a physical, sensory, neurological, or intellectual impairment
- b) a mental illness.

Amend 5  
Oct 2005

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

**Type 3 – Automatic fire alarm system activated by heat detectors and manual call points**

**1.2.3** This system comprises a Type 2 system plus heat detectors and shall be installed in accordance with NZS 4512.

**Type 4 – Automatic fire alarm system activated by smoke detectors and manual call points**

**1.2.4** This system comprises a Type 2 system plus smoke detectors and shall be installed in accordance with NZS 4512.

**Type 5 – Automatic fire alarm system with modified smoke detection and manual call points**

**1.2.5** This system provides an optional alternative to the smoke detection part of Type 4 and Type 7 systems, and is restricted to single *firecells* containing sleeping accommodation, being *household units in purpose group SR* or individual *suites in purpose group SA*.

**1.2.6** A Type 5 system requires heat detectors or sprinklers (Type 3 or Type 6) in addition to the local smoke alarm system in each *household unit* or *suite firecell*. In *exitways* and common spaces the required Type 4 or Type 7 system shall not be modified. The system installation for Type 3 and Type 4 components shall comply with NZS 4512.

**COMMENT:**

The local smoke alarm system avoids the risk of total *building* evacuation and Fire Service call-out from nuisance false alarms in individual *household units* or *suites*. In the event of *fire*, the Type 3 or Type 6 system will initiate *building* evacuation and call the Fire Service.

**1.2.7** The system installation for the local smoke alarm component shall also comply with NZS 4512.

**Type 6 – Automatic fire sprinkler system with manual call points**

**1.2.8** This is a combined automatic *fire* sprinkler system and Type 2 alarm. Activation of the sprinklers shall automatically activate the audible alerting devices of the alarm system. Sprinkler installation shall comply with either NZS 4515 (which is limited to smaller *buildings*), or NZS 4541 as modified by Appendix D of Approved Document C/AS1.

**COMMENT:**

NZS 4541 and NZS 4515 require listed quick response sprinklers to be used throughout all *firecells* containing sleeping accommodation, except that fast response or standard response sprinklers may be used in the roof space.

**Type 7 – Automatic fire sprinkler system with smoke detectors and manual call points**

**1.2.9** This is a combined Type 6 and Type 4 alarm system (including a Type 2 system). Sprinkler installation shall comply with the requirements for a Type 6 alarm.

**COMMENT:**

Smoke detectors are used to gain an earlier warning to life-threatening situations than may be achieved from the response of sprinklers, particularly where a smouldering *fire* does not produce enough heat in its early stages to activate a sprinkler head.

**1.3 Location of Heat and Smoke Detectors**

**1.3.1** Table 4.1 of Approved Document C/AS1 describes the appropriate *fire* alarm system for the *purpose group* being considered. Automatic *fire* alarms which include heat detectors or smoke detectors shall have the appropriate detectors installed throughout the *firecells* of that *purpose group*, and the *safe paths*, unless specifically exempted by Table 4.1 of C/AS1.