



Dear Customer

Please find attached the January 2017 amendments to C/AS7 Acceptable Solution for Buildings Used for Vehicle Storage and Parking (Risk Group VP), published by the Ministry of Business, Innovation and Employment.

To update your printed copy of C/AS7, please make the following changes:

<b>Section</b>	<b>Previous version</b>	<b>January 2017 Amendment 4</b>
<b>C/AS7 Acceptable Solution for Buildings Used for Vehicle Storage and Parking (Risk Group VP)</b>		
Title pages	Remove document history/status	Replace with new title page and document history/status
C/AS7 Part 2	Remove page 15/16	Replace with new page 15/16
C/AS7 Parts 4 and 5	Remove page 19/20	Replace with new page 19/20



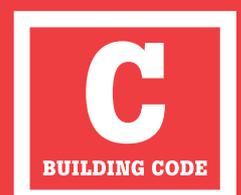


MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT  
HĪKINA WHAKATUTUKI

**C/AS7**

**Acceptable Solution for Buildings  
Used for Vehicle Storage and Parking  
(Risk Group VP)**

For New Zealand Building Code Clauses  
C1-C6 Protection from Fire



### Using this Acceptable Solution

The Ministry of Business, Innovation and Employment may amend parts of this Acceptable Solution at any time. People using this Acceptable Solution should check on a regular basis whether new versions have been published. The current version can be downloaded from [www.dbh.govt.nz/compliance-documents](http://www.dbh.govt.nz/compliance-documents)

Users should make themselves familiar with the preface to the New Zealand Building Code Handbook, which describes the status of Acceptable Solutions and explains other ways of achieving compliance.

Defined words (italicised in the text) are explained in the Building Code Clause A2 and in the Definitions section of this Acceptable Solution. Classified uses of buildings are explained in the Building Code Clause A1.

Enquiries about the content of this document should be directed to:



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from [www.building.govt.nz](http://www.building.govt.nz)**

**New Zealand Government**

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## Status of C/AS7

This Acceptable Solution C/AS7, for buildings used for vehicle storage and parking (Risk Group VP), provides a means of compliance with the New Zealand Building Code Clauses C1-C6 Protection from Fire. It is issued under section 22 of the Building Act 2004 as an Acceptable Solution.

This Acceptable Solution is one way that can be used to show compliance with the New Zealand Building Code Clauses C1-C6 Protection from Fire. Other ways of complying with the Building Code are described, in general terms, in the preface of the New Zealand Building Code Handbook.

### When can you use C/AS7

This Acceptable Solution is effective from 1 January 2017. It can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire. It does not apply to building consent applications submitted before 1 January 2017.

The previous version, Amendment 2, of this Acceptable Solution can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire until 30 May 2017. It can be used for building consent applications submitted before 31 May 2017.

Document History			
	Date	Alterations	
New document	Effective from 10 April 2012	C/AS7 is a new publication that can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire.	
Amendment 1 (Errata 1)	Effective from 15 February 2013 until 18 June 2014	p. 11 Definitions p. 19 4.1.2 p. 20 5.6.2	
Amendment 2	Effective from 19 December 2013 until 28 February 2015	p. 7 References p. 14 1.1.1, 1.1.2, Table 1.1	p. 15 2.2.1, 2.2.3
Amendment 3	Effective from 1 July 2014 until 30 May 2017	p. 9 Definitions p. 14 1.2, Table 1.1 p. 15 2.2.1	p. 17 3.4.1, Table 3.2 p. 18 4.1.1
Amendment 4	Effective 1 January 2017	p. 16 2.3.1	p. 19 4.1.3



# Part 2: Firecells, fire safety systems and fire resistance ratings

## CONTENTS

- 2.2 Fire safety systems
- 2.3 Fire resistance ratings

## 2.2 Fire safety systems

**2.2.1** The *fire safety systems* for *firecells* required for this *risk group* shall be as follows. *Fire safety system* types shall be as defined in Table 2.1. If automatic heat or smoke detection systems are provided in addition to the requirements of this paragraph, a direct connection to the Fire Service is not required.

Amend 3  
Jul 2014

### For ≤10 m escape height:

- a) Type 2 alarm system that need not be connected to the Fire Service (not required if there are less than 50 occupants and less than 10 vehicles), and
- b) Type 18 *building fire* hydrant system, unless the Fire Service hose run distance from Fire Service vehicular access to any point on any floor is less than 75 m.

Amend 2  
Dec 2013

### For >10 m escape height:

- a) Type 3 alarm system that need not be connected to the Fire Service, and
- b) Type 18 *building fire* hydrant system in all cases where the height from the Fire Service attendance point to any floor is greater than 15.0 m. Otherwise, a Type 18 system is required unless the Fire Service hose run distance from Fire Service vehicular access to any point on any floor is less than 75 m.

Amend 3  
Jul 2014

### Storage or parking using a vehicle stacking system

- a) Type 6 system, and
- b) Type 18 *building fire* hydrant system in all cases where the height from the Fire Service attendance point to any floor is greater than 15.0 m. Otherwise, a Type 18 system is required unless the Fire Service hose run distance from Fire Service vehicular access to any point on any floor is less than 75 m.

Amend 3  
Jul 2014

If a *risk group* VP is within a *building* that is protected with an automatic *fire* alarm system, the *risk group* VP must have at the minimum a Type 3 automatic heat detection system.

**2.2.3** If the *risk group* VP is required by this Acceptable Solution to be protected with a *fire* sprinkler system and the *risk group* VP is separated from the rest of the *building* by the greater of the two property ratings, the sprinkler system need not be extended throughout the *building*.

Amend 2  
Dec 2013

Table 2.1 Fire safety systems specified in this Acceptable Solution		
Type of system	System description	Relevant Standards for installation
2	Alarm system with manual call points	NZS 4512
3	Heat detection system with manual call points	NZS 4512
6	Automatic <i>fire</i> sprinkler system	NZS 4541
18	<i>Building fire</i> hydrant system	NZS 4510

### 2.3 Fire resistance ratings

#### FRR values

**2.3.1** Unless explicitly stated otherwise in this Acceptable Solution, the *fire resistance ratings (FRRs)* that apply for this *risk group* shall be as follows:

*Life rating* = 60 minutes

*Property rating* = 60 minutes.

Amend 4  
Jan 2017

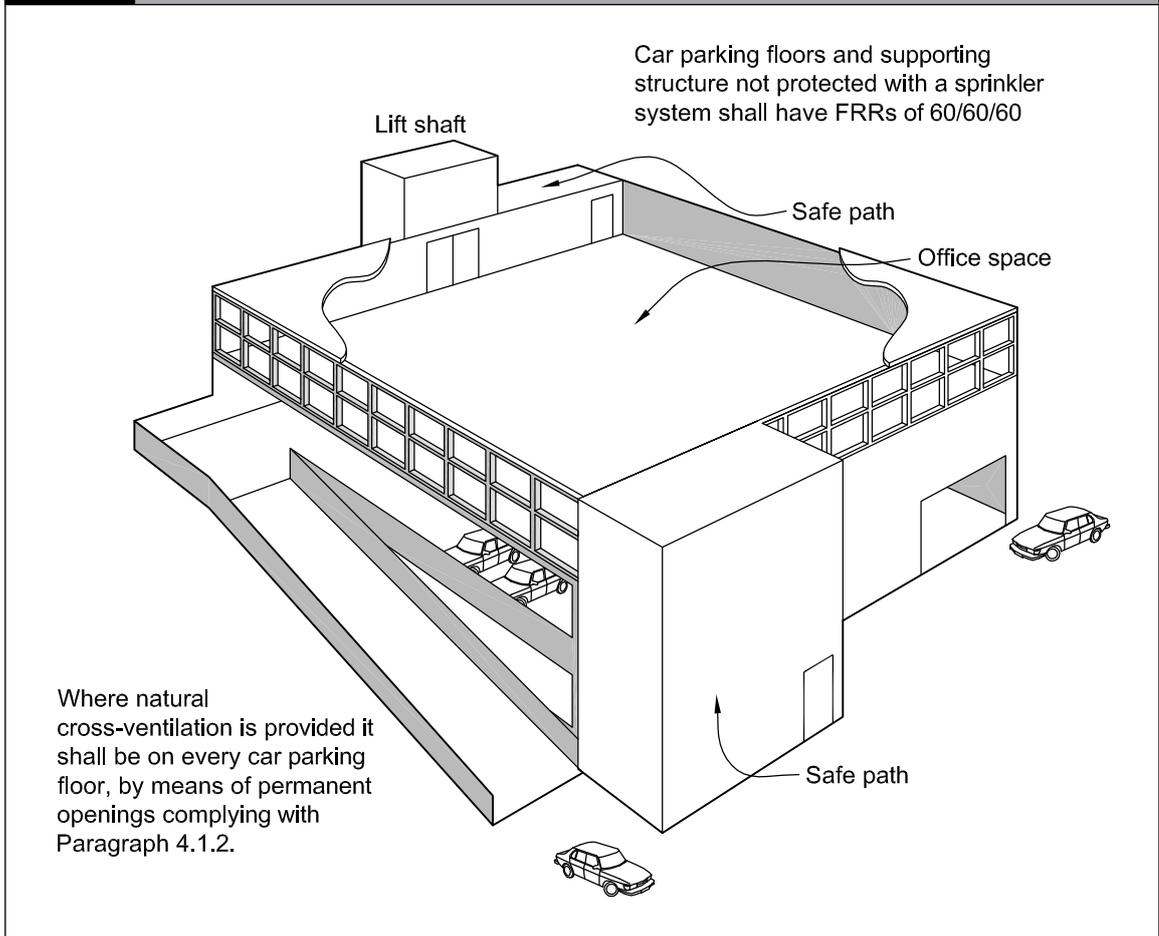
**2.3.2** If a *fire* sprinkler system or cross ventilation in accordance with Paragraph 4.1.2 is provided, the *FRRs* shall be:

*Life rating* = 30 minutes

*Property rating* = 30 minutes.

**2.3.3** If there is more than one *risk group* on one floor in the *building*, the highest required *FRR* shall be applied to common spaces and shared *escape routes* for that floor level.

**Figure 4.18 Car parking**  
Paragraphs 4.1.1 and 4.1.2



**Cross ventilation**

**4.1.2.** Cross ventilation requirements (see Figure 4.18) for every car parking floor shall be as follows:

- a) Where there is parking for more than 10 cars and the *building* is not sprinklered, cross ventilation in accordance with b) is required, and
- b) Effective cross ventilation in a car parking *firecell* is achieved by providing perimeter walls on each floor with permanent openings to the outside environment. The size of those openings shall either be:
  - i) no less than 50% of the wall area in each of any two opposing walls, or
  - ii) no less than 50% of the total perimeter wall area, with those openings distributed uniformly along at least half the total perimeter wall length.

Errata 1  
Feb 2013

**4.1.3** Where cross ventilation or sprinklers are provided the limitations on *intermediate floor* area do not apply.

Amend 4  
Jan 2017

**4.10 Intermittent activities**

**Solid waste storage**

**4.10.2** Solid waste storage areas need not be enclosed. Where they are enclosed within any *firecell*, they shall themselves be a separate *firecell* separated from adjacent *firecells* by *fire separations* having an *FRR* of 60 minutes or of 30 minutes if sprinklered (see Paragraph 4.11.5 of Acceptable Solution C/AS5 for waste chutes).



# Part 5: Control of external fire spread

## CONTENTS

- 5.6 Horizontal fire spread from roofs and open sided buildings
- 5.7 Vertical fire spread

## 5.6. Horizontal fire spread from roofs and open sided buildings

5.6.1. In *buildings* other than offices and laboratories where the roof of an unsprinklered *firecell* is within 1.0 m of a *relevant boundary*, horizontal *fire* spread shall be resisted by either:

- a) *Fire* rating (for *fire* exposure from below) that part of the roof within 1.0 m of the *relevant boundary*. The *FRR* shall be based on the *property rating* for the *firecell*, except that *insulation* is not required, or
- b) Extending the wall, being a *fire separation* along or adjacent to the *relevant boundary*, no less than 450 mm above the roof to form a parapet.

### Comment:

Sprinklered *firecells* within 1.0 m of a *relevant boundary* are not required to have *fire* rated roofs or walls extended to form parapets.

### Parapets for vehicle parking

5.6.2. Where vehicles are parked on an area of roof within 1.5 m of a *relevant boundary*, but the conditions of Acceptable Solution C/AS5 Paragraph 5.7.16 (for an adjacent higher wall) do not apply, a parapet shall be *constructed*. The parapet shall extend no less than 1.5 m above the roof level, on the side of the *relevant boundary*. The parapet shall have an *FRR* of no less than 30 minutes.

Errata 1  
Feb 2013

## 5.7 Vertical fire spread

### Roof vehicle parking

5.7.19. Where a roof used for vehicle car parking is within 1.5 m of a higher *external wall* and the adjacent *building* above contains sleeping *risk groups*, *external wall* protection above the adjacent lower roof shall be provided by *constructing* the critical part of the wall (that closer to the roof than 3.0 m vertically or 1.5 m horizontally) with an *FRR* of no less than 120/120/120.

5.7.20. Vertical distances shall be measured for vehicle car parking from the *building* roof level. (See Acceptable Solution C/AS5 Paragraph 5.6.1 for parapet protection against horizontal *fire* spread.)