



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Acceptable Solutions and Verification Methods

For New Zealand Building Code Clause
**G3 Food Preparation and Prevention
of Contamination**



Status of Verification Methods and Acceptable Solutions

Verification Methods and Acceptable Solutions are prepared by the Ministry of Business, Innovation and Employment in accordance with section 22 of the Building Act 2004. Verification Methods and Acceptable Solutions are for use in establishing compliance with the New Zealand Building Code.

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

Defined words (italicised in the text) and classified uses are explained in Clauses A1 and A2 of the Building Code and in the Definitions at the start of this document.

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



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI

Ministry of Business, Innovation and Employment
PO Box 1473, Wellington.
Telephone 0800 242 243
Email: info@building.govt.nz

**Verification Methods and Acceptable Solutions
are available from www.building.govt.nz**

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Document Status

The most recent version of this document (Amendment 2), as detailed in the Document History, is approved by the Chief Executive of the Ministry of Business, Innovation and Employment. It is effective from 1 January 2017 and supersedes all previous versions of this document.

The previous version of this document (Amendment 1) will cease to have effect on 30 May 2017.

People using this document should check for amendments on a regular basis. The Ministry of Business, Innovation and Employment may amend any part of any Verification Method or Acceptable Solution at any time. Up-to-date versions of Verification Methods and Acceptable Solutions are available from www.building.govt.nz

G3: Document History			
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Amendment 2	Effective 1 January 2017	p. 3 Building Code Clause G3 p. 7 Contents p. 9 References p. 11 Definitions	p. 15 Figure 1 p. 16 1.5.1, 1.5.2 p. 19 Index
Note: Page numbers relate to the document at the time of Amendment and may not match page numbers in current document.			

New Zealand Building Code

Clause G3 Food Preparation and Prevention of Contamination

This Clause is extracted from the New Zealand Building Code contained in the First Schedule of the Building Regulations 1992.

FIRST SCHEDULE—continued	
Clause G3—FOOD PREPARATION AND PREVENTION OF CONTAMINATION	
Provisions	Limits on application
<p>OBJECTIVE</p> <p>G3.1 The objective of this provision is to:</p> <ul style="list-style-type: none"> (a) Safeguard people from illness due to contamination, (b) Enable hygienic food preparation without loss of <i>amenity</i>, and (c) Ensure that <i>people with disabilities</i> are able to carry out normal activities and processes within <i>buildings</i>. <p>FUNCTIONAL REQUIREMENT</p> <p>G3.2.1 <i>Buildings</i> shall be provided with space and facilities for the hygienic storage, preparation and cooking of food, that are <i>adequate</i> for the <i>intended use</i> of the <i>building</i>.</p> <p>G3.2.2 <i>Buildings</i> used for the storage, manufacture or processing of food, including animal products, shall be constructed to safeguard the contents from contamination.</p> <p>G3.2.3 <i>Buildings</i> 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 <i>building</i> contents.</p> <p>PERFORMANCE</p> <p>G3.3.1 Food preparation facilities shall be hygienic and include:</p> <ul style="list-style-type: none"> (a) Space for a refrigerator, or a perishable food storage area capable of being cooled and protected from vermin and insects. 	<p>Objective G3.1(c) shall apply only to those <i>buildings</i> to which section 47A of the Act applies.</p> <p>Requirement G3.2.1 shall apply to <i>Housing</i>, work camps, old people's homes and early childhood centres, and where appropriate shall also apply to <i>Commercial</i> and <i>Industrial buildings</i> whose <i>intended uses</i> include the manufacture, preparation, packaging or storage of food.</p> <p>Performance G3.3.1 (a) and (b) shall apply to <i>Housing</i>, work camps, old people's homes, early childhood centres and <i>Commercial</i> or <i>Industrial buildings</i> whose <i>intended uses</i> include the handling of perishable food.</p>

Note: Section 47A is in the Building Act 1991. The equivalent section in the Building Act 2004 is section 118.

Effective 29 Dec 2000

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.

Contents

	Page
References	9
Definitions	11
Verification Method G3/VM1	13
Acceptable Solution G3/AS1	
1.0 Domestic Appliances and Facilities	15
1.1 Sink and preparation surface	15
1.2 Cooker	15
1.3 Perishable food store	15
1.4 Energy source	16
1.5 Minimum space	16
1.6 Wall linings	16
2.0 Commercial and Industrial Facilities	16
2.1 Interior linings for food processing areas	16
2.2 Interior linings in other areas	16
2.3 Wash-down areas	17
Index	19

Amend 2
Jan 2017

References

For the purposes of New Zealand Building Code (NZBC) compliance, the Standards and documents referenced in these Verification Methods and Acceptable Solutions (primary reference documents) must be the editions, along with their specific amendments, listed below. Where these primary reference documents refer to other Standards or documents (secondary reference documents), which in turn may also refer to other Standards or documents, and so on (lower-order reference documents), then the version in effect at the date of publication of these Verification Methods and Acceptable Solutions must be used.

Amend 2
Jan 2017

Building Research Association of New Zealand

BRANZ Technical Paper P36: 1983 Food processing floors, a guide to design, materials and construction.
W.R. Sharman

New Zealand Government Departments

Ministry of Agriculture and Fisheries
MQ1: 1988 Qual approvals manual

Where quoted

AS1 2.1.5

AS1 2.1.5

Definitions

This is an abbreviated list of definitions for words or terms particularly relevant to these Verification Methods and Acceptable Solutions. The definitions for any other italicised words may be found in the New Zealand Building Code Handbook.

Amend 2
Jan 2017

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*.

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

Amend 2
Jan 2017

Building has the meaning given to it by sections 8 and 9 of the *Building Act 2004*.

Contaminant has the meaning ascribed to it by the Resource Management Act 1991.

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

Household unit—

- (a) means a *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 1 household; but
- (b) does not include a hostel, boarding house, or other specialised accommodation.

Amend 2
Jan 2017

Impervious That which does not allow the passage of moisture.

Intended use, in relation to a *building*,—

- (a) includes any or all of the following:
 - (i) any reasonably foreseeable occasional use that is not incompatible with the *intended use*:
 - (ii) normal maintenance:
 - (iii) activities undertaken in response to *fire* or any other reasonably foreseeable emergency; but
- (b) does not include any other maintenance and repairs or rebuilding.

Amend 2
Jan 2017

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.

Amends
1 and 2

Verification Method G3/VM1

No specific test methods have been adopted for verifying compliance with the Performance of NZBC G3.

Acceptable Solution G3/AS1

1.0 Domestic Appliances and Facilities

1.0.1 This part of the acceptable solution applies only to *Housing*, work camps, old people's homes, and early childhood centres.

1.1 Sink and preparation surface

1.1.1 Utensil washing and food rinsing facilities shall have a sink with free draining surfaces with continuous falls to the outlet. The sink shall be capable of fully containing a solid cylinder of 300 mm diameter and 125 mm depth.

1.1.2 The food preparation surface shall have the minimum dimensions shown in Figure 1. A drainer integral with and draining to the sink is acceptable.

1.1.3 Food preparation surfaces shall be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, and tiles are examples of suitable materials for these surfaces.

1.1.4 Hot and cold water supply shall be provided to the sink as required by NZBC G12 "Water Supplies".

1.1.5 Plumbing and drainage for waste water from the sink shall be provided as required by NZBC G13 "Foul Water".

1.2 Cooker

1.2.1 A cooker with an oven and a hot plate, or a wall oven and a separate hob, shall be provided for cooking.

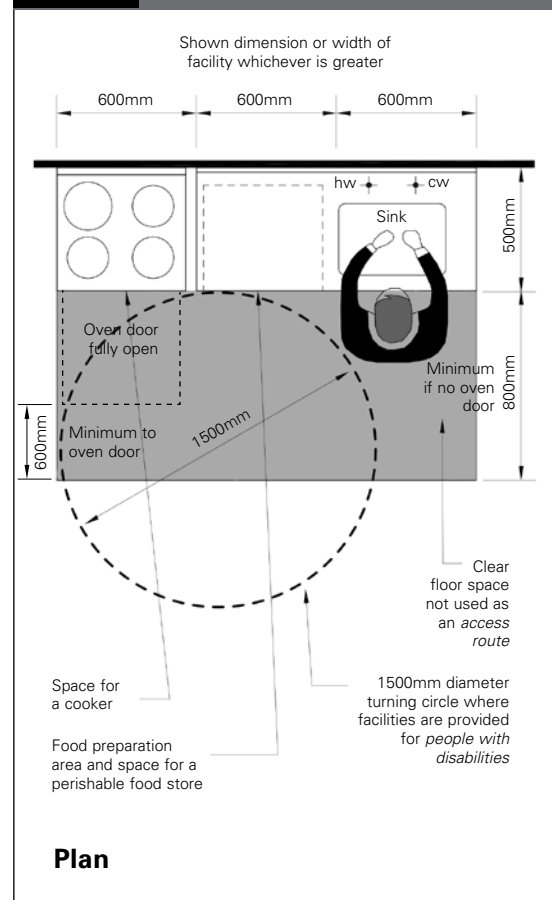
1.3 Perishable food store

1.3.1 The food store shall have a minimum capacity of:

- 0.5 m³ for use by up to 2 people
- 1.0 m³ for use by 3 to 5 people
- 1.0 m³ + 0.2 m³ per additional person over 5 people

1.3.2 The food storage space shall provide for either refrigeration, or ventilation to the outside air.

Figure 1: Preparation Area and Minimum Clear Space
Paragraphs 1.1.2 and 1.5



Amend 2
Jan 2017

Amend 2
Jan 2017

1.3.3 Ventilation may be by mechanical or natural means. Where natural air flow is used, wall vents to the exterior shall be installed near both the top and bottom of the storage area.

1.3.4 Ventilation openings shall be fly and vermin proof.

1.4 Energy source

1.4.1 Where a *building* is connected to a reticulated energy source, cooking and refrigeration appliances shall be permanently connected to a gas supply, complying with NZBC G11, or provided with connections to electrical outlets complying with NZBC G9.

1.5 Minimum space

1.5.1 The minimum clear space, adjacent to the facilities, shall be as shown in Figure 1, and shall extend at least 800 mm on the operational side of the facility. If there is an oven door that protrudes into this clear space when open, there must be at least 600 mm clearance as shown. The minimum clear space shall not form part of any *access route*.

COMMENT:

Where an *access route* passes the operational side of the facilities (for example, a kitchen area that serves as a thoroughfare to provide access to other spaces or the exterior), more space will be required than the 800 mm minimum for where there is not an *access route*. This situation is not covered by this Acceptable Solution. The amount of space that is appropriate is likely to depend on factors such as the layout of the facilities, the frequency of use of the facilities and of the *access route*, and the familiarity of occupants with each other.

1.5.2 Where facilities are provided for *people with disabilities*:

- a) space to allow a turning circle of 1500 mm shall be provided in front of those facilities as shown in Figure 1, and
- b) work surfaces shall be a maximum height of 900 mm above the floor.

COMMENT:

Guidance on the design of accessible kitchens is given at: <https://www.building.govt.nz/building-code-compliance/g-services-and-facilities/g3-food-preparation-and-prevention-of-contamination/public-accommodation-access/>

1.6 Wall linings

Wall linings adjacent to appliances and facilities shall have surfaces that can be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, tiles, wallboards with painted or applied *impervious* coatings or films, are examples of suitable materials for these surfaces.

2.0 Commercial and Industrial Facilities

2.0.1 This part of the acceptable solution applies only to *Commercial or Industrial buildings*.

2.1 Interior linings for food processing areas

2.1.1 Walls of concrete, cement plaster, or concrete block shall be sealed with a synthetic coating which provides an *impervious*, easily cleaned surface.

COMMENT:

1. Particular care is required in selecting suitable surface finishes for food processing areas. Concrete floors in particular which have not been specially treated or protected, may suffer deterioration from chemical attack.
2. The interior surfaces of food processing areas should be light in colour. This makes the presence of dirt obvious and facilitates effective cleaning.
3. Food processing spaces include all spaces, or spaces immediately surrounding or supportive to the space, where animals are slaughtered or dressed, or where any food product is processed, conveyed, held, refrigerated or packed.

2.1.2 Porous materials such as wood and plasterboard are not acceptable ceilings or wall linings.

2.1.3 Exposed trusses, service ducts and similar *building elements* in food processing areas shall be completely enclosed with a material which is non-absorbent and easily cleaned.

2.1.4 Surface finishes shall be protected from likely impact and not be subject to chipping or flaking.

COMMENT:

Wherever practical it is advisable to use materials which do not require repainting.

2.1.5 Lining materials, surface coatings and sealants complying with MAF Qual Approvals Manual MQ1 for specific applications, are acceptable.

COMMENT:

BRANZ Technical Paper P36 is a useful reference document for food processing floors.

2.2 Interior linings in other areas

2.2.1 Examples of other types of *buildings* needing special attention, are factories where electroplating or the processing of lead products is carried out, and mortuaries.

Amend 2
Jan 2017

2.2.2 Specific attention shall be given to protection from free water used for washing down premises, products or *building elements*, and from contaminating vapours or liquids which could form unhygienic or *hazardous* deposits on *building elements*.

2.2.3 The surfaces of floors, walls, ceilings and other *building elements*, as well as any joints in their *construction*, shall be *impervious* and easily cleaned. The following are acceptable surface materials:

- a) Polyvinylchloride sheet
- b) Ceramic tiles with waterproof grouted joints
- c) Concrete with steel trowel finish.

COMMENT:

In the case of floors the requirement for a smooth surface must be balanced against the need to provide reasonable slip resistance for *building* users.

2.2.4 Wall/floor junctions which are coved, shall have any floor covering carried vertically to at least 75 mm above floor level.

2.2.5 *Construction* methods shall avoid ledges, recesses, cracks or other areas where moisture or *contaminants* could accumulate and be difficult to remove.

2.3 Wash-down areas

2.3.1 *Buildings* where wash-down is used for cleaning (e.g. abattoirs or dairy process areas), shall also be constructed to avoid the accumulation of water.

2.3.2 Horizontal ledges shall be sloped at no less than 45° to prevent accumulation of dirt and moisture. Stairs and walkways shall be graded towards drainage points.

2.3.3 Floors shall be graded to remove all effluent and water to a disposal system complying with NZBC G13 or G14.

2.3.4 Floors shall be self-draining and evenly graded to fall to *adequately* sized floor outlets or an open channel. In food processing areas slopes shall be no less than 1 in 60 for monolithic type floors, or 1 in 50 for tiled floors.

2.3.5 In equipment wash-down areas, floor gradients shall be no less than 1 in 25.

2.3.6 Where floor-drain outlets are used, they shall be installed so that each outlet serves a floor area of no more than:

- a) 20 m² in dairy process areas,
- b) 40 m² in other areas.

2.3.7 Open channels shall be spaced no more than 10 m apart, be deep enough to avoid overflowing, and have a gradient to their outlet of no less than 1 in 60.

Index G3/VM1 & AS1

All references to Verification Methods and Acceptable Solutions are preceded by **VM** or **AS** respectively.

Amend 2
Jan 2017

Commercial Buildings	AS1 2.0.1
Early childhood centres	AS1 1.0.1
Electricity	AS1 1.4.1
Food cooking	AS1 1.2.1, 1.4.1
Food preparation	
surfaces	AS1 1.1.2, 1.1.3, Figure 1
Food rinsing	AS1 1.1.1
Food storage	AS1 1.3.1
refrigeration	AS1 1.3.2, 1.4.1
ventilation	AS1 1.3.2, 1.3.3, 1.3.4
Gas	AS1 1.4.1
Hobs	AS1 1.2.1
Hot plates	AS1 1.2.1
Housing	AS1 1.0.1
Industrial buildings	AS1 2.0.1
Interior linings	AS1 1.6, 2.2
ceilings	AS1 2.1.2, 2.2.3
floors	AS1 2.2.3, 2.2.4, 2.3.3, 2.3.4, 2.3.5, 2.3.6
walls	AS1 1.6, 2.1.1, 2.1.2, 2.2.3, 2.2.4
Minimum clear space to facilities	AS1 , 1.5.1, Figure 1
Old people's homes	AS1 1.0.1
Ovens	AS1 1.2.1
People with disabilities	AS1 1.5.2
Plumbing	AS1 1.1.5
Sinks	AS1 1.1.5
Utensil washing	AS1 1.1.1
Wash-down areas	AS1 2.3
Water supply	
hot and cold	AS1 1.1.4
Work camps	AS1 1.0.1

Amend 2
Jan 2017

