

**Performance
Requirements
extracted from the
National Construction
Code 2015**



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INTRODUCTION

THE NATIONAL CONSTRUCTION CODE SERIES

The National Construction Code Series (NCC) is an initiative of the Council of Australian Governments developed to incorporate all on-site construction requirements into a single code. The Building Code of Australia (BCA) is Volume One and Two of the NCC; the Plumbing Code of Australia (PCA) is Volume Three of the NCC.

FORMAT

The NCC is published in three volumes:

VOLUME ONE:

pertains primarily to Class 2 to 9 buildings.

VOLUME TWO:

pertains primarily to Class 1 and 10 buildings (houses, sheds, carports, etc).

VOLUME THREE:

pertains primarily to plumbing and drainage associated with all classes of buildings.

All three volumes are drafted in a performance format allowing a choice of *Deemed-to-Satisfy Provisions* or flexibility to develop *Alternative Solutions* based on existing or new innovative building, plumbing and drainage products, systems and designs.

ABOUT THE NCC PERFORMANCE REQUIREMENTS EXTRACT

This publication contains the Performance Requirements extracted from Volumes One, Two and Three of the NCC and is referred to as the National Construction Code Performance Requirements Extract. The purpose of this publication is to emphasise that the Performance Requirements are the only mandatory requirements of the NCC.

Being an extract only, this publication is not suitable for legal reference and cannot be used in isolation where compliance with the NCC is required.

It should be noted that only the NCC Performance Requirements are reproduced in this publication. This publication does not contain other components of the NCC that may be relevant when developing a performance solution to meet the NCC Performance Requirements, for example—

- Verification Methods;
- defined terms; or
- State and Territory variations, additional or deletions to the Performance Requirements, however flags identifying variations, additions or deletions are located within relevant provisions of this document.

The ABCB is seeking feedback on this publication, specifically on its usefulness and where it could be improved. Comments or suggestions are encouraged and can be sent by email to Quantification@abcb.gov.au

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VOLUME ONE

PERFORMANCE REQUIREMENTS

PERFORMANCE REQUIREMENTS

BP1.1

- (a) A building or structure, during construction and use, with appropriate degrees of reliability, must—
- (i) perform adequately under all reasonably expected design actions; and
 - (ii) withstand extreme or frequently repeated design actions; and
 - (iii) be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and
 - (iv) avoid causing damage to *other properties*,
- by resisting the actions to which it may reasonably expect to be subjected.
- (b) The actions to be considered to satisfy (a) include but are not limited to—
- (i) permanent actions (dead loads); and
 - (ii) imposed actions (live loads arising from occupancy and use); and
 - (iii) wind action; and
 - (iv) earthquake action; and
 - (v) snow action; and
 - (vi) liquid pressure action; and
 - (vii) ground water action; and
 - (viii) rainwater action (including ponding action); and
 - (ix) earth pressure action; and
 - (x) differential movement; and
 - (xi) time dependent effects (including creep and shrinkage); and
 - (xii) thermal effects; and
 - (xiii) ground movement caused by—
 - (A) swelling, shrinkage or freezing of the subsoil; and
 - (B) landslide or subsidence; and
 - (C) siteworks associated with the building or structure; and
 - (xiv) *construction activity actions*; and
 - (xv) termite actions.

BP1.2

The structural resistance of materials and forms of construction must be determined using five percentile characteristic material properties with appropriate allowance for—

- (a) known construction activities; and
- (b) type of material; and
- (c) characteristics of the site; and
- (d) the degree of accuracy inherent in the methods used to assess the structural behaviour; and
- (e) action effects arising from the differential settlement of foundations, and from restrained dimensional changes due to temperature, moisture, shrinkage, creep and similar effects.

BP1.3

Glass installations that are at risk of being subjected to human impact must have glazing that—

- (a) if broken on impact, will break in a way that is not likely to cause injury to people; and
- (b) resists a reasonably foreseeable human impact without breaking; and
- (c) is protected or marked in a way that will reduce the likelihood of human impact.

BP1.4

Qld BP1.4

SA BP1.4

- (a) A building in a *flood hazard area*, must be designed and constructed, to the degree necessary, to resist flotation, collapse or significant permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the *defined flood event*.
- (b) The actions and requirements to be considered to satisfy (a) include but are not limited to—
 - (i) flood actions; and
 - (ii) elevation requirements; and
 - (iii) foundation and footing requirements; and
 - (iv) requirements for enclosures below the *flood hazard level*; and
 - (v) requirements for structural connections; and
 - (vi) material requirements; and
 - (vii) requirements for utilities; and
 - (viii) requirements for occupant egress.

Application:

BP1.4 only applies to—

- (a) a Class 2 or 3 building or Class 4 part of a building; and
- (b) a Class 9a *health-care building*; and

(c) a Class 9c building.

SECTION C FIRE RESISTANCE

PERFORMANCE REQUIREMENTS

CP1

A building must have elements which will, to the degree necessary, maintain structural stability during a fire appropriate to—

- (a) the function or use of the building; and
- (b) the *fire load*; and
- (c) the potential *fire intensity*; and
- (d) the *fire hazard*; and
- (e) the height of the building; and
- (f) its proximity to *other property*; and
- (g) any active *fire safety systems* installed in the building; and
- (h) the size of any *fire compartment*; and
- (i) *fire brigade* intervention; and
- (j) other elements they support; and
- (k) the *evacuation time*.

CP2

- (a) A building must have elements which will, to the degree necessary, avoid the spread of fire—
 - (i) to *exits*; and
 - (ii) to *sole-occupancy units* and *public corridors*; and

Application:

CP2(a)(ii) only applies to a Class 2 or 3 building or Class 4 part of a building.

- (iii) between buildings; and
 - (iv) in a building.
- (b) Avoidance of the spread of fire referred to in (a) must be appropriate to—
 - (i) the function or use of the building; and
 - (ii) the *fire load*; and
 - (iii) the potential *fire intensity*; and
 - (iv) the *fire hazard*; and

- (v) the number of *storeys* in the building; and
- (vi) its proximity to *other property*; and
- (vii) any active *fire safety systems* installed in the building; and
- (viii) the size of any *fire compartment*; and
- (ix) *fire brigade* intervention; and
- (x) other elements they support; and
- (xi) the *evacuation time*.

CP3

A building must be protected from the spread of fire and smoke to allow sufficient time for the orderly evacuation of the building in an emergency.

Application:

CP3 only applies to—

- (a) a *patient care area* of a Class 9a *health-care building*; and
- (b) a Class 9c building.

CP4

To maintain tenable conditions during occupant evacuation, a material and an assembly must, to the degree necessary, resist the spread of fire and limit the generation of smoke and heat, and any toxic gases likely to be produced, appropriate to—

- (a) the *evacuation time*; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and
- (d) any active *fire safety systems* installed in the building.

Application:

CP4 applies to linings, materials and assemblies in a Class 2 to 9 building.

CP5

A concrete *external wall* that could collapse as a complete panel (e.g. tilt-up and pre-cast concrete) must be designed so that in the event of fire within the building the likelihood of outward collapse is avoided.

Limitation:

CP5 does not apply to a building having more than two *storeys* above ground level.

CP6

A building must have elements, which will, to the degree necessary, avoid the spread of fire from service equipment having—

- (a) a high *fire hazard*; or

-
- (b) a potential for explosion resulting from a high *fire hazard*.

CP7

A building must have elements, which will, to the degree necessary, avoid the spread of fire so that emergency equipment provided in a building will continue to operate for a period of time necessary to ensure that the intended function of the equipment is maintained during a fire.

CP8

Any building element provided to resist the spread of fire must be protected, to the degree necessary, so that an adequate level of performance is maintained—

- (a) where openings, construction joints and the like occur; and
- (b) where penetrations occur for building services.

CP9

Access must be provided to and around a building, to the degree necessary, for *fire brigade* vehicles and personnel to facilitate *fire brigade* intervention appropriate to—

- (a) the function or use of the building; and
- (b) the *fire load*; and
- (c) the potential *fire intensity*; and
- (d) the *fire hazard*; and
- (e) any active *fire safety systems* installed in the building; and
- (f) the size of any *fire compartment*.

SECTION D ACCESS AND EGRESS

ACT DP0.1—0.5

PERFORMANCE REQUIREMENTS

DP1

Access must be provided, to the degree necessary, to enable—

- (a) people to—
 - (i) approach the building from the road boundary and from any *accessible* carparking spaces associated with the building; and
 - (ii) approach the building from any *accessible* associated building; and
 - (iii) access work and public spaces, accommodation and facilities for personal hygiene; and
- (b) identification of *accessways* at appropriate locations which are easy to find.

Limitation:

DP1 does not apply to a Class 4 part of a building.

DP2

So that people can move safely to and within a building, it must have—

- (a) walking surfaces with safe gradients; and
- (b) any doors installed to avoid the risk of occupants—
 - (i) having their egress impeded; or
 - (ii) being trapped in the building; and
- (c) any stairways and ramps with—
 - (i) slip-resistant walking surfaces on—
 - (A) ramps; and
 - (B) stairway treads or near the edge of the nosing; and
 - (ii) suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
 - (iii) suitable landings to avoid undue fatigue; and
 - (iv) landings where a door opens from or onto the stairway or ramp so that the door does not create an obstruction; and
 - (v) in the case of a stairway, suitable safe passage in relation to the nature, volume and frequency of likely usage.

DP3

Where people could fall—

- (a) 1 m or more—
 - (i) from a floor or roof or through an opening (other than through an openable window) in the *external wall* of a building; or
 - (ii) due to a sudden change of level within or associated with a building; or
- (b) 2 m or more from a floor through an openable window—
 - (i) in a bedroom in a Class 2 or 3 building or a Class 4 part of a building; or
 - (ii) in a Class 9b *early childhood centre*; or
- (c) 4 m or more from a floor through an openable window not covered by (b), a barrier must be provided which must be—
 - (d) continuous and extend for the full extent of the hazard; and
 - (e) of a height to protect people from accidentally falling from the floor or roof or through the opening or openable window; and
 - (f) constructed to prevent people from falling through the barrier; and
 - (g) capable of restricting the passage of children; and
 - (h) of strength and rigidity to withstand—
 - (i) the foreseeable impact of people; and
 - (ii) where appropriate, the static pressure of people pressing against it.

Limitations:

DP3 does not apply where such a barrier would be incompatible with the intended use of an area such as a stage, loading dock or the like.

DP3(g) does not apply to—

- (a) *fire-isolated stairways*, *fire-isolated ramps*, and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and
- (b) Class 7 (other than *carparks*) and Class 8 buildings and parts of buildings containing those classes.

DP4

Exits must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to—

- (a) the travel distance; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and
- (d) the height of the building; and
- (e) whether the *exit* is from above or below ground level.

DP5

To protect evacuating occupants from a fire in the building *exits* must be fire-isolated, to the degree necessary, appropriate to—

- (a) the number of *storeys* connected by the *exits*; and
- (b) the *fire safety system* installed in the building; and
- (c) the function or use of the building; and
- (d) the number of *storeys* passed through by the *exits*; and
- (e) *fire brigade* intervention.

DP6

So that occupants can safely evacuate the building, paths of travel to exits must have dimensions appropriate to—

- (a) the number, mobility and other characteristics of occupants; and
- (b) the function or use of the building.

Limitation:

DP6 does not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building.

DP7

Where a lift is intended to be used in addition to the *required exits* to assist occupants to evacuate a building safely, the type, number, location and fire-isolation must be appropriate to—

- (a) the travel distance to the lift; and
- (b) the number, mobility and other characteristics of occupants; and
- (c) the function or use of the building; and
- (d) the number of *storeys* connected by the lift; and
- (e) the *fire safety system* installed in the building; and
- (f) the waiting time, travel time and capacity of the lift; and
- (g) the reliability and availability of the lift; and
- (h) the emergency procedures for the building.

DP8

Carparking spaces for use by people with a disability must be—

- (a) provided, to the degree necessary, to give equitable access for carparking; and
- (b) designated and easy to find.

Limitation:

DP8 does not apply to a building where—

-
- (a) a parking service is provided; and
 - (b) direct access to any carparking spaces by the general public or occupants is not available.

DP9

An inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.

Limitation:

DP9 does not apply to—

- (a) a Class 4 part of a building; or
- (b) an inbuilt communication system used only for emergency warning purposes.

Tas DP10

PART E1 FIRE FIGHTING EQUIPMENT

PERFORMANCE REQUIREMENTS

EP1.1

A fire hose reel system must be installed to the degree necessary to allow occupants to safely undertake initial attack on a fire appropriate to—

- (a) the size of the *fire compartment*; and
- (b) the function or use of the building; and
- (c) any other *fire safety systems* installed in the building; and
- (d) the *fire hazard*.

EP1.2

Fire extinguishers must be installed to the degree necessary to allow occupants to undertake initial attack on a fire appropriate to—

- (a) the function or use of the building; and
- (b) any other *fire safety systems* installed in the building; and
- (c) the *fire hazard*.

EP1.3

A fire hydrant system must be provided to the degree necessary to facilitate the needs of the *fire brigade* appropriate to—

- (a) fire-fighting operations; and
- (b) the *floor area* of the building; and
- (c) the *fire hazard*.

Application:

EP1.3 only applies to a building where a *fire brigade* is available to attend.

EP1.4

NSW EP1.4

An *automatic* fire suppression system must be installed to the degree necessary to control the development and spread of fire appropriate to—

- (a) the size of the *fire compartment*; and
- (b) the function or use of the building; and
- (c) the *fire hazard*; and

- (d) the height of the building.

EP1.5

Suitable means of fire-fighting must be installed to the degree necessary in a building under construction to allow initial fire attack by construction workers and for the *fire brigade* to undertake attack on the fire appropriate to—

- (a) the *fire hazard*; and
(b) the height the building has reached during its construction.

EP1.6

Suitable facilities must be provided to the degree necessary in a building to co-ordinate *fire brigade* intervention during an emergency appropriate to—

- (a) the function or use of the building; and
(b) the *floor area* of the building; and
(c) the height of the building.

Tas EP1.7

PERFORMANCE REQUIREMENTS**EP2.1**

In a building providing sleeping accommodation, occupants must be provided with *automatic* warning on the detection of smoke so they may evacuate in the event of a fire to a *safe place*.

Application:

EP2.1 only applies to a Class 2, 3, 9a or 9c building or Class 4 part of a building.

EP2.2

- (a) In the event of a fire in a building the conditions in any *evacuation route* must be maintained for the period of time occupants take to evacuate the part of the building so that—
- (i) the temperature will not endanger human life; and
 - (ii) the level of visibility will enable the *evacuation route* to be determined; and
 - (iii) the level of toxicity will not endanger human life.
- (b) The period of time occupants take to evacuate referred to in (a) must be appropriate to—
- (i) the number, mobility and other characteristics of the occupants; and
 - (ii) the function or use of the building; and
 - (iii) the travel distance and other characteristics of the building; and
 - (iv) the *fire load*; and
 - (v) the potential *fire intensity*; and
 - (vi) the *fire hazard*; and
 - (vii) any active *fire safety systems* installed in the building; and
 - (viii) *fire brigade* intervention.

Limitation:

EP2.2 does not apply to an *open-deck carpark* or *open spectator stand*.

PERFORMANCE REQUIREMENTS**EP3.1**

Stretcher facilities must be provided, to the degree necessary—

- (a) in at least one emergency lift *required* by EP3.2; or
- (b) where an emergency lift is not *required* and a passenger lift is provided, in at least one lift, to serve each floor in the building served by the passenger lift.

EP3.2

One or more passenger lifts fitted as emergency lifts to serve each floor served by the lifts in a building must be installed to facilitate the activities of the *fire brigade* and other emergency services personnel.

Application:

EP3.2 only applies to—

- (a) a building with an *effective height* of more than 25 m; and
- (b) a Class 9a building in which *patient care areas* are located at a level that does not have direct access to a road or *open space*.

EP3.3

Signs or other means must be provided to alert occupants about the use of a lift during an emergency.

EP3.4

When a passenger lift is provided in a building *required* to be *accessible*, it must be suitable for use by people with a disability.

PART E4

EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

PERFORMANCE REQUIREMENTS

EP4.1

A level of illumination for safe evacuation in an emergency must be provided, to the degree necessary, appropriate to—

- (a) the function or use of the building; and
- (b) the *floor area* of the building; and
- (c) the distance of travel to an *exit*.

Limitation:

EP4.1 does not apply to the internal parts of a *sole-occupancy unit* in a Class 2, 3 or 9c building or Class 4 part of a building.

EP4.2

To facilitate evacuation, suitable signs or other means of identification must, to the degree necessary—

- (a) be provided to identify the location of *exits*; and
- (b) guide occupants to *exits*; and
- (c) be clearly visible to occupants; and
- (d) operate in the event of a power failure of the main lighting system for sufficient time for occupants to safely evacuate.

Limitation:

EP4.2 does not apply to the internal parts of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building.

EP4.3

To warn occupants of an emergency and assist evacuation of a building, a sound system and intercom system for emergency purposes must be provided, to the degree necessary, appropriate to—

- (a) the *floor area* of the building; and
- (b) the function or use of the building; and
- (c) the height of the building.

PERFORMANCE REQUIREMENTS**FP1.1**

Surface water, resulting from a storm having an *average recurrence interval* of 20 years and which is collected or concentrated by a building or *sitework*, must be disposed of in a way that avoids the likelihood of damage or nuisance to any *other property*.

FP1.2

Surface water, resulting from a storm having an *average recurrence interval* of 100 years must not enter the building.

Limitation:

FP1.2 does not apply to—

- (a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or
- (b) a garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes; or
- (c) an *open spectator stand* or *open-deck carpark*.

FP1.3

A drainage system for the disposal of *surface water* resulting from a storm having an *average recurrence interval* of—

- (a) 20 years must—
 - (i) convey *surface water* to an appropriate *outfall*; and
 - (ii) avoid *surface water* damaging the building; and
- (b) 100 years must avoid the entry of *surface water* into a building.

FP1.4

A roof and *external wall* (including openings around *windows* and doors) must prevent the penetration of water that could cause—

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements.

Limitation:

FP1.4 does not apply to—

- (a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or
- (b) a garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes; or
- (c) an *open spectator stand* or *open-deck carpark*.

FP1.5

SA FP1.5

Moisture from the ground must be prevented from causing—

- (a) undue dampness or deterioration of building elements; and
- (b) unhealthy or dangerous conditions, or loss of amenity for occupants.

Limitation:

FP1.5 does not apply to—

- (a) a Class 7 or 8 building where in the particular case there is no necessity for compliance; or
- (b) a garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes; or
- (c) an *open spectator stand* or *open-deck carpark*.

FP1.6

SA FP1.6

Overflow from a bathroom, laundry facility or the like must be prevented from penetrating to—

- (a) another *sole-occupancy unit* used for sleeping accommodation; and
- (b) a public space,

in a *storey* below in the same building.

FP1.7

To protect the structure of the building and to maintain the amenity of the occupants, water must be prevented from penetrating—

- (a) behind fittings and linings; and
- (b) into concealed spaces,

of *sanitary compartments*, bathrooms, laundries and the like.

SA FP1.8

PART F2

SANITARY AND OTHER FACILITIES

PERFORMANCE REQUIREMENTS

FP2.1

Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or associated with a building, to the degree necessary, appropriate to—

- (a) the function or use of the building; and
- (b) the number and gender of the occupants; and
- (c) the disability or other particular needs of the occupants.

FP2.2

Laundrying facilities or space for laundrying facilities and the means for the sanitary disposal of waste water must be provided in a convenient location within or associated with a building appropriate to the function or use of the building.

Vic FP2.2 Application

Application:

FP2.2 only applies to—

- (a) a Class 2 building or Class 4 part of a building; and
- (b) a Class 9a *health-care building*; and
- (c) a Class 9b *early childhood centre*; and
- (d) a Class 9c building.

FP2.3

A facility must be provided which includes—

- (a) a means for food rinsing, utensil washing and the sanitary disposal of associated waste water; and
- (b) a means for cooking food; and
- (c) a space for food preparation.

Application:

FP2.3 only applies to—

- (a) a Class 2 building or Class 4 part of a building; and
- (b) a Class 9a *health-care building*; and
- (c) a Class 9b *early childhood centre*; and
- (d) a Class 9c building.

FP2.4

Suitable means must be provided in a building containing wards or bedrooms to facilitate the emptying of sewage or dirty water from containers.

Application:

FP2.4 only applies to a Class 9a or 9c building.

FP2.5

A *sanitary compartment* must be constructed with sufficient space or other means to permit an unconscious occupant to be removed from the compartment.

FP2.6

NSW FP2.6

Hot water, warm water and cooling water systems installed in a building must control the accumulation of harmful levels of micro-organisms.

Limitation:

FP2.6 does not apply to a system serving only a single *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building.

PART F3

ROOM HEIGHTS

PERFORMANCE REQUIREMENTS

FP3.1

Vic FP3.1

A *habitable room* or space must have sufficient height that does not unduly interfere with its intended function.

PERFORMANCE REQUIREMENTS**FP4.1**

Sufficient openings must be provided and distributed in a building so that natural light, when available, provides a level of *illuminance* appropriate to the function or use of that part of the building.

FP4.2

Artificial lighting must be installed to provide a level of *illuminance* appropriate to the function or use of the building to enable safe movement by occupants.

FP4.3

A space in a building used by occupants must be provided with means of ventilation with *outdoor air* which will maintain adequate air quality.

FP4.4

A mechanical air-handling system installed in a building must control—

- (a) the circulation of objectionable odours; and
- (b) the accumulation of harmful contamination by micro-organisms, pathogens and toxins.

FP4.5

Contaminated air must be disposed of in a manner which does not unduly create a nuisance or hazard to people in the building or *other property*.

PERFORMANCE REQUIREMENTS**FP5.1**

Floors separating—

- (a) *sole-occupancy units*; or
- (b) a *sole-occupancy unit* from a plant room, lift *shaft*, stairway, *public corridor*, public lobby, or the like, or a part of a different classification,

must provide insulation against the transmission of airborne and impact generated sound sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.1 only applies to a Class 2 or 3 building.

FP5.2

Walls separating *sole-occupancy units* or a *sole-occupancy unit* from a plant room, lift *shaft*, stairway, *public corridor*, public lobby, or the like, or parts of a different classification, must provide insulation against the transmission of—

- (a) airborne sound; and
- (b) impact generated sound, if the wall is separating a bathroom, *sanitary compartment*, laundry or kitchen in one *sole-occupancy unit* from a *habitable room* (other than a kitchen) in an adjoining unit,

sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.2 only applies to a Class 2 or 3 building.

FP5.3

The *required* sound insulation of a floor or a wall must not be compromised by—

- (a) the incorporation or penetration of a pipe or other service element; or
- (b) a door assembly.

Application:

FP5.3 only applies to a Class 2 or 3 building.

FP5.4

Floors separating *sole-occupancy units* must provide insulation against the transmission of airborne and impact generated sound sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.4 only applies to a Class 9c building.

FP5.5

Walls separating *sole-occupancy units*, or a *sole-occupancy unit* from a kitchen, bathroom, *sanitary compartment* (not being an associated ensuite), laundry, plant room or utilities room, must provide insulation against the transmission of—

- (a) airborne sound; and
- (b) impact generated sound, if the wall separates a *sole-occupancy unit* from a kitchen or laundry,

sufficient to prevent illness or loss of amenity to the occupants.

Application:

FP5.5 only applies to a Class 9c building.

FP5.6

The *required* sound insulation of a floor or a wall must not be compromised by the incorporation or penetration of a pipe or other service element.

Application:

FP5.6 only applies to a Class 9c building.

Tas GF1.5

PERFORMANCE REQUIREMENTS

GP1.1

NT GP1.1

A *swimming pool* must have adequate means of draining the pool in a manner which will not—

- (a) cause illness to people; or
- (b) affect *other property*.

GP1.2

ACT GP1.2(a)

NSW GP1.2(a)

NT GP1.2(a)

Qld GP1.2(a)

SA GP1.2(a)

Tas GP1.2(a)

Vic GP1.2(a)

WA GP1.2(a)

- (a) A barrier must be provided to a *swimming pool* and must—
 - (i) be continuous for the full extent of the hazard; and
 - (ii) be of a strength and rigidity to withstand the foreseeable impact of people; and
 - (iii) restrict the access of young children to the pool and the immediate pool surrounds; and
 - (iv) have any gates and doors fitted with latching devices not readily operated by young children, and constructed to automatically close and latch.
- (b) A *swimming pool* water recirculation system must incorporate safety measures to avoid entrapment of, or injury to, a person.

Application

GP1.2(b) only applies to a *swimming pool* with a depth of water more than 300 mm.

GP1.3

Any refrigerated or cooling chamber, or the like which is of sufficient size for a person to enter must—

-
- (a) have adequate means of communicating with or alerting other occupants in the building in the case of an emergency; and
 - (b) have a door which is—
 - (i) of adequate dimensions to allow occupants to readily escape; and
 - (ii) openable from inside without a key at all times.

GP1.4

Any strong-room, vault or the like which is of sufficient size for a person to enter must—

- (a) have adequate means of communicating with or alerting other occupants in the building in the case of an emergency; and
- (b) have internal lighting controllable only from within the room; and
- (c) have an external indicator that the room is occupied.

GP1.5

Fencing or other barriers must be provided around any outdoor play space, in which the design and height of the fencing or other barriers, including the—

- (a) design of gates and fittings; and
- (b) proximity of the barriers to any permanent structure on the property,

must ensure that children cannot go through, over or under the fencing or other barriers.

Application

GP1.5 only applies to a Class 9b *early childhood centre*.

Tas GP1.6

PERFORMANCE REQUIREMENTS**GP2.1**

Where provided in a building, a combustion appliance and its associated components, including an open fire-place, chimney, flue, chute, hopper or the like, must be installed—

- (a) to withstand the temperatures likely to be generated by the appliance; and
- (b) so that it does not raise the temperature of any building element to a level that would adversely affect the element's physical or mechanical properties or function; and
- (c) so that hot products of combustion will not—
 - (i) escape through the walls of the associated components; and
 - (ii) discharge in a position that will cause fire to spread to nearby *combustible* materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like.

GP2.2

When located in a building, a pressure vessel must be installed to avoid, during reasonably foreseeable conditions, the likelihood of—

- (a) leakage from the vessel which could cause damage to the building; and
- (b) rupture or other mechanical damage of the vessel which could cause damage to the building or injury to occupants.

PERFORMANCE REQUIREMENTS**GP4.1**

An external doorway from a building in an *alpine area* must be installed so that opening the door is not obstructed by snow or ice.

Application

GP4.1 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

GP4.2

A building in an *alpine area* containing external trafficable structures forming part of the means of egress must be constructed so that those structures remain, as far as practicable, useable under snow conditions.

Application

GP4.2 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

GP4.3

A building in an *alpine area* must be constructed so that snow or ice is not shed from the building onto the allotment, any adjoining allotment, road or public space in a location or manner that will—

- (a) obstruct a means of egress from any building to a road or *open space*; or
- (b) otherwise endanger people.

Application

GP4.3 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

GP4.4

A building in an *alpine area* must have a *fire safety system* installed to—

- (a) facilitate fire-fighting operations; and
- (b) alert occupants in the event of an emergency.

Application

GP4.4 applies to a building constructed in an *alpine area* and overrules other provisions of the BCA.

PERFORMANCE REQUIREMENTS

NSW GP5.1

Qld GP5.1

Tas GP5.1

GP5.1

A building that is constructed in a *designated bushfire prone area* must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the—

- (a) potential for ignition caused by burning embers, radiant heat or flame generated by a bushfire; and
- (b) intensity of the bushfire attack on the building.

Application

GP5.1 only applies to—

- (a) a Class 2 or 3 building; or
- (b) a Class 10a building or deck associated with a Class 2 or 3 building, located in a *designated bushfire prone area*.

SECTION J

ENERGY EFFICIENCY

NSW Section J

NT Section J

Qld Section J

PERFORMANCE REQUIREMENTS

JP1

A building, including its *services*, must have, to the degree necessary, features that facilitate the efficient use of energy appropriate to—

- (a) the function and use of the building and *services*; and
- (b) the internal environment; and
- (c) the geographic location of the building; and
- (d) the effects of nearby permanent features such as topography, structures and buildings; and
- (e) solar radiation being—
 - (i) utilised for heating; and
 - (ii) controlled to minimise energy for cooling; and
- (f) the sealing of the building *envelope* against air leakage; and
- (g) the utilisation of air movement to assist heating and cooling; and
- (h) the energy source of the *services*.

JP2 * * * * *

This clause has deliberately been left blank.

JP3

Heating such as for a *conditioned space* must, to the degree necessary, obtain energy from—

- (a) a source that has a greenhouse gas intensity that does not exceed 100 g CO₂-e/MJ of thermal energy load; or
- (b) an on-site *renewable energy* source; or
- (c) another process as reclaimed energy.

VOLUME TWO

PERFORMANCE REQUIREMENTS

PART 2.1 STRUCTURE

PERFORMANCE REQUIREMENTS

P2.1.1 Structural stability and resistance to actions

- (a) A building or structure, during construction and use, with appropriate degrees of reliability, must—
- (i) perform adequately under all reasonably expected design actions; and
 - (ii) withstand extreme or frequently repeated design actions; and
 - (iii) be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and
 - (iv) avoid causing damage to *other properties*,
- by resisting the actions to which it may reasonably be expected to be subjected.
- (b) The actions to be considered to satisfy (a) include but are not limited to—
- (i) permanent actions (dead loads); and
 - (ii) imposed actions (live loads arising from occupancy and use); and
 - (iii) wind action; and
 - (iv) earthquake action; and
 - (v) snow action; and
 - (vi) liquid pressure action; and
 - (vii) ground water action; and
 - (viii) rainwater action (including ponding action); and
 - (ix) earth pressure action; and
 - (x) differential movement; and
 - (xi) time dependent effects (including creep and shrinkage); and
 - (xii) thermal effects; and
 - (xiii) ground movement caused by—
 - (A) swelling, shrinkage or freezing of the subsoil; and
 - (B) landslide or subsidence; and
 - (C) siteworks associated with the building or structure; and
 - (xiv) *construction activity actions*; and
 - (xv) termite actions.

- (c) The structural resistance of materials and forms of construction must be determined using five percentile characteristic material properties with appropriate allowance for—
 - (i) known construction activities; and
 - (ii) type of material; and
 - (iii) characteristics of the site; and
 - (iv) the degree of accuracy inherent in the methods used to assess the structural behaviour; and
 - (v) action effects arising from the differential settlement of foundations, and from restrained dimensional changes due to temperature, moisture, shrinkage, creep and similar effects.
- (d) Glass installations that are at risk of being subjected to human impact must have glazing that—
 - (i) if broken on impact, will break in a way that is not likely to cause injury to people; and
 - (ii) resists a reasonably foreseeable human impact without breaking; and
 - (iii) is protected or marked in a way that will reduce the likelihood of human impact.

P2.1.2 Construction of buildings in flood hazard areas

QLD P2.1.2

SA P2.1.2

- (a) A building in a *flood hazard area* must be designed and constructed, to the degree necessary, to resist flotation, collapse or significant permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the *defined flood event*.
- (b) The actions and requirements to be considered to satisfy (a) include but are not limited to—
 - (i) flood actions; and
 - (ii) elevation requirements; and
 - (iii) foundation and footing requirements; and
 - (iv) requirements for enclosures below the *flood hazard level*; and
 - (v) requirements for structural connections; and
 - (vi) material requirements; and
 - (vii) requirements for utilities; and
 - (viii) requirements for occupant egress.

Limitation:

P2.1.2 only applies to a Class 1 building.

QLD P2.1.3

PERFORMANCE REQUIREMENTS**P2.2.1 Surface water**

- (a) *Surface water*, resulting from a storm having an *average recurrence interval* of 20 years and which is collected or concentrated by a building or *sitework*, must be disposed of in a way that avoids the likelihood of damage or nuisance to any *other property*.
- (b) *Surface water*, resulting from a storm having an *average recurrence interval* of 100 years must not enter the building.

Limitation:

P2.2.1(b) does not apply to a Class 10 building where in the particular case there is no necessity for compliance.

- (c) A drainage system for the disposal of *surface water* resulting from a storm having an *average recurrence interval* of—
 - (i) 20 years must—
 - (A) convey *surface water* to an appropriate *outfall*; and
 - (B) avoid *surface water* damaging the building; and
 - (ii) 100 years must avoid the entry of *surface water* into a building.

P2.2.2 Weatherproofing

A roof and *external wall* (including openings around *windows* and doors) must prevent the penetration of water that could cause—

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements.

Limitation:

P2.2.2(a) does not apply to a Class 10 building except where its construction contributes to the weatherproofing of the Class 1 building.

P2.2.3 Dampness*SA P2.2.3*

Moisture from the ground must be prevented from causing—

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements.

Limitation:

P2.2.3 does not apply to a Class 10 building where in the particular case there is no necessity for compliance.

P2.2.4 Drainage from swimming pools*NT P2.2.4*

A *swimming pool* must have adequate means of draining the pool in a manner which will not—

- (a) cause illness to people; or
- (b) affect *other property*.

Note:

The *Housing Provisions* do not contain any *Deemed-to-Satisfy Provisions* for this *Performance Requirement*.

PERFORMANCE REQUIREMENTS

P2.3.1 Protection from the spread of fire

(a) A Class 1 building must be protected from the spread of fire from—

(i) another building other than an associated Class 10 building; and

SA P2.3.1 (a)(ii) and (iii)

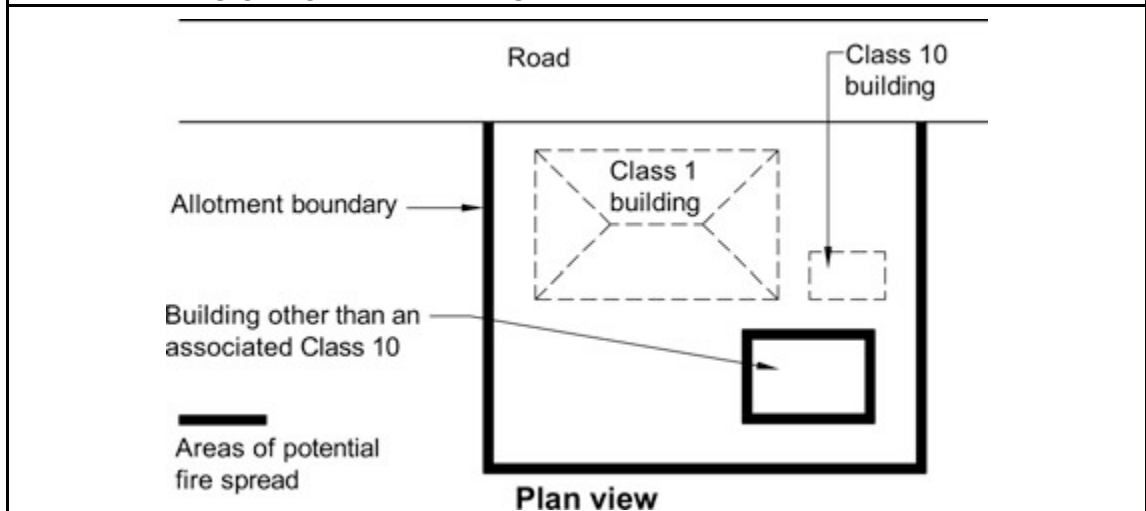
(ii) the allotment boundary, other than a boundary adjoining a road or public space.

(see [Figure 2.3.1](#))

(b) A Class 10a building must not significantly increase the risk of fire spread between Class 2 to 9 buildings.

Figure 2.3.1

TYPICAL AREAS OF POTENTIAL FIRE SPREAD



Note: This diagram indicates areas of potential fire spread. This situation will differ for corner allotments etc.

P2.3.2 Fire detection and early warning

In a Class 1 building, occupants must be provided with *automatic* warning on the detection of smoke so that they may evacuate in the event of a fire to a place of safety.

P2.3.3 Heating appliances

A heating appliance and its associated components within a building, including an open fire-place, chimney, or the like, must be installed—

- (a) to withstand the temperatures likely to be generated by the appliance; and
- (b) so that it does not raise the temperature of any building element to a level that would adversely affect the element's physical or mechanical properties or function; and

Tas P2.3.3(c)

- (c) so that hot products of combustion will not—
 - (i) escape through the walls of the associated components; and
 - (ii) discharge in a position that will cause fire to spread to nearby *combustible* materials or allow smoke to penetrate through nearby *windows*, ventilation inlets, or the like in the building containing the heating appliance.

P2.3.4 Bushfire areas

Tas P2.3.4

A Class 1 building or a Class 10a building or deck associated with a Class 1 building that is constructed in a *designated bushfire prone area* must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the—

- (a) potential for ignition caused by burning embers, radiant heat or flame generated by a bushfire; and
- (b) intensity of the bushfire attack on the building.

P2.3.5 Private bushfire shelters

A *private bushfire shelter* must be designed and constructed to provide a tenable environment for occupants during the passage of untenable conditions arising from a bushfire event, appropriate to the—

- (a) location of the *private bushfire shelter* relative to fire hazards including—
 - (i) predominant vegetation; and
 - (ii) adjacent buildings and structures; and
 - (iii) allotment boundaries; and
 - (iv) other combustible materials; and
- (b) occupancy of the *private bushfire shelter*; and
- (c) bushfire intensity having regard for the bushfire attack level; and
- (d) fire intensity from adjacent buildings and structures, allotment boundaries and other combustible materials; and
- (e) ready access to the *private bushfire shelter* from the associated dwelling and occupant egress after the fire; and
- (f) tenability within the *private bushfire shelter* for the estimated maximum period of occupancy; and
- (g) generation of smoke, heat and toxic gases from materials used to construct the *private bushfire shelter*; and

-
- (h) structural and fire loads and actions to which it may reasonably be subjected, appropriate to—
- (i) the topography between the *private bushfire shelter* and the predominant vegetation or other fire hazards; and
 - (ii) the distance between the *private bushfire shelter* and the predominant vegetation or other fire hazards; and
 - (iii) the size of the potential fire source and fire intensity; and
 - (iv) wind loading; and
 - (v) potential impact from debris such as falling tree limbs; and
- (i) degree of external signage identifying the location of the *private bushfire shelter*; and
- (j) degree of internal signage identifying the design capacity and maximum period of occupancy; and
- (k) degree of occupant awareness of outside environmental conditions; and
- (l) degree of essential maintenance.

Application:

P2.3.5 only applies to a Class 10c building.

Note:

The *Housing Provisions* do not contain any *Deemed-to-Satisfy Provisions* for this *Performance Requirement*, however the ABCB Performance Standard for Private Bushfire Shelters Part 1, contains guidance for this *Performance Requirement*.

P2.3.6 Alpine areas

- (a) An external doorway from a building in an *alpine area* must be installed so that opening the door is not obstructed by snow or ice.
- (b) A building in an *alpine area* containing external trafficable structures forming part of the means of egress must be constructed so that they remain, as far as practicable, useable under snow conditions.
- (c) A building in an *alpine area* must be constructed so that snow or ice is not shed from the building onto the allotment, any adjoining allotment, road or public space in a location or manner that will—
- (i) obstruct a means of egress from any building to a road or open space; or
 - (ii) otherwise endanger people.

PERFORMANCE REQUIREMENTS**P2.4.1 Wet areas**

To protect the structure of the building and to maintain the amenity of the occupants, water must be prevented from penetrating—

- (a) behind fittings and linings; or
- (b) into concealed spaces,

of sanitary facilities, bathrooms, laundries and the like.

P2.4.2 Room heights

A room or space must be of a height that does not unduly interfere with its intended function.

P2.4.3 Facilities

- (a) Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or associated with a building, appropriate to its function or use.

- (b) * * * * *

This clause has been deliberately left blank.

- (c) Laundering facilities or space for laundering facilities and the means for sanitary disposal of waste water must be provided in a convenient location within or associated with a building, appropriate to its function or use.
- (d) A food preparation facility must be provided which includes—
 - (i) a means for food rinsing, utensil washing and the sanitary disposal of associated waste water; and
 - (ii) a means for cooking food; and
 - (iii) a space for food preparation.
- (e) A *sanitary compartment* must be constructed with sufficient space or other means to enable an unconscious occupant to be removed from the compartment.

Application:

P2.4.3 only applies to a Class 1 building.

Explanatory information:

For the purposes of **P2.4.3(c)**, waste water includes water that is soiled as a result of clothes washing, mopping floors and other domestic cleaning processes.

P2.4.4 Light

- (a) A *habitable room* must be provided with *windows* so that natural light, when available, provides a level of *illuminance* appropriate to the function or use of that part of the building.
- (b) Artificial lighting must be installed to provide a level of *illuminance* appropriate to the function or use of the building to enable safe movement by occupants.

Application:

P2.4.4(b) only applies—

- (a) to *sanitary compartments*, bathrooms, shower rooms, airlocks, laundries and the like; and
- (b) if natural lighting of a suitable standard is not available.

P2.4.5 Ventilation

- (a) A space within a building used by occupants must be provided with means of ventilation with *outdoor air* which will maintain adequate air quality.
- (b) A mechanical air-handling system installed in a building must control—
 - (i) the circulation of objectionable odours; and
 - (ii) the accumulation of harmful contamination by micro-organisms, pathogens and toxins.
- (c) Contaminated air must be disposed of in a manner which does not unduly create a nuisance or hazard to people in the building or *other property*.

P2.4.6 Sound insulation

NT P2.4.6

- (a) Walls separating dwellings must provide insulation against the transmission of airborne sound sufficient to prevent illness or loss of amenity to the occupants.
- (b) Walls separating a bathroom, *sanitary compartment*, laundry or kitchen in a dwelling from a *habitable room* (other than a kitchen) in an adjoining dwelling, must provide insulation against impact generated sound sufficient to prevent illness or loss of amenity to the occupants.
- (c) The *required* sound insulation of walls must not be compromised by the incorporation or penetration of a pipe or other service element.

PERFORMANCE REQUIREMENTS**P2.5.1 Stairways and ramps**

So that people can move safely to and within a building—

- (a) walking surfaces must have safe gradients; and
- (b) any stairway or ramp must—
 - (i) have suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
 - (ii) have suitable landings to avoid undue fatigue of users; and
 - (iii) be suitable for safe passage in relation to the nature, volume and frequency of likely usage; and
 - (iv) have slip-resistant walking surfaces on ramps, and on stairway treads or near the edge of the nosing.

P2.5.2 Barriers

Where people could fall—

- (a) 1 m or more—
 - (i) from a floor or roof or through an opening (other than through an openable window) in the *external wall*; or
 - (ii) due to a sudden change of level within or associated with a building; or
- (b) 2 m or more from a floor through an openable window in a bedroom; or
- (c) 4 m or more from a floor through an openable window not covered by (b), a barrier must be provided which must be—
 - (d) continuous and extend for the full extent of the hazard; and
 - (e) of a height to protect people from accidentally falling from the floor or roof or through the opening or openable window; and
 - (f) constructed to prevent people from falling through the barrier; and
 - (g) capable of restricting the passage of children; and
 - (h) of strength and rigidity to withstand—
 - (i) the foreseeable impact of people; and
 - (ii) where appropriate, the static pressure of people pressing against it.

P2.5.3 Swimming pool access

NSW P2.5.3

NT P2.5.3

QLD P2.5.3

WA P2.5.3

A barrier must be provided to a *swimming pool* and must—

- (a) be continuous for the full extent of the hazard; and
- (b) be of a strength and rigidity to withstand the foreseeable impact of people; and
- (c) restrict the access of young children to the pool and the immediate pool surrounds; and
- (d) have any gates and doors fitted with latching devices not readily operated by young children, and constructed to automatically close and latch.

Application:

P2.5.3 only applies to a *swimming pool* with a depth of water more than 300 mm.

P2.5.4 Swimming pool water recirculation systems

A *swimming pool* water recirculation system must incorporate safety measures to avoid entrapment of, or injury to, a person.

Application:

P2.5.4 only applies to a *swimming pool* with a depth of water more than 300 mm.

PART 2.6 ENERGY EFFICIENCY

NSW Part 2.6

NT Part 2.6

PERFORMANCE REQUIREMENTS

P2.6.1 Building

Vic P2.6.1

A building must have, to the degree necessary, a level of thermal performance to facilitate the efficient use of energy for artificial heating and cooling appropriate to—

- (a) the function and use of the building; and
- (b) the internal environment; and
- (c) the geographic location of the building; and
- (d) the effects of nearby permanent features such as topography, structures and buildings; and
- (e) solar radiation being—
 - (i) utilised for heating; and
 - (ii) controlled to minimise energy for cooling; and
- (f) the sealing of the building *envelope* against air leakage; and
- (g) the utilisation of air movement to assist cooling.

Explanatory information:

The term “facilitate” is used in **P2.6.1** to highlight the need to consider the installation of energy efficiency measures in a building where there is a likelihood that an artificial heating or cooling system will be installed in the building irrespective of the initial design.

In **P2.6.1(d)** the term “permanent” is used to describe features that will have a long term impact on the building and includes natural features of the landscape, such as mountains and escarpments, while permanent man made features would be buildings likely to be in place for a long period of time.

P2.6.2 Services

Vic P2.6.2

Domestic services, including any associated distribution system and components must, to the degree necessary—

- (a) have features that facilitate the efficient use of energy appropriate to—
 - (i) the *domestic service* and its usage; and
 - (ii) the geographic location of the building; and

- (iii) the location of the *domestic service*; and
 - (iv) the energy source; and
- (b) obtain heating energy from—
- (i) a source that has a greenhouse gas intensity that does not exceed 100 g CO₂-e/MJ of thermal energy load; or
 - (ii) an on-site *renewable energy* source; or
 - (iii) another process as reclaimed energy.

Explanatory information:

1. For **(a)(iv)** the energy source can be a consideration if, for example, *renewable energy* such as electricity from a photovoltaic panel or a wind turbine was used to meet or supplement the lighting or cooling electricity load. For **(b)(ii)** similar sources could meet or supplement the heating load.
2. The intent of **P2.6.2(b)** is to constrain the use of a high greenhouse gas intensity source of energy. It does not prevent the use of electricity because the greenhouse gas intensity is related to the thermal load rather than the energy consumption which is covered by **P2.6.2(a)**. **P2.6.2** also contains the qualification that it is to be applied "to the degree necessary", allowing electricity to be used, even by low efficiency plant when there are no reasonable alternatives.
3. For the purposes of **P2.6.2** the *renewable energy* source must be on-site (so not Greenpower) and includes, but is not limited to, solar, wind, hydroelectric, wave action and geothermal.

VOLUME THREE

PERFORMANCE REQUIREMENTS

PART B1 COLD WATER SERVICES

Tas B1.0

PERFORMANCE REQUIREMENTS

BP1.1 Cold water service

Installations intended to supply cold water for human consumption, food preparation, food utensil washing or personal hygiene must be connected to a *drinking water* supply.

BP1.2 Cold water service installation

A cold water service must be designed, constructed and installed in such a manner as to—

- (a) avoid the likelihood of contamination of *drinking water* within both the water service and the *Network Utility Operator's* supply; and
- (b) provide water to fixtures and appliances at flow rates and pressures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise; and
- (c) avoid the likelihood of leakage or failure including uncontrolled discharges; and
- (d) facilitate the efficient use of *drinking water*; and
- (e) allow *adequate* access for maintenance of mechanical components and operational controls; and
- (f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where *required*.

Explanatory information: Unintentional heating of cold water services

Where installed in locations subjected to extreme summer temperatures (such as the roof space of a building), cold water services have the potential to become unintentionally heated. This can pose a hazard as the cold water supply may reach temperatures in excess of 45° Celsius, increasing the potential for scalding.

To reduce the likelihood of unintentional heating of cold water services, the following installation practices should be considered:

- (a) avoid long runs of pipework in locations exposed to solar heat gain; or
- (b) apply insulation, either directly to the pipework, or by using additional ceiling insulation material between the pipework and the solar heat source.

Avoidance of unintentional heating of cold water services in known areas of extreme summer temperatures may also assist in reducing water usage through drawing off of water which has become excessively heated.

BP1.3 People with a disability

Facilities provided for people with a disability must have cold water supply taps or other operational controls that are *accessible* and *adequate* for their use.

BP1.4 Materials and products

Materials and *products* used in cold water services must meet the requirements of **Part A2**.

PERFORMANCE REQUIREMENTS**BP2.1 Heated water service water supply**

Installations intended to supply *heated water* for human consumption, food preparation, food utensil washing or personal hygiene must be connected to a *drinking water* supply.

BP2.2 Heated water temperatures

Heated water supplied by a new *heated water* service must be delivered to fixtures and appliances used primarily for personal hygiene at a temperature which reduces the likelihood of scalding.

BP2.3 Heated water service installation

A *heated water* service must be designed, constructed and installed in such a manner as to—

- (a) avoid the likelihood of contamination of *drinking water* within both the on-site installation and the supply; and
- (b) provide *heated water* to fixtures and appliances at flow rates and temperatures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise; and
- (c) avoid the likelihood of leakage or failure, including uncontrolled discharges; and
- (d) * * * * *
- (e) allow *adequate* access for maintenance of mechanical components and operational controls; and
- (f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where *required*.

BP2.4 Pressure Vessels

Pressure vessels used for producing and/or storing *heated water* must be provided with safety devices which—

- (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.

BP2.5 Heated water storage

Heated water must be stored and delivered under conditions which avoid the likelihood of the growth of Legionella bacteria.

BP2.6 People with a disability

Where *heated water* is supplied in facilities provided for people with a disability, supply taps or other operational controls must be *accessible* and *adequate* for their use.

BP2.7 Materials and Products

Materials and *products* used in *heated water* services must meet the requirements of **Part A2**.

Qld BP2.8

BP2.8 Heated water service energy and water efficiency

A *heated water* service, including any associated distribution system and components must, to the degree necessary—

Vic BP2.8(a)

- (a) have features that facilitate the efficient use of energy appropriate to—
 - (i) the *heated water* service and its usage; and
 - (ii) the geographic location of the building; and
 - (iii) the location of the *heated water* service; and
 - (iv) the energy source; and

Explanatory information:

BP2.8(a) permits the energy source of the *heated water* service to be considered. This means that the net energy obtained from *renewable energy* sources such as solar, geothermal, wind, and biofuels may be considered as 'free' energy in calculating the energy consumption. Similarly, heat reclaimed from another 'free' source such as a by-product from co-generation type processes as well other industrial processes, which could otherwise be rejected from the building, could be considered as 'free' energy in calculating the energy consumption.

NSW BP2.8(b)

NT BP2.8(b)

Vic BP2.8(b)

- (b) obtain heating energy from—
 - (i) a source that has a greenhouse gas intensity that does not exceed 100 g CO₂ –e/MJ of thermal energy load; or
 - (ii) an on-site *renewable energy* source; or
 - (iii) another process as reclaimed energy; and

Application:

BP2.8(b) only applies to a *heated water* service in new Class 1 and Class 10 buildings.

Explanatory information:

1. The intent of **BP2.8(b)** is to constrain the use of a high greenhouse gas intensity source of energy. It does not prevent the use of electricity because the greenhouse gas intensity is related to the thermal load rather than the energy consumption which is covered by **BP2.8(a)**. **BP2.8(b)** also contains the qualification that it is to be applied 'to the degree necessary' allowing electricity to be used, even by low efficiency plant, where there are no reasonable alternatives.
2. For the purposes of **BP2.8(b)** the *renewable energy* must be on-site (not GreenPower) and includes, but is not limited to, solar, wind, hydroelectric, wave action, and geothermal.

- (c) have features that facilitate the efficient use of water.

Explanatory information:

Excessive 'dead water' draw-off, i.e. where cooled water from the supply pipe is drained off prior to delivery of *heated water*, can result in water and energy wastage.

To improve the efficiency of *heated water* systems, the design should consider factors such as the number of outlets, their purpose and expected typical usage, and the distance between the water heater and each of the outlets. The *heated water* unit should be positioned nearest to the most used outlets, or installed to provide consistent coverage of the building. Where this is not viable, the use of an additional unit or flow and return pipe loop may need to be considered.

SA BP2.801

PART B3

NON-DRINKING WATER SERVICES

PERFORMANCE REQUIREMENTS

BP3.1 Non-drinking water service

- (a) A *non-drinking water* supply must only be connected to outlets clearly identified for non-drinking use and must be limited to the uses specified in **B3.3**.
- (b) A *non-drinking water* service is not to have a cross connection with a *drinking water* service.

BP3.2 Identification

Pipe outlets, fittings, storage and holding tanks that form part of a *non-drinking water* service must be clearly identified.

BP3.3 Non-drinking water service installations

A *non-drinking water* service must be designed, constructed and installed in such a manner as to—

- (a) avoid the likelihood of contamination of *drinking water*; and
- (b) provide *non-drinking water* to fixtures and appliances at flow rates and pressures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and, in a manner that does not create undue noise; and
- (c) avoid the likelihood of leakage or failure including uncontrolled discharges; and
- (d) allow *adequate* access for maintenance of mechanical components and operational controls; and
- (e) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance.

BP3.4 People with a disability

Non-drinking water services provided for people with a disability must have taps or other operational controls that are *accessible*, convenient and *adequate* for their use.

BP3.5 Materials and Products

Materials and *products* used in a *non-drinking water* service must meet the requirements of **Part A2**.

PART B4

FIRE-FIGHTING WATER SERVICES

NSW B4

NT B4

QLD B4

PERFORMANCE REQUIREMENTS

BP4.1 Fire-fighting water service

A fire-fighting water service must be designed, constructed and installed in a manner which—

- (a) avoids the likelihood of contamination of *drinking water*; and
- (b) provides water to the fire-fighting equipment at a flow rate and pressure that is *adequate* for the correct functioning of the equipment; and
- (c) avoids the likelihood of leakage or failure including uncontrolled discharges; and
- (d) provides *adequate* access for maintenance of mechanical components and operational controls; and
- (e) allows the system and backflow prevention devices to be isolated for testing and maintenance.

BP4.2 Materials and Products

Materials and *products* used in fire-fighting water services must meet the requirements of **Part A2**.

PERFORMANCE REQUIREMENTS**CP1.1 Sanitary plumbing systems**

A sanitary *plumbing* system must be designed, constructed and installed in such a manner as to—

- (a) convey sewage or sullage to a sanitary *drainage* system or an *approved disposal system* and in a manner that does not create undue noise; and
- (b) avoid the likelihood of *loss of amenity* due to *blockage* and leakage; and
- (c) avoid the likelihood of the ingress of inappropriate water, sewage, sullage, foul air and gases from the system into the building; and
- (d) provide *adequate* access for maintenance of mechanical components, operational controls and for clearing *blockages*; and
- (e) avoid the likelihood of damage from superimposed loads, ground movement or root penetration; and
- (f) avoid the likelihood of ingress of surface water, subsurface water or stormwater into the system; and
- (g) provide for the effective and efficient use of water; and
- (h) provide *adequate* ventilation to avoid hydraulic load imbalance.

Explanatory information: Non-flushing (waterless) urinals

Where a non-flushing (waterless) urinal is to be installed to a sanitary *plumbing* system comprising copper, copper alloy or other metallic piping, undiluted discharge transported through such pipework may increase the likelihood of corrosion.

Practitioners should also be aware that undiluted discharge, transported through pipework of any material, can cause build-up of Struvite (ammonium magnesium phosphate) inside pipework, potentially causing *blockage* within the sanitary *plumbing* system.

CP1.2 People with a disability

Facilities provided for people with a disability must have sanitary fixtures that are *accessible* and *adequate* for their use.

CP1.3 Materials and Products

Materials and *products* used in sanitary *plumbing* systems must meet the requirements of **Part A2**.

PERFORMANCE REQUIREMENTS**CP2.1 Sanitary drainage system**

A sanitary *drainage* system must be designed constructed and installed in such a manner as to—

- (a) convey sewage from a sanitary *plumbing* system to an *approved disposal system* and in a manner that does not create undue noise;
- (b) avoid the likelihood of *blockage* and leakage; and
- (c) avoid the likelihood of root penetration; and
- (d) provide *adequate* access for maintenance and for clearing *blockages*; and
- (e) provide ventilation to avoid the likelihood of foul air and gases accumulating in the sanitary *drainage* and sewerage systems; and
- (f) avoid the likelihood of damage from superimposed loads or ground movement; and
- (g) avoid the likelihood of ingress of water, foul air and gases from the system into buildings; and
- (h) protect against internal contamination; and
- (i) avoid the likelihood of ingress of surface water, sub-surface water and stormwater into the sewerage system; and
- (j) avoid the likelihood of uncontrolled discharge; and
- (k) avoid the likelihood of damage to existing buildings or site works; and
- (l) avoid the likelihood of damage to the sewerage system or other *approved disposal system*.

CP2.2 No point of connection

Vic CP2.2

Where a *point of connection* to a *Network Utility Operator's* sewerage system is not available, an *on-site wastewater management system* must be designed, installed and maintained in accordance with **Part F1**.

Tas CP2.201

CP2.3 Materials and Products

Materials and *products* used in sanitary *drainage* systems must meet the requirements of **Part A2**.

PART D1

ROOF DRAINAGE SYSTEMS

ACT D1

NSW D1

NT D1

Qld D1

SA D1

PERFORMANCE REQUIREMENTS

DP1.1 Roof drainage systems

Roof *drainage* systems must dispose of stormwater flows from rainfall events having an *average recurrence interval* appropriate to the importance of the building and the severity of potential damage to property, *loss of amenity*, illness or injury that would result from the failure of such a system.

DP1.2 Overflow devices or measures

The roof *drainage* system must be designed, installed and maintained to dispose of stormwater flows due to extreme rainfall events by the installation and maintenance of *overflow devices* or measures of *adequate* capacity.

DP1.3 Watertightness

All internal roof *drainage* components must be *watertight*.

DP1.4 Roof drainage installation

Roof *drainage* installations must be designed, constructed and installed in such a manner as to—

- (a) convey stormwater to a *point of connection*; and
- (b) avoid the likelihood of *loss of amenity* due to *blockages* and leakage; and
- (c) avoid the likelihood of foul air and gases accumulating in the roof *drainage* system; and
- (d) avoid the likelihood of *loss* to buildings and property; and
- (e) avoid the likelihood of uncontrolled discharges; and
- (f) provide *adequate* access for maintenance and clearing of *blockages*.

DP1.5 Materials and Products

Materials and *products* used in stormwater *drainage* systems must meet the requirements of **Part A2**.

PART D2

SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

ACT D2

NSW D2

NT D2

Qld D2

SA D2

PERFORMANCE REQUIREMENTS

DP2.1 Surface drainage systems

Surface *drainage* systems must dispose of stormwater flows from rainfall events having an *average recurrence interval* appropriate to the importance of the site and the severity of potential damage to property, *loss* of *amenity*, illness or injury that would result from the failure of such a system.

DP2.2 Subsurface drainage systems

Subsoil *drainage* systems must remove excess groundwater and reduce soil moisture levels without causing *loss* by inappropriately changing soil moisture conditions.

DP2.3 Surface drainage installation

Surface *drainage* installations must be designed, constructed and installed in such a manner as to—

- (a) convey stormwater to a *point of connection*; and
- (b) avoid the likelihood of *blockages*; and
- (c) avoid the likelihood of leakage and penetration by roots; and
- (d) provide *adequate* access for maintenance and clearing of *blockages*; and
- (e) avoid the likelihood of damage to the *Network Utility Operator's drainage* system; and
- (f) avoid the likelihood of damage from superimposed loads or ground movements; and
- (g) avoid the likelihood of ingress of sewage and/or liquid trade waste; and
- (h) avoid the likelihood of ingress of surface water and stormwater into a sanitary *drainage* system; and
- (i) avoid the likelihood of foul air and gases accumulating in the stormwater system; and
- (j) avoid the likelihood of *loss* to buildings or property; and
- (k) avoid the likelihood of uncontrolled discharge.

DP2.4 Materials and Products

Materials and *products* used in stormwater *drainage* systems must meet the requirements of **Part A2**.

PART E1

HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

ACT E1

NSW E1

NT E1

Qld E1

SA E1

PERFORMANCE REQUIREMENTS

EP1.1

Mechanical services, plant and equipment for heating, cooling and/or ventilation must be designed, constructed, installed and maintained in such a manner as to—

- (a) avoid the likelihood of harmful microbial growth; and
- (b) avoid the likelihood of damage to property and *loss of amenity* to the building occupants; and
- (c) be efficient in the use of energy and water; and
- (d) provide *adequate* access for maintenance.

EP1.2 Materials and Products

Materials and *products* used in mechanical heating, cooling and/or ventilation systems must meet the requirements of **Part A2**.

PART F1

ON-SITE WASTEWATER MANAGEMENT SYSTEMS

ACT F1

NSW F1

NT F1

Qld F1

PERFORMANCE REQUIREMENTS

FP1.1

On-site wastewater management systems must be designed, constructed, installed and maintained in such a manner as to—

- (a) protect public health by ensuring that—
 - (i) all discharges comply with the requirements of the authority having jurisdiction; and
 - (ii) risks associated with the discharge of treated wastewater and or the end product from a composting toilet to the environment are minimised; and
- (b) protect the environment by ensuring that—
 - (i) environmental quality objectives set by the authority having jurisdiction are attained; and
 - (ii) surface and ground water are not polluted; and
 - (iii) soil productivity is maintained or enhanced; and
 - (iv) adverse cumulative environmental effects comply with the relevant environmental requirements; and
- (c) minimise the impacts on and maintain and enhance community *amenity* by ensuring that—
 - (i) *on-site wastewater management systems* are managed so as to achieve sustainable long term performance; and
 - (ii) the *on-site wastewater management system* design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
 - (iii) the requirements of any community resource utilisation programme for the reuse of resources within wastewater are met; and
- (d) meet the requirements of the receiving *Network Utility Operator* for the acceptance of wastewater to sewers, as appropriate.

FP1.2

Wastewater must be discharged according to the requirements and agreement of the authority having jurisdiction.

FP1.3

Wastewater must be conveyed to an *on-site wastewater management system* in a way that—

- (a) transfers wastes safely and hygienically; and
- (b) avoids the likelihood of *blockage* and leakage; and
- (c) avoids the likelihood of foul air and gases entering buildings; and
- (d) provides *adequate* and safe access for maintenance and clearing *blockages*.

FP1.4

On-site wastewater management systems that facilitate on-site storage, treatment, disposal or re-use of wastewater must be designed, constructed and installed—

- (a) with *adequate* treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with *adequate* size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed; and
- (c) with *adequate* vehicle access for collection, if necessary; and
- (d) to avoid the likelihood of contamination of any *drinking water* supplies; and
- (e) to avoid the likelihood of contamination of soils, ground water and waterways; and
- (f) from materials which are impervious both to the waste for which disposal is *required* and to water; and
- (g) to avoid the likelihood of foul air and gases accumulating within or entering into buildings; and
- (h) to avoid the likelihood of unauthorised access by people; and
- (i) to permit cleaning, maintenance, measurement and performance sampling; and
- (j) to avoid the likelihood of surface water and stormwater entering the system; and
- (k) to avoid the likelihood of uncontrolled discharge; and
- (l) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and
- (m) so that the installation throughout its serviceable life will continue to satisfy the requirements of items **(a)** to **(l)**.

FP1.5 Land application systems

On-site wastewater management systems and associated land application systems must be designed, constructed, installed and maintained in such a manner as to—

- (a) complete the treatment, uptake and absorption of the final effluent within the boundaries of the approved application area; and

-
- (b) avoid the likelihood of the creation of unpleasant odours or the accumulation of offensive matter; and
 - (c) avoid the likelihood of the ingress of effluent, foul air or gases entering buildings; and
 - (d) avoid the likelihood of stormwater run-off entering the system; and
 - (e) avoid the likelihood of root penetration or ingress of ground water entering the system; and
 - (f) protect against internal contamination; and
 - (g) provide *adequate* access for maintenance; and
 - (h) incorporate *adequate* provisions for effective cleaning; and
 - (i) avoid the likelihood of unintended or uncontrolled discharge; and
 - (j) avoid the likelihood of *blockage* and leakage; and
 - (k) avoid the likelihood of damage from superimposed loads or ground movement; and
 - (l) provide ventilation to avoid the likelihood of foul air and gases from accumulating in the system; and
 - (m) so that the installation throughout its serviceable life will continue to satisfy the requirements of items **(a)** to **(l)**.

FP1.6 Materials and Products

- (a) Materials and *products* connected to an *on-site wastewater management system* must meet the requirements of **Part A2**.
- (b) On-site domestic wastewater treatment units must be authorised by the authority having jurisdiction.

PART F2

ON-SITE LIQUID TRADE WASTE SYSTEMS

ACT F2

NSW F2

NT F2

Qld F2

PERFORMANCE REQUIREMENTS

FP2.1

An on-site liquid trade waste system must be designed, constructed and installed in such a manner as to—

- (a) protect public health by ensuring that—
 - (i) all discharges comply with the relevant requirements of the authority having jurisdiction; and
 - (ii) risks associated with the discharge of treated liquid trade waste to the environment are minimised; and
- (b) protect the environment by ensuring that—
 - (i) environmental quality objectives set by the authority having jurisdiction are attained; and
 - (ii) surface and ground water are not polluted; and
 - (iii) soil productivity is maintained or enhanced; and
 - (iv) adverse cumulative environmental effects comply with the relevant environmental requirements; and
- (c) minimise the impacts on and maintain and enhance community *amenity* by ensuring that—
 - (i) on-site liquid trade waste systems are managed so as to achieve sustainable long term performance; and
 - (ii) the on-site system design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
 - (iii) the requirements of any community resource utilisation programme for the reuse of resources within wastewater are met; and
- (d) meet the requirements of the receiving *Network Utility Operator* for the acceptance of liquid trade waste to sewers, as appropriate.

FP2.2

Liquid trade waste must be discharged according to the requirements and agreement of the authority having jurisdiction and the receiving *Network Utility Operator*.

FP2.3

Liquid trade waste must be conveyed to storage containers and within disposal systems in a way that—

- (a) transfers wastes safely and hygienically; and
- (b) avoids the likelihood of *blockage* and leakage; and
- (c) avoids the likelihood of foul air and gases entering buildings; and
- (d) provides *adequate* and safe access for clearing *blockages*.

FP2.4

Facilities for the storage, treatment and/or disposal of liquid trade waste must be designed, constructed and installed—

- (a) with *adequate* treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with *adequate* size, strength and rigidity for the nature, flow rates, volume of wastes, by-products and residues which must be processed; and
- (c) with *adequate* vehicle access for collection, if necessary; and
- (d) with *adequate* structural strength for where pedestrian or vehicular traffic is likely to be encountered; and
- (e) to avoid the likelihood of contamination of any *drinking water* supplies; and
- (f) to avoid the likelihood of contamination of soils, ground water and waterways; and
- (g) from materials which are impervious both to the waste for which disposal is *required* and to water; and
- (h) to avoid the likelihood of foul air and gases accumulating within or entering into buildings; and
- (i) to avoid the likelihood of unauthorised access by people; and
- (j) to permit cleaning, maintenance, measurement and performance sampling; and
- (k) to avoid the likelihood of surface water and stormwater entering the sewerage system except in cases where a contaminated stormwater discharge of limited volume is accepted by the *Network Utility Operator* as a trade waste; and
- (l) to avoid the likelihood of uncontrolled discharge; and
- (m) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and
- (n) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (m).

FP2.5

Materials and *products* used in liquid trade waste *drainage* installations must meet the requirements of **Part A2**.



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