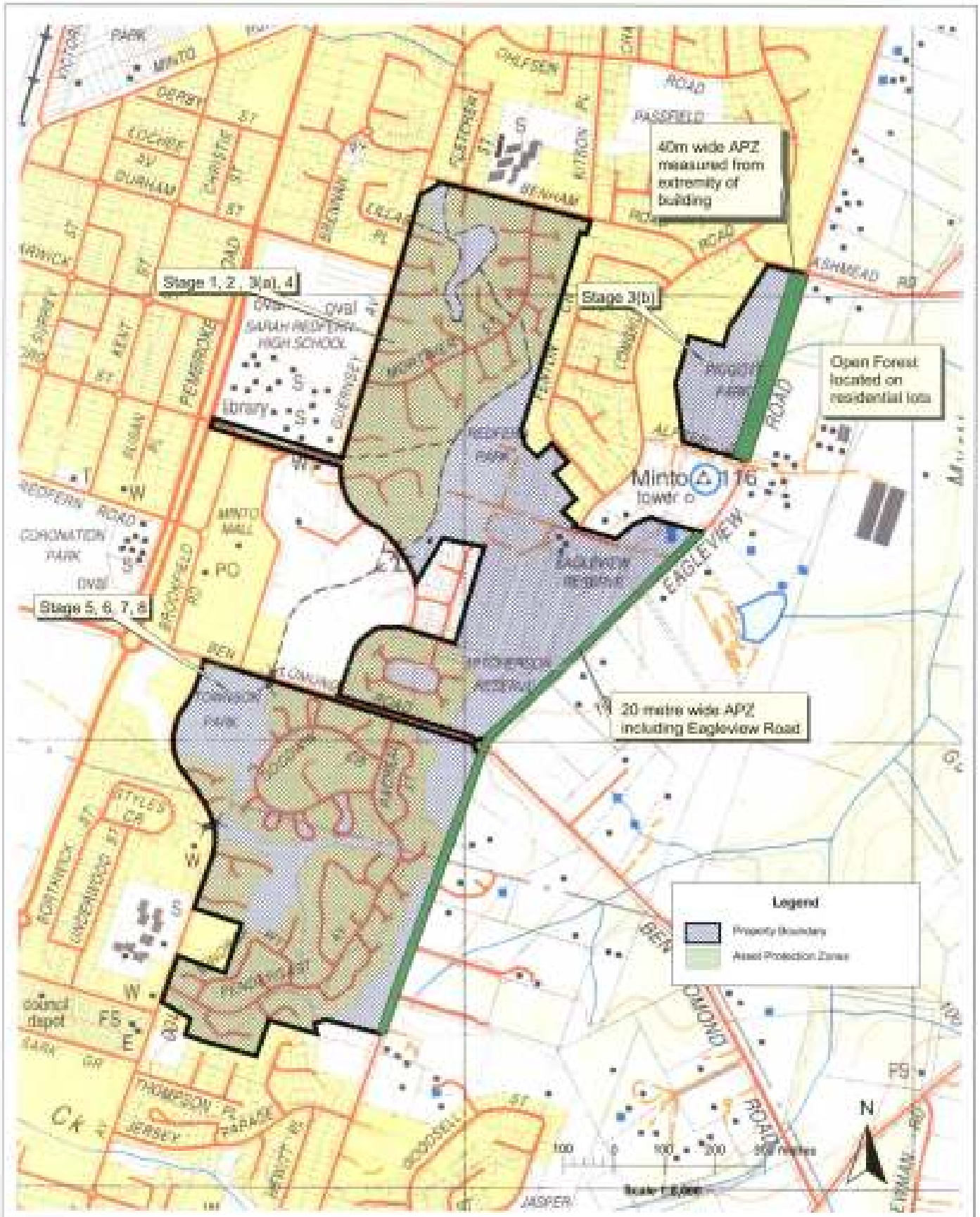
SCHEDULE 1

PLAN OF BUSHFIRE PROTECTION MEASURES



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Schedule 1 -
Bushfire Protection Measures - Minto Urban Renewal Project

APPENDIX 1

DETAILS OF ASSET (FIRE) PROTECTION ZONES

1.0 INTRODUCTION

The major mitigating factor that limits the effects of wildfire is the amount of fuel available to burn. By reducing the amount of fuel there will be a reduction in the intensity of the fire.

The area in which the fuel reduction occurs is referred to as an Asset Protection Zone. Asset Protection Zones are areas that are usually shown on 'plans' adjacent to either cultural or natural assets (eg. dwelling, rainforest). They act to significantly lessen the impact of intense fire. The Asset Protection Zone can be further identified by two sub-zones.

Each has a specific role to play within an asset protection zone. These sub-zone areas are called the Inner Protection Area (Fuel Free Zone) and the Outer Protection Area (Fuel Reduced Zone). The sub-zones characterise the physical appearance of the landscape and in particular the way the combustible fuels shall appear after they are modified. (See Photos 1 - 6).

The Inner Protection Area is always located immediately adjacent to the asset/value at risk. The Outer Protection Area is located between the Inner Protection Area and the bushland.

When considering bush fire fuel it is important to understand that it occurs in our native bushland in three vertical layers – see Table 1.

Table 1 – Fuel Layers

Fuel Layer Name	Location of Layer in vertical Column	Type of Fuel
Ground Fuels	Below ground level	Peatmoss (always below the surface)
Surface Fuels	0-200 mm	Litter layer (leaves & twigs)
Aerial Fuels	200 – 3000 mm	Shrubs and grasses
Canopy Fuels	> 3000 mm	Tree canopy

2.0 INNER PROTECTION AREA (I.P.A)

This area is *almost free* of all fuels, it usually takes the form of grassy areas, car parks, roads, concrete areas, track or trails. It does not imply the wholesale removal of all or every tree - see Table 2 for guidelines on the extent of trees that can occur within this zone.

Rationale: By its very nature this zone is intended to stop the transmission of flame and reduce the transmission of radiated heat by the elimination of available fuel. Thus its Inner Protection Area name. This area also allows airborne embers to fall safely thus stopping further outbreaks of fire to begin.

Fire Fighting Advantage: This zone allows safe fire fighting operations to occur and clear fire control lines to be implemented by fire fighters.

Measurability: A fuel free Inner Protection Area is measured in two ways. The weight of the fuel and the width of the zone. Practitioners measure fuel load in *tonnes per hectare*. It is assessed by measuring the weight of fuel in a small quadrat eg. 300mm by 300mm and equating that to a hectare. The width of the zone is the separating distance between an asset and the bushland.

Performance Standard: A safe load is between 0-3 t/Ha.

Photographic Montage Depicting Inner Protection Area

PHOTO – 1

Site Description: The site is a paved roadway. It separates two areas of bushland and is normally called in this instance a fire break.

Fire Behaviour: No fire could occur on this fire break but the narrow nature of the break would allow fire to pass between the two bushland areas without difficulty.

Maintenance: None required due to paved surface. Do not allow shrubs to grow.

Fuel Weight: Zero

PHOTO – 2

Site Description: The site is mineral earth. There is no fuel on this narrow strip. The narrow strip forms a narrow fire break between two areas of unmanaged bushland.

Fire Behaviour: No fire could occur on this mineral earth but the narrow nature of the fire break would allow fire to pass between the two bushland areas without difficulty.

Maintenance: Regular raking and removal of litter layer. Do not allow shrubs to grow.

Fuel Weight: Zero

PHOTO – 3

Site Description: This is a grassed fire trail on level land adjacent to unmanaged bushland. The grass height on the level lands is 20-50 mm.

Fire Behaviour: This area, if mowed regularly, would exhibit flame heights not above 300 mm (12 inches). Note: The grass in the bushland zone is approx' 400-500mm in height and would achieve flame heights approximate to 750 –1200mm (depending on fuel loadings and Fire Danger Index).

Maintenance: This fuel free zone is able to be managed by normal mowing means. Raking and removal of litter layer; and/or mowing of grasses; and raking and/or mowing. Fuel Weight in photo 4: < 2 T/Ha.

Fuel Weight: < 2 T/Ha.

PHOTO – 4

Site Description: This is a grassed Inner Protection Area with scattered trees, no shrub larger and minimal understorey. The grass height is maintained to provide < 3 tonnes per hectare.

Fire Behaviour: This area, if maintained regularly, would exhibit flame height not above 300mm.

Maintenance: This Inner Protection Area is managed by mowing, raking and removal of the litter layer.

Fuel Weight: < 3 tonnes/hectare.

Photographic Montage Depicting Inner Protection Area

PHOTO – 5

Site Description: The site is a grassed Inner Protection Area with large smooth barked tree 5 metres clear of the dwelling.
The grass height is maintained to provide < 3 tonnes per hectare.

Fire Behaviour: This area, if maintained regularly, would exhibit flame height not above 300mm.

Maintenance: This Inner Protection Area is managed by mowing, raking and removal of the litter layer.

Fuel Weight: < 3 tonnes/hectare

PHOTO – 6

Site Description: This site shows a grassed Inner Protection Area with rock and landscaped areas constituting approximately 15% of the Inner Protection Area. Tree more than 5 metres from dwelling with no canopy connection to adjoining trees.

Fire Behaviour: This area, if maintained regularly, would exhibit flame height not above 300mm.

Maintenance: This Inner Protection Area is managed by mowing, raking and removal of the litter layer.

Fuel Weight: < 3 tonnes/hectare to grass areas landscaped areas 3-4 tonnes/hectare.

PHOTO – 7

Site Description: This site shows an Inner Protection Area which includes a paved Access/Fire Trail. Smooth barked trees < 5 metres from fire aspect of dwelling.
Fuel loading to trail zero with grassed areas displaying approximately 3 tonnes/hectare.

Fire Behaviour: Fires impacting the bushland to the left of the Access/Fire Trail would loose intensity with the provision of the Inner Protection Area.

Maintenance: This Inner Protection Area is managed by mowing, raking and removal of the litter layer.

Fuel Weight: Nil to Access/Fire Trail. 3 tonnes/hectare to grassed area.

Presence of Shrubs in an Inner Protection Area

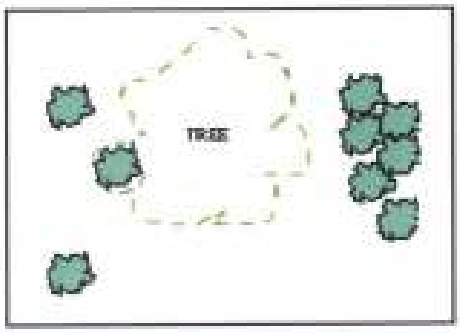
Shrubs may occur within an Inner Protection Area, but only where it is recommended by an experienced bush fire protection manager.

Thus landscaping works within the Inner Protection Area may occur in some instances. Where it is approved to occur, some 10-15 % and in some cases up to 30% of the Inner Protection Area may be able to be landscaped but always away from glass in buildings.

The design of the Inner Protection Area will be dependent on species selection and spatial arrangement.

Note: eg. 10 % means that for every 100 square metres (eg. 10 metres x 10 metres) only 10 % of that area may have a shrub component. The remainder would be free of shrubs see Figure 1. A 10 % landscaped shrub layer would add a further 1.5 tonnes of fuel to the overall hazard weight. To maintain the aggregate below 3 t/ha the ground fuels must be mown grass, or similar.

Figure 1 – Example of Spatial Arrangement in a Inner Protection Area



If a shrub layer is present the following table shows the additional fuel weights that should be added to the calculated surface fuels.

Shrub cover	Fuel Weight
10-30 %	2.5 tonnes / ha
35-50 %	5.0 tonnes / ha
55-75%	7.5 tonnes / ha

Presence of Trees within an Inner Protection Area

A tree may occur within an Inner Protection Area if the canopy does not form a link with shrubs. The reason is to lessen any chance for 'vegetation linking' and the capability for fire to extend into the canopy.

It is a basic premise in fire behaviour understanding that fire cannot occur in the canopy unless surface fuels such as grasses or shrubs are burning. This merging creates opportunity for fire to link with the canopy and therefore increase fire intensity by some significant amount.

Trees that have a canopy beginning near the ground (such as Forest Oaks *Allocasuarina*) form a continuous link with the tree canopy and shrubs. A forest canopy cannot therefore burn without fuel to feed that fire. In a 'tall open forest' where the trees are generally above 20 metres in height the canopy is separated from the land surface by some distance. In an 'open woodland' the low canopy height (usually < 5 metres) merges with the shrubland layer.

Knowing the relationship between the shrub layer and the tree canopy allows fire managers to design safer areas in the asset protection zones. It is for this reason that vegetation such as Forest Oaks are usually excluded from an Inner Protection Area.

Similarly in 'open forests' the height of the forest is sufficiently removed from the shrub layer. As a general rule trees are allowed within an Inner Protection Area where the density of those trees is commensurate with Table 2 below and located on slopes up to 20% with a Westerly aspect.

In respect of trees that can be located in a Inner Protection Area Table 2 provides guidelines.

Table 2 – Tree Density in Inner Protection Area

Distance from dwelling wall	Trees permitted on the exposed side of a dwelling	Trees permitted on the non exposed side of a dwelling
within 5 metres	No trees	No trees
between 5-10 metres	One tree per 100 m^2	2 trees per 100 m^2
Between 10-20 metres	<10 tree per 400 m^2.	<10 trees per 400 m^2

There are variations to Table 2.

- Trees vary in height and tree crown width /depth. Some trees have canopies that extend close to the ground (eg < 5 metres from the ground) whilst other trees have canopies that area high off the ground (> 15 metres off the ground). In some cases these tall trees do not have canopies that are affected by undergrowth / tall shrubs that could cause fire to burn into the canopy. Therefore if trees are isolated they do not form a significant risk.

- Similarly smooth barked trees are less of a hazard than heavily barked trees. The latter can cause fire to run up into the canopy and if there is sufficient wind the resulting fire can be of high intensity.

- Similar to the above, the number of trees per 100 m^2 depends on an individual assessment being undertaken to determine the 'type / size of tree', and its resultant potential impact upon a dwelling.

- The exposed side of a dwelling is the side that is directly affected by a moving fire particularly when fanned by wind. The non-exposed side of a dwelling is the side where fire is unlikely to come from either from a lack of wind, slope or other factors such as a lack of hazardous fuel.

3.0 OUTER PROTECTION AREA (O.P.A)

Rationale: This zone is designed to stop the development of 'intense' fires and the transmission of 'severe' radiated heat.

Physical Appearance: This area assumes all trees will remain but with a modified shrub / grass and litter layer. In some sparse vegetation communities the shrub layer may not require modification.

Fire Fighting Advantage: Reduced fire intensity. It achieves this by denying fire a significant proportion of the fuel to feed upon. Fuels containing small (or fine) leaves such as *Forest Oaks* (or similar) are targeted for removal due to the capacity to burn quickly and therefore feed fire up into adjacent trees.

Measurability: Practitioners measure fuel load in *tonnes per hectare*. It is assessed by way of measuring the load in a given small quadrat eg. 300mm by 300mm and equating that to a hectare.

Performance Standard: A safe load is between 4-6 T/Ha.

Note: An experienced / qualified bush fire protection practitioner should undertake an individual assessment of a site to determine the requirements within an Asset Protection Zone.

Photographic Montage Depicting Outer Protection Area

PHOTO – 1

Site Description: This area has a low tree and shrub density but a high presence of native grasses. Almost no litter layer present.

Fire Behaviour: The lack of shrubs means that fire behaviour will be less but the presence of the sloping lands and the heavy presence of grass means that fire can burn quickly up the slope with flame heights between 1200-1800mm.

Maintenance: Maintain the grass height. Shrubs can grow to what is pictured in Photo 1.

Fuel Weight: 2-3 T/Ha

PHOTO – 2

Site Description: This area has increased shrub density and the beginnings of those shrubs linking with the tree canopy. Litter layer is present, but less than 3 T/Ha. The shrub layer is approx' 3 T/Ha.

Fire Behaviour: The increase in shrubs means that fire behaviour will be high. Flame heights would be expected to be between 2000mm – 6000mm (depending on fuel loadings and Fire Danger Index).

Maintenance: Maintain the grass height and current density of shrubs.

Fuel Weight: 6 T/Ha.

PHOTO – 3

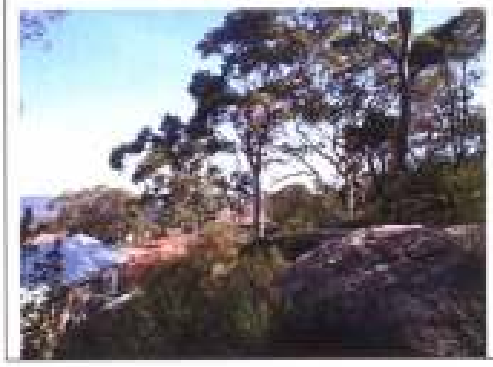
Site Description: This area has a low tree and shrub density but a high presence of native grasses.

Fire Behaviour: The heavy presence of native grass means that fire can burn quickly through the outer protection area with flame heights of between 1200-3m.

Maintenance: Remove and maintain grass layer/leaf litter by slashing/hand removal.

Fuel Weight: 6-8 tonnes/hectare

PHOTO – 4



Site Description: Outer Protection Area above dwelling showing large rock outcrops, low shrub and tree density.

Fire Behaviour: Fires impacting this area would burn down slope to the dwelling. Flame heights in the order of 1-2 metres.

Maintenance: Management of this area by slashing/hand removal/burning to maintain fuel loading to < 8 tonnes/hectare.

Fuel Weight: < 6 tonnes/hectare
Nil on rock ledges.

APPENDIX 2

SUMMARY OF AUSTRALIAN STANDARD AS3959 (1999 – AMENDED)

CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS

AUSTRALIAN STANDARD AS3959 (1999 – AMENDED)

CONSTRUCTION OF BUILDINGS IN BUSHFIRE-PRONE AREAS

Levels of Construction:

Three levels of construction are given which correspond to the category of bushfire attack determined for the site of the building:

Level 1 Construction – For the category of **medium** bushfire attack.

Level 2 Construction – For the category of **high** bushfire attack.

Level 3 Construction – For the category of **extreme** bushfire attack.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
FLOORING SYSTEMS	The requirements for a floor in a Level 1 construction shall be one, or a combination, of the following: (a) A concrete slab-on-the-ground. (b) A suspended floor, which may be one, or a combination of the following, supported by posts, columns, stumps, piers, or poles complying with Clause 3.4 or walls complying with Clause 3.5: (i) A concrete floor. (ii) A framed floor where the underside of any one bearer at any point is greater than 600mm above the finished ground level. (c) A suspended timber floor, framed with timber or metal, where the underside of any one bearer, at any point, is not greater than 600mm above the finished ground level and which has – (i) The subfloor space unenclosed and any timber flooring, bearers and joists of fire-retardant-treated timber; or (ii) The subfloor space fully enclosed, either by a wall that complies with Clause 3.5.1(a), or by the use of non-combustible sheet material which extends for at least 400mm above the finished ground level. Where non-combustible fibre- reinforced cement sheets are used to enclose the subfloor space, the material shall have a minimum thickness of 6mm and all material shall meet the bottom of the cladding material to ensure there are no gaps on the exterior face of the building.	**The requirements for a floor in a Level 2 construction shall be as for Level 1 construction (see Clause 3.3.1)** NOTE: The protection of subfloor openings against the entry of burning debris by way of introducing non-combustible material, such as fibre-reinforced cement sheeting to effectively enclose the subfloor space, may conflict with the requirements for termite protection and should therefore, take into consideration of the provisions of AS 3660.1.	**The requirements for a floor in a Level 3 construction shall be as for Level 2 construction (see Clause 3.3.2)** Except that in the case of a framed floor, where any bearer or joist is greater than 600mm above finished ground level and the floor is not enclosed as described in Clause 3.3.1 (c)(ii), the bearer, joists and flooring shall be of fire-retardant-treated timber or sheeted underneath with non-combustible material.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
SUPPORTING POSTS, COLUMNS, STUMPS, PIERS AND POLES	The requirements for supporting posts, columns, stumps, piers and poles in a Level 1 construction shall be one, or a combination, of the following: (a) Non-combustible. (b) Fire-retardant-treated timber for a minimum of 400 mm above the finished ground level. (c) Timber mounted on galvanized metal shoes with a clearance of not less than 75 mm above the adjacent finished ground level or paving level (see Figure 3.2). The above do not apply where the subfloor space is totally enclosed as described in Clause 3.3.1(c) (ii).	The requirements for supporting posts, columns, stumps, piers and poles in a Level 2 construction shall be as for Level 1 construction (see Clause 3.4.1)	Except in enclosed subfloor spaces, the requirements for supporting posts, columns, stumps, piers and poles in a Level 3 construction shall be as for Level 2 construction (see Clause 3.4.2) except that all timber shall be fire-retardant-treated to full height.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
EXTERNAL WALLS	The requirements for external walls in a Level 1 construction shall be as follows: (a) External walls shall be one, or a combination, of the following: i) A wall having an external leaf of masonry, concrete, pise, rammed earth or stabilized earth. ii) A framed wall that incorporates either – A) breather-type sarking complying with AS.NZS 4200.1 and with a flammability index of not more than 5 (see AS 1530.2) installed immediately behind the external cladding; or B) an insulation material conforming to the appropriate Australian Standard for that material. NOTE: No restrictions apply to the cladding material. (iii) A wall of timber logs that have the butting faces of adjacent logs, gauge-planed, and the space between the logs sealed in a manner that prevents the entry of burning debris and which allows for building movement. (b) Where the external leaf or cladding is of a combustible sheet material and is less than 400 mm above finished ground level, the cladding shall be protected for not less than 400 mm above the adjacent finished ground level (see Figure 3.3) (i) by covering it with a suitable non-combustible material, or fire-retardant-treated timber suitably sealed to the existing cladding so as to prevent the entry of burning debris (see Figures 3.3 (a) and 3.3(b)); (ii) by substituting with a suitable non-combustible sheet material, or fire-retardant-treated timber (see Figure 3.3 (c)); or (iii) where the external cladding is timber, by using fire-retardant-treated timber.	**The requirements for walls in a Level 2 construction shall be as for Level 1 construction (see Clause 3.5.1),** except that PVC cladding is not permitted and all external timber wall cladding shall be of fire-retardant-treated timber.	**The requirements for external walls in a Level 3 construction shall be as for Level 2 construction (see Clause 3.5.2).**

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
WINDOWS	All openable windows, including louvres, in a Level 1 construction shall be screened with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8 mm in such a way that the entire opening remains screened when the window is open.	**The requirements for all windows, including louvres, in a Level 2 construction shall be as for Level 1 construction (see Clause 3.6.1)** except that aluminium mesh shall not be used. In addition to the above, the following applies: (a) Where timber is used, it shall be fire-retardant-treated timber except where protected by non-combustible shutters. (b) Where leadlight windows are used, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.	**The requirement for windows in a Level construction shall be as for Level 2 construction (see Clause 3.6.2)** except that where the windows are not protected by non-combustible shutters, they shall be glazed with toughened glass.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
EXTERNAL DOORS	External doors in a level 1 construction are to be fitted with – (a) weather strips or draught excluders to prevent the penetration or build-up of burning debris beneath the door; and (b) tight fitting door screens fitted with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8 mm.	**The requirements for external doors in a Level 2 construction shall be as for Level 1 construction except that aluminium shall not be used for the mesh (see Clause 3.7.1).** If leadlight glazing panels are incorporated in the doors, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.	**The requirements for external doors in a Level 3 construction shall be as for Level 2 construction (see Clause 3.7.2)** except that – (a) timber doors shall be fire-retardant-treated or shall have a non-combustible covering on the exterior surface; or (b) doors shall be protected by shutters of non-combustible material; or (c) doors shall be solid-core having a thickness not less than 35 mm.
VENTS AND WEEPHOLES	Vents and weepholes in a Level 1 construction shall be protected with spark guards made from corrosion-resistant-steel, bronze or aluminium mesh with a maximum aperture size of 1.8 mm (see Figure 3.4).	**The requirements for Level 2 construction vents and weepholes shall be as for Level 1 construction (see Clause 3.8.1),** except that aluminium mesh shall not be used.	**The requirements for vents and weepholes in a Level 3 construction shall be as for Level 2 construction (see Clause 3.8.2**

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
ROOFS	The following general requirements shall apply to all types of roofing systems in a Level 1 construction: (a) Timber shakes or shingles shall not be used for the roof covering. (b) The roof/wall junction shall be sealed either by the use of fascias and eaves linings, or by sealing the gaps between the rafters with a suitable non-combustible material. (c) Sarking shall have a flammability index of not more than 5 (see AS1530.2). ***Tiled roofs*** Tiled roofs shall be fully sarked (see Clause 3.9.1.1(c). The sarking shall be located directly below the tiling barrens and shall cover the entire roof area including the ridge ***Sheeted roofs*** The requirements for sheeted roofs in a Level 1 construction are as follows: (a) Only metal or fibre-cement sheet shall be used. (b) All gaps under the corrugations or ribs of the roofing material where it meets the fascia or wall line shall be sealed or protected- (i) by fully sarking the roof; or (ii) by providing corrosion-resistant steel or bronze mesh, with a maximum aperture size of 1.8 mm, profiled metal sheet, neoprene seal, compressed mineral wool or similar material.	**The requirements for a roof in a Level 2 construction shall be as for Level 1 construction (see Clause 3.9.1),** except that all roof sheeting shall be non-combustible and sarked, and rooflight glazing shall be of wired glass. Thermoplastic material or toughened glass shall not be used as the glazing for rooflights. The case of the evaporative cooler shall be manufactured from a non-combustible material.	**The requirements for roof covering in a Level 3 construction shall be as for Level 2 construction (see Clause 3.9.2)** except that no fibre-reinforced cement or aluminium sheet shall be used.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
ROOFS (Cont.)	NOTES: 1) The method of protection in Item (b)(ii) can only be achieved on a roof without valleys and having the deck fixed directly to, but not structurally supported by, the fascia. 2) It is generally recognized that where compressed mineral wool is used for sealing against bushfire attack or for other purposes, adequate ventilation should be provided to stop condensation on the mineral fibre causing corrosion in the roof sheeting or supporting structure. (c) Rib caps and ridge capping shall be sealed in accordance with Clause 3.9.1.3 (b) (see Figure 3.5(a)), or preformed rib caps or ridge capping shall be used (see Figures 3.5(b) and (c)). ***Rooflights*** The requirements for rooflights in a Level 1 construction are as follows: (a) All penetrations of the roof space for the installation of rooflights and associated shafts shall be sealed with a non-combustible sleeve or lining. Thermoplastic sheet in a metal frame may be used for a rooflight, but the diffuser installed at ceiling level shall be of wired or toughened glass in a metal frame NOTE: AS 1288 and AS 4285 sets out specific requirements for glazing and skylights. (b) Vented rooflights shall be provided with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8 mm.		

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
ROOFS (Cont.)	***Roof ventilators*** All components of roof ventilators, including the rotary type, in a Level 1 construction shall be constructed of non-combustible material and shall be sealed against the entry of sparks and embers with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8 mm. ***Roof-mounted evaporative cooling units*** Roof-mounted evaporative cooling units shall only be used if the openings to the cooling unit are encased in corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8 mm.		
EAVES	All eaves in a Level 1 construction shall be enclosed, and the fascia or the gaps between the rafters shall be sealed (see Clause 3.9.1.1)	**The requirements for eaves in a Level 2 construction shall be as for Level 1 construction (see Clause 3.10.1),** except that all timber eaves lining and joining strips shall be of fire-retardant-treated timber.	**The requirements for eaves in a Level 3 construction shall be as for Level 2 construction (see Clause 3.10.2)** except that aluminium shall not be used.
FASCIAS	There are no requirements for fascias in a Level 1 construction.	**All materials used for fascias in a Level 2 construction** shall be either non-combustible or of fire-retardant-treated timber.	**The requirements for fascias in a Level 3 construction shall be as for Level 2 construction (see Clause 3.11.2)** except that no fibre-reinforced cement or aluminium sheet shall be used.

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
GUTTERS AND DOWNPIPES	Any materials or devices used to stop leaves collecting in the gutters of a Level 1 construction shall have a flammability index of not greater than 5 when tested in accordance with AS 1530.2.	**The requirements for gutters and downpipes in a Level 2 construction shall be as for Level 1 construction (see Clause 3.14.1).**	**The requirements for gutters and downpipes in a Level 3 construction shall be as for Level 2 construction (see Clause 3.12.2).**
VERANDAS AND DECKS	Verandas, decks, and the like, forming part of a building required to be Level 1 construction shall comply with one, or a combination, of the following: (a) *Slab* - A reinforced concrete suspended slab floor, supported by posts or columns complying with Clause 3.4 or walls complying with Clause 3.5, or a slab-on-the-ground floor complying with Clause 3.3. (b) *Sheeted or tongued and grooved solid flooring* – The requirements for flooring are as follows: (i) Compliance with the flooring requirements shall be in accordance with Clause 3.3 (ii) Where the clearance between the finished ground level and the underside of the floor is not greater than 400 mm above finished ground level, all joints in the flooring shall be covered (above the floor level) or shall be sealed. (c) *Spaced decking* – The requirements for spaced decking are as follows: (i) The decking timbers shall be fixed with a clearance of not less than 5 mm between adjacent timbers.	**The requirements for verandas and decks in a Level 2 construction shall be as for Level 1 construction (see Clause 3.11.1)** except that if spaced decking is used, fire-retardant-treated timber shall be used for the decking material.	**The requirements for verandas and decks in a Level 3 construction shall be as for Level 2 construction (see Clause 3.13.2)** except that all materials shall be non-combustible or where timber is used, it shall be fire- retardant-treated (including any balustrades).

ITEM	LEVEL 1	LEVEL 2	LEVEL 3
VERANDAS AND DECKS (Cont.)	(ii) The external perimeter beneath the decking shall not be enclosed nor shall access to the space beneath the decking be impeded. NOTE: This requirement is designed to ensure that access to extinguish fires and remove burning material is maintained. (iii) Any supports for the decking shall be treated as set out in Clause 3.4. (iv) Decking timbers shall not be allowed to connect with the remainder of the building unless measures are used to prevent the spread of fire into the building.		
SERVICE PIPES (WATER AND GAS)	All exposed piping, for water and gas supplies, in a Level 1 construction shall be metal. Pipes of other materials shall be buried to a depth of at least 300 mm below the finished ground level.	**The requirements for service pipes in a Level 2 construction shall be as for Level 1 construction (see Clause 3.12.1).**	**The requirements for service pipes in a Level 3 construction shall be as for Level 2 construction (see Clause 3.14.2).**