



Bush Fire Prone Land

Addendum to Construction Certificate Specifications

Bushfire Attack Level (BAL) 29

Lot _____ Sec _____ Deposited Plan _____
Street Address. _____
Locality _____
Building Description _____
Applicant _____ Date _____
Development Consent No. _____

ATTACK LEVEL 29 (BAL — 29)

SUBFLOOR

Please tick appropriate box

1. Enclosed Subfloor Space

(a) There are not construction requirements for supports, bearers, joists and flooring when the subfloor is enclosed with a wall that complies with section 4 or (b) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion resistant steel, bronze or aluminium; or (c) a combination of Items

2. Unenclosed Subfloor Supports

The support posts, columns, stumps, piers and poles shall be—

(a) of non-combustible material; or (b) of bushfire-resisting timber (see Appendix 1); or (c) a combination of Items

3. Unenclosed Subfloor Space – Bearers, Joists & Flooring

(a) bearers, joists & flooring greater than 400mm above finished ground level or

(b) bearers, joists & flooring less than 400mm above finished ground level shall be one of the following: (1) non-combustible; or (2) bushfire-resisting timber (see Appendix 1); or (3) a combination of any of Items

Flooring shall be—

(a) non-combustible; or (b) bushfire-resisting timber (see Appendix 1); or (c) timber (other than bushfire-resisting timber), particleboard or plywood flooring where the underside is lined with sarking-type material or mineral wool insulation; or (d) a combination of any of Items above or (e) a system complying with AS 1530.8.1

EXTERNAL WALLS

4. Walls

Provided the exposed components of the walls are a minimum thickness of 90mm, walls shall be one of the following:

(a) Made of non-combustible material (e.g., full masonry, brick veneer, mud brick, concrete, aerated concrete). or

(b) Made of timber-framed or steel-framed walls that are sarked on the outside of the frame and clad with— (1) fibre-cement external cladding, a minimum of 6 mm in thickness; or (2) steel sheet; or (3) bushfire-resisting timber (see Appendix 1); or (4) A combination of Items

(c) Timber logs of a species with a density of 680 kg/m³ or greater at a 12% moisture content; of a minimum nominal overall thickness of 90mm and a minimum thickness of 70 mm; and gauge planed

5. Joints

- (a) All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed to prevent gaps.
- (b) Alternatively, sarking-type material can be applied over the frame prior to fixing any external cladding.

6. Vents and weepholes

Vents and weepholes in external walls shall be screened with a mesh with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium, except where the vents and weepholes are less than 3 mm.

EXTERNAL GLAZED ELEMENTS AND ASSEMBLIES AND EXTERNAL DOORS

7. Bushfire shutters

Where fitted, bushfire shutters shall

(a) be fixed to the building and be non-removable and (b) when in the closed position, have no gap greater than 3 mm between the shutter and the wall, the sill or the head and (c) be readily manually operable from either inside or outside and (d) protect the entire window assembly or door assembly and (e) consist of non-combustible materials or bushfire resisting timber (see appendix 1) and (f) where perforated, have—uniformly distributed perforations with a maximum aperture of 3 mm when the shutter is providing radiant heat protection or (g) 2 mm when the shutter is also providing ember protection (such as where the openable portion of the window is not screened in accordance with the requirements; and (h) a perforated area shall be no greater than 20% of the shutter and if bushfire shutters are fitted to all external doors then at least one of those shutters shall be operable from the inside to facilitate safe egress from the building.

8. Screens for windows and doors

Where fitted, screens for windows and doors shall have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium. Gaps between the perimeter of the screen assembly and the building element to which it is fitted shall not exceed 3 mm.

The frame supporting the mesh or perforated sheet shall be made from—

- (a) metal; or
- (b) bushfire-resisting timber (see Appendix 1).
- (c) Screen assemblies shall be attached using metal fixings.

9. Windows

Windows shall comply with one of the following:

- (a) They shall be completely protected by a bushfire shutter that complies with Clause 7 or

(b) They shall comply with the following: (1) Window frames and window joinery and shall be made from Bushfire-resisting timber (see Appendix 1) or (2) Metal or (3) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel, and the frame and the sash shall satisfy the design load, performance and structural strength of the member and (4) Externally fitted hardware that supports the sash in its functions of opening and closing shall be metal and (5) Glazing shall be toughened glass minimum 5 mm and (6) Where glazing is less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the window frame (see Figure D3), that portion shall be screened externally with a screen that complies with Clause 8 and (7) The openable portions of windows shall be screened internally or externally with screens that comply with Clause 8.

10. Side-Hung External Doors

Side-hung external doors, including French doors, panel fold and bi-fold doors, shall comply with one of the following:

(a) They shall be protected by a bushfire shutter that complies with Clause 7 or

(b) They shall be completely protected externally by screens that comply with Clause 8 or

(c) They shall comply with the following:

(d) non-combustible; or

(e) a solid timber door, having a minimum thickness of 35 mm for the first 400 mm above the threshold; or

(g) a fully framed glazed door, where the framing is made from non-combustible materials or from bushfire-resisting timber (see Appendix 1) and

(h) Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal and (i) Where doors incorporate glazing, the glazing shall be toughened glass minimum 6 mm and (j) Where glazing is less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the door (see Figure D3), that portion shall be screened externally with screens that comply with Clause 8 and

(k) Door frames shall be made from one of the following: (l) Bushfire-resisting timber (see Appendix 1). or (m) Metal. or (n) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel and the door assembly shall satisfy the design load, performance and structural strength of the member and (o) Doors shall be tight-fitting to the door frame and to an abutting door, if applicable and (p) Weather strips, draught excluders or draught seals shall be installed at the base of side-hung external doors.

11. Sliding External Doors

Sliding doors shall comply with one of the following:

(a) They shall be protected by a bushfire shutter that complies with Clause 7 or

(b) They shall be completely protected externally by screens that comply with Clause 8 or

(c) They shall comply with the following: Both the door frame supporting the sliding door and the framing surrounding any glazing shall be one of the following:

(d) Bushfire-resisting timber (see Appendix 1) or (e) Metal; or (f) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel and the door assembly shall satisfy the design load,

performance and structural strength of the member and (h) Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal and (i) Where sliding doors incorporate glazing, the glazing shall be toughened glass minimum 6 mm and (j) Sliding doors shall be tight-fitting in the frames.

12. Vehicle access doors

Vehicle access doors shall be made from—

- (a) non-combustible material; or
- (b) bushfire-resisting timber (see Appendix 1); or
- (c) fibre-cement sheet, a minimum of 6 mm in thickness; or
- (d) a combination of any of items above.
- (e) Panel lift, tilt doors or side-hung doors shall be fitted with suitable weather strips, draught excluders, draught seals or guide tracks, as appropriate to the door type, with a maximum gap no greater than 3 mm and (f) Roller doors shall have guide tracks with a maximum gap no greater than 3 mm and shall be fitted with a nylon brush that is in contact with the door (see Figure D4,) and (g) Vehicle access doors shall not include ventilation slots.

ROOFS (INCLUDING VERANDA AND ATTACHED CARPORT ROOFS, PENETRATIONS, EAVES, FASCIAS, GABLES, GUTTERS AND DOWNPIPES)

13. Roofs – All

- (a) Roof tiles, roof sheets and roof-covering accessories shall be non-combustible and
- (b) The roof/wall junction shall be sealed, to prevent openings greater than 3 mm, either by the use of fascia and eaves linings or by sealing between the top of the wall and the underside of the roof and between the rafters at the line of the wall and
- (c) Roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium and
- (d) A pipe or conduit that penetrates the roof covering shall be non-combustible.
- (e) Only evaporative coolers manufactured in accordance with AS60335.2.98 shall be used. Evaporative coolers with an internal damper to prevent the entry of embers into the roof space need to be screened externally.

14. Tiled Roofs

- Tiled roofs shall be fully sarked and the sarking shall have a flammability index of not more than 5, when tested to AS15 30.2) and be located directly below the roof battens and cover the entire roof area including the ridge and extend into gutters and valleys.

15. Sheet Roofs

Sheet roofs shall—

- (a) be fully sarked in accordance with Clause 14 except that foil-backed insulation blankets may be installed over the battens or
- (b) have any gaps greater than 3 mm under corrugations or ribs of sheet roofing and between roof components sealed at the fascia or wall line and at valleys, hips and ridges by— (i) a mesh or perforated sheet with a maximum aperture of 2 mm,

made of corrosion-resistant steel or bronze ; or (ii) mineral wool; or (iii) other non-combustible material; or (iv) a combination of any of Items (i), (ii) or (iii) above.

16. Roof Penetrations

The following apply to roof penetrations:

- (a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be adequately sealed at the roof to prevent gaps greater than 3 mm. The material used to flash the penetration shall be non-combustible and
- (b) Openings in vented roof lights, roof ventilators or vent pipes shall be fitted with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium and
- (c) All overhead glazing shall be Grade A safety glass complying with AS 1288 and
- (d) Glazed elements in roof lights and skylights may be of polymer provided a Grade A safety glass diffuser, complying with AS 1288, is installed under the glazing. Where glazing is an insulating glazing unit (IGU), Grade A toughened safety glass minimum 4 mm, shall be used in the outer pane of the IGU and
- (e) Where roof lights are installed in roofs, the glazing shall be protected with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium and
- (f) Evaporative cooling units shall be fitted with butterfly closers at or near the ceiling level, or the unit shall be fitted with non-combustible covers with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium and
- (g) External single pane glazed elements of roof lights and skylights, where the pitch of the glazed element is 18 degrees or less to the horizontal, shall be protected with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.
- (h) Flashing elements shall be non combustible, however may be of an alternate material provided the integrity of the rood covering is maintained by an under - flashing made of non combustible material.
- (i) Eaves lighting shall be adequately sealed and not compromise the performance of the element.

17. Eaves Linings, Fascias and Gables

The following apply to eaves linings, fascias and gables:

- (a) Joints in eaves linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds and
- (b) Gables shall comply with Clause 4 and
- (c) Fascias and bargeboards shall where timber is used, be made from bushfire-resisting timber (see Appendix 1); or
- (d) where made from metal, be fixed at 450 mm centres; or
- (e) be a combination of Items above.
- (f) Eaves linings shall be—
- (g) fibre-cement sheet, a minimum 4.5 mm in thickness; or
- (h) bushfire-resisting timber (see Appendix 1); or
- (i) a combination of Items above.
- (j) Eaves penetrations shall be protected the same as for roof penetrations (see Clause 16) and (k) Eaves ventilation openings shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

18. Verandah, Carport and Awning Roofs

(a) A verandah, carport or awning roof forming part of the main roof space [see Figure D1(a)] shall meet all the requirements for the main roof, as specified in Clauses 13 -17 and (b) A verandah, carport or awning roof separated from the main roof space by an external wall [see Figures D1(b) and D1(c)] complying with Clause 4 shall have a non-combustible roof covering and the support structure shall be (i) of non-combustible material; or (ii) bushfire-resisting timber (see Appendix 1); or (iii) timber rafters lined on the underside with fibre-cement sheeting a minimum of 6 mm in thickness, or with material complying with AS 1530.8.1; or (iv) a combination of any of Items (i), (ii) or (iii) above.

20. Gutters

Box gutters shall be non-combustible and flashed at the junction with the roof with non-combustible material.

If installed, gutter and valley leaf guards shall be non-combustible.

With the exception of box gutters, gutters shall be metal or PVC-U.

VERANDAS, DECKS, STEPS, RAMPS AND LANDINGS

21. Enclosed Subfloor Spaces

There are no construction requirements for support posts, columns, stumps, stringers, piers, poles, bearers and joists when the subfloor is enclosed with (a) materials complying with Clause 4 and (b) all openings greater than 3 mm are screened with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel or bronze

Unenclosed Subfloor Spaces

21. Supports

Support posts, columns, stumps, stringers, piers and poles shall be—

(a) of non-combustible material; or (b) of bushfire-resisting timber (see Appendix 1); or (c) a combination of Items (a) and (b) above.

22. Bearers and Joists

shall be—

(a) of non-combustible material; or (b) of bushfire-resisting timber (see Appendix 1); or (c) a combination of Items (a) and (b) above.

23. Decking

Decking, stair treads and the trafficable surfaces of ramps and landings shall be—

(a) of non-combustible material; or (b) of bushfire-resisting timber (see Appendix 1); or (c) a combination of Items (a) and (b) above or be an enclosed subfloor and

(d) the gaps between the decking shall be 3mm or 10mm

25. Balustrades, handrails or other barriers

Those parts of the handrails and balustrades less than 125 mm from any glazing or any combustible wall shall be (a) of non-combustible material; or (b) bushfire-resisting timber (see Appendix 1); or (c) a combination of Items above.

26. Veranda posts

shall be—

- (a) of non-combustible material; or
- (b) of bushfire-resisting timber (see Appendix 1); or (c) a combination of Items (a) and (b) above.

27. Attached Structures

(a) any part of a garage, carport, verandah or similar roofed structure that is attached to, or shares a common roof space with the dwelling, the entire garage, carport, verandah or similar roofed structure shall comply with the construction requirements of this BAL or

(b) the structure shall be separated from the dwelling by a wall that extends to the underside of a non-combustible roof covering, and that complies with the following:

The wall shall be of masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 mm in thickness or

have an FRL of not less than 60/60/60 for loadbearing walls and –/60/60 for non-loadbearing walls when tested from the attached structure side and shall have openings protected as follows:

- (i) Doorways—by FRL –/60/30 self-closing fire doors.
- (ii) Windows—by FRL –/60/– fire windows permanently fixed in the closed position.
- (iii) Other openings—by construction with an FRL not less than –/60/–.

Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not comply with the above [Item (iii)].

28. Garages and carports below a dwelling

(a) Shall comply with the construction requirements of this BAL or

(b) any construction separating the garage or carport (including walls and flooring systems) from the remainder of the dwelling shall comply with the following:

have an FRL of not less than 60/60/60 for loadbearing construction and –/60/60 for non-loadbearing construction when tested from the garage or carport side or if a wall be of masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 mm in thickness and shall have openings protected in accordance with the following:

- (i) Doorways—by –/60/30 self-closing fire doors.
- (ii) Windows—by –/60/– fire windows permanently fixed in the closed position.
- (iii) Other openings—by construction with an FRL not less than –/60/–.

NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not comply with the above [Item (iii)]. or

(d) if separating construction is a wall, be of masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 mm in thickness

29. Adjacent Structures

(a) Adjacent garage, carport, or similar roofed structures shall comply with the construction requirements of this BAL or

The adjacent structure shall be separated from the dwelling by one of the following:

(b) A distance of not less than 6 m or

(c) A wall that extends to the underside of a non-combustible roof covering and is of

masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 mm in thickness or has an FRL of not less than 60/60/60 for loadbearing walls and –/60/60 for non-loadbearing walls when tested from the attached structure side and any openings in the wall shall be protected in accordance with the following:

(i) Doorways—by FRL –/60/30 self-closing fire doors.

(ii) Windows—by FRL –/60/– fire windows permanently fixed in the closed position.

(iii) Other openings—by construction with an FRL not less than –/60/–.

NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not comply with the above [Item (iii)].

WATER AND GAS SUPPLY PIPES

Above-ground, exposed water and gas supply pipes shall be metal.

I agree to install and implement all of the above methods of construction/building elements at the development described in the development application.

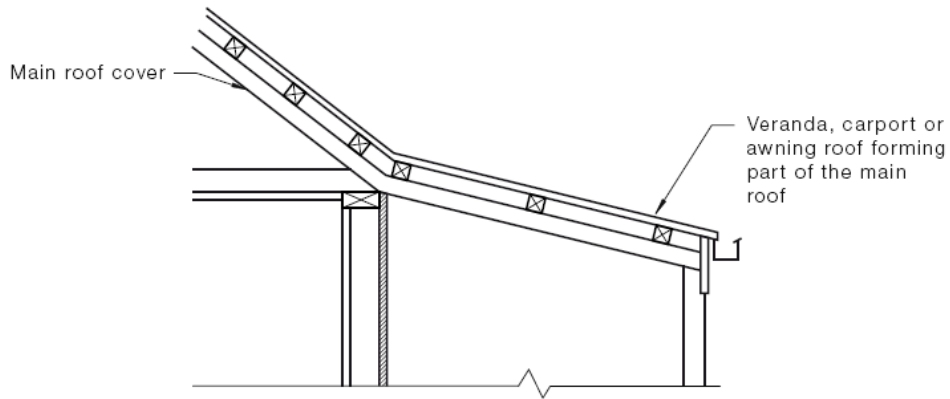
Signed by the applicant: _____

Date: _____

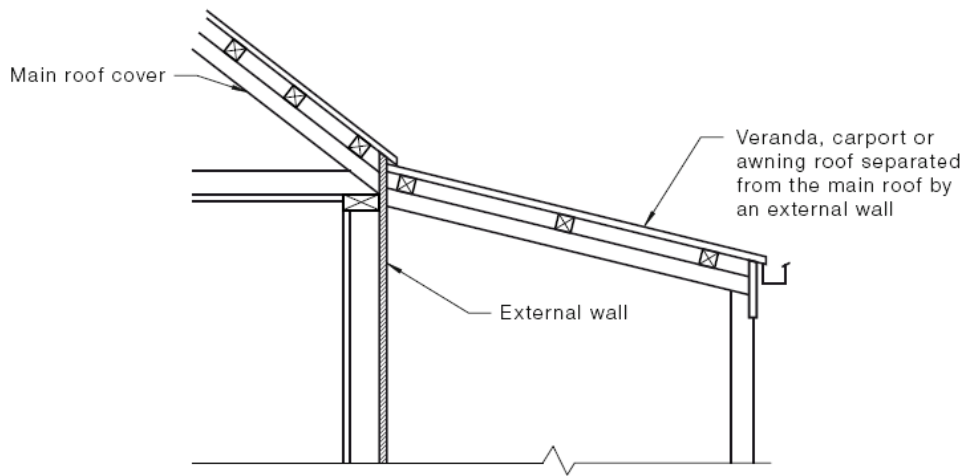
Name (*please print*): _____

Appendix 1

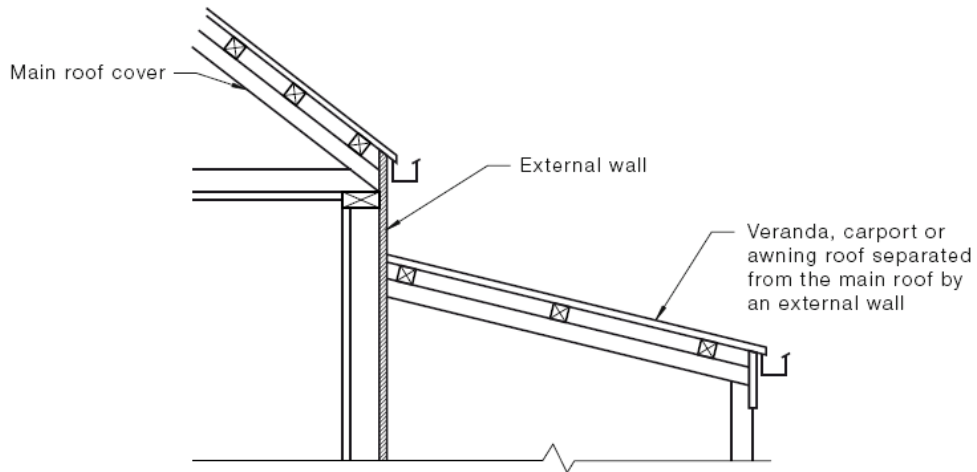
Standard trade name	Botanical name
Ash, silvertop	Eucalyptus sieberi
Blackbutt	Eucalyptus pilularis
Gum, red, river	Eucalyptus camaldulensis
Gum, spotted	Corymbia maculata
	Corymbia henryi
	Corymbia citriodora
Ironbark, red	Eucalyptus sideroxylon
Kwila (Merbau)	Intsia bijuga
Turpentine	Syncarpia glomulifera



(a) Continuous roof



(b) Continuous roof with veranda, carport or awning roof separated from main roof



(c) Discontinuous roof

FIGURE D1 VERANDA, CARPORT OR AWNING ROOFS SHOWING CONTINUOUS AND DISCONTINUOUS ROOF TYPES

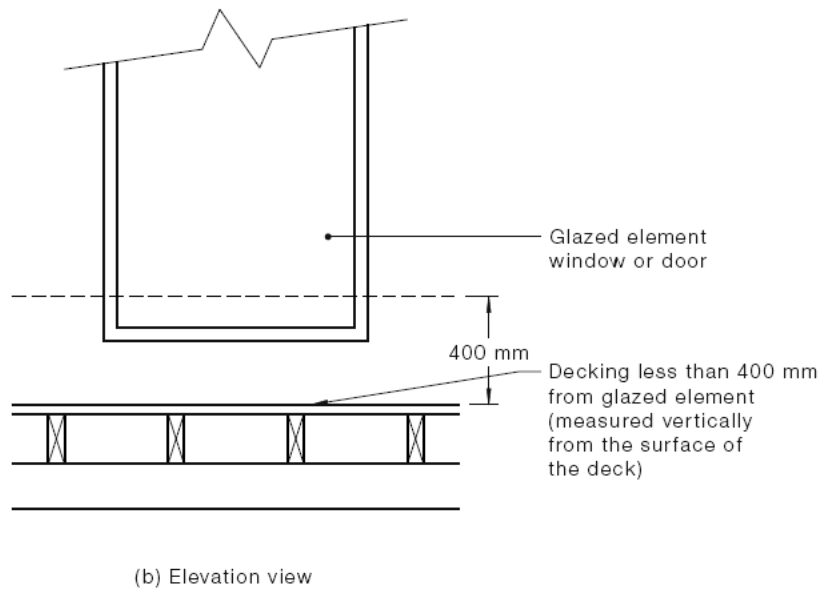
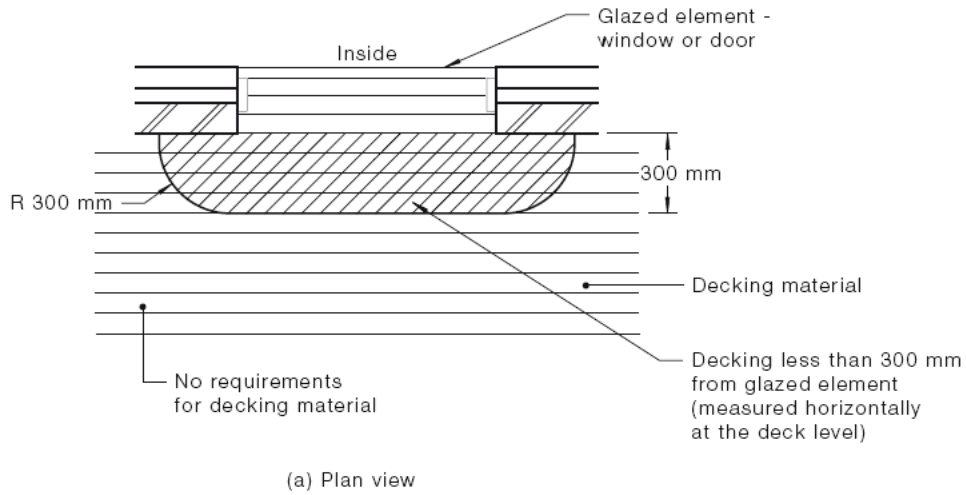
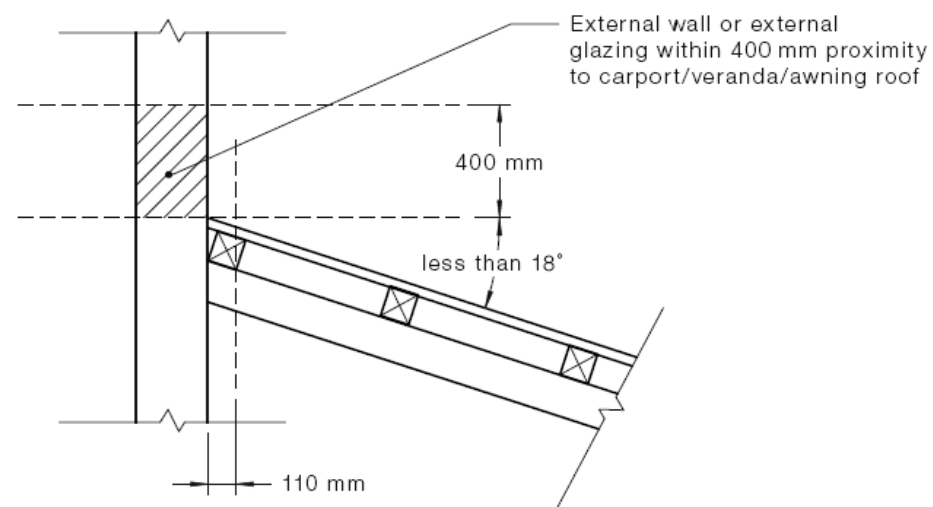
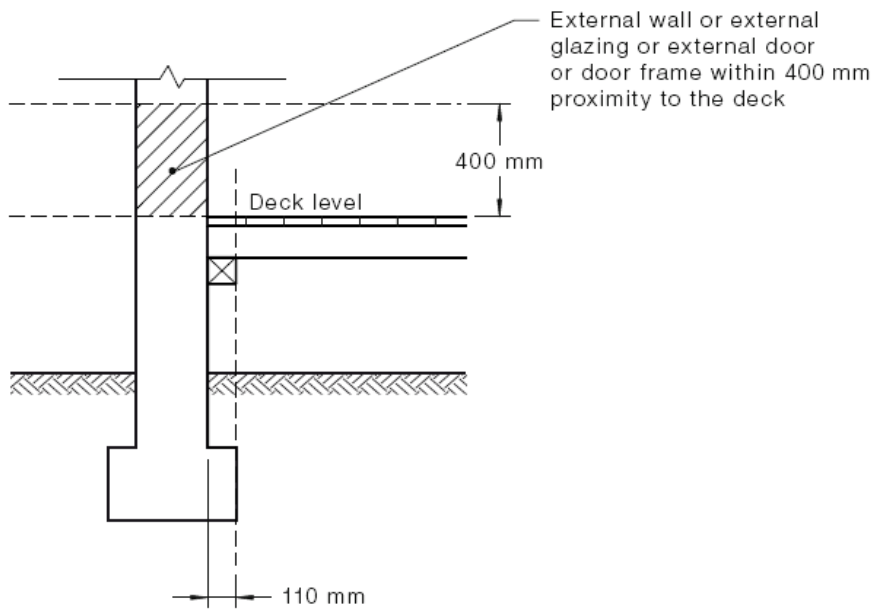
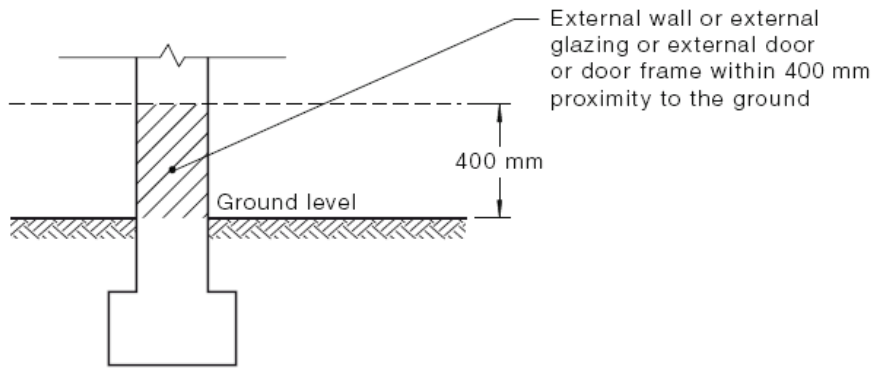


FIGURE D2 DECKING WITHIN HORIZONTAL AND VERTICAL LIMITS OF GLAZED ELEMENTS



DIMENSIONS IN MILLIMETRES

FIGURE D3 EXTERNAL WALLS OR EXTERNAL GLAZING, OR EXTERNAL DOORFRAMES WITHIN LIMITS ABOVE GROUND, DECKS, CARPORT ROOFS

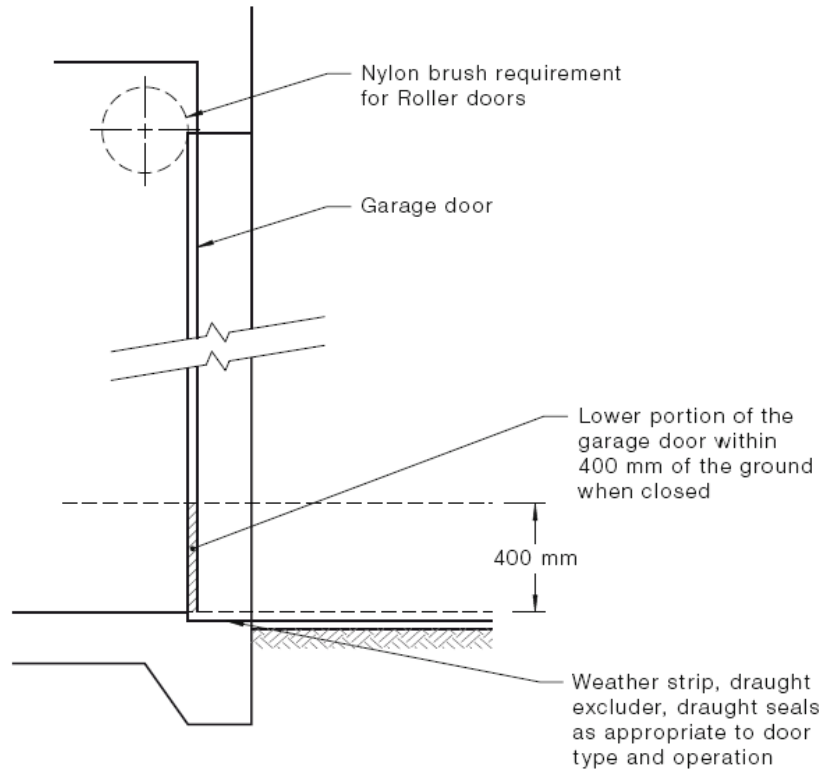


FIGURE D4 VEHICLE ACCESS DOORS (GARAGE DOORS)