



Overview

- **Recent bush fire reforms:**
 - Map of Bush Fire Prone Areas
 - Planning
 - Building
- **Bush fire requirements for a single house (including AS 3959 requirements)**

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Bush fire reforms

- On 2 May 2014, the State Government announced its approach to address Keelty recommendations into 2011 Perth Hills bushfire.
- Key measures include:
 - designate bushfire prone areas across the State; and
 - new SPP, Guidelines and Regulations to implement additional bushfire planning requirements.

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Map of Bush Fire Prone Areas

- On 8 December 2015, FES Commissioner made an Order that designates areas as bush fire prone.
- The order gives effect to the 'Map of Bush Fire Prone Areas'.

FES Commissioner designates Western Australian Map of Bushfire Prone Areas by publishing an order in the Government Gazette

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graph TD
    A[FES Commissioner designates Western Australian Map of Bushfire Prone Areas by publishing an order in the Government Gazette] --> B[Informs Planning Decisions]
    A --> C[Informs Building Decisions]
  
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Map of Bush Fire Prone Areas


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PLANNING FOR BUSHFIRE RISK MANAGEMENT POLICY FRAMEWORK

Bushfire planning reform

- *State Planning Policy 3.7 Planning in Bushfire Prone Areas*
 - Avoids intensification of development in high risk areas
 - Requires up front assessment of bushfire risk at all stages of the planning process
- *Planning and Development (Local Planning Scheme) Regulation amendments* – Bushfire risk management deemed provisions automatically inserted into every local planning scheme in WA
 - Requires a BAL assessment be undertaken prior to the development of habitable buildings (does not apply to single houses on a lot < 1,100m²)
 - Requires that development approval be obtained if BAL-40 or BAL-FZ, regardless of any exemptions that otherwise apply

PLANNING FOR
BUSHFIRE RISK MANAGEMENT
POLICY FRAMEWORK



➔ **BUSHFIRE PROTECTION CRITERIA – ACCEPTABLE SOLUTIONS (L2)**

ELEMENT 1 – LOCATION
Development is located in an area that is or will, on completion, be subject to either a moderate or low BHL, or BAL-29 or below.

ELEMENT 2 – SITING AND DESIGN

- APZ – minimum 20m. Where 20m not possible, APZ sufficient enough to ensure potential radiant heat impact of a fire does not exceed 29km/m².
- HSZ – 80m. May be reduced or eliminated if construction standard increased and does not exceed BAL-29.

ELEMENT 3 – VEHICULAR ACCESS

- Two access routes
- Technical requirements for:
 - Public road
 - Cul-de-sac
 - Battle Axe
 - Private driveway >50m
 - Emergency access way
 - Fire service access routes.

ELEMENT 4 – WATER

- Reticulated water supply, or;
- Provision of water tanks for fire fighting purposes.



BUSHFIRE ACCREDITATION FRAMEWORK




- Framework/Guidelines for establishing accreditation schemes for:
 - Level 1 – BAL Assessors
 - Level 2 – Bushfire Planning Practitioners (Prescriptive)
 - Level 3 – Bushfire Planning Practitioners (Performance)
- FPAA is first training and accrediting body for Level 1 BAL Assessors (www.fpaa.com.au).


www.planning.wa.gov.au

Building Code of Australia

- A performance based document that provides the minimum necessary requirements for safety, health, amenity and sustainability in the design and construction of buildings.




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BCA – bush fire provisions

- Bush fire performance requirements apply in **designated bush fire prone** areas to:
 - **Class 1** e.g. dwellings; bed and breakfast
 - **Class 2** e.g. apartments
 - **Class 3** e.g. hotels; accommodation for aged, children or people with disabilities
 - **Class 10a building or deck** (associated with Class 1, 2 or 3 buildings)
- Applies to these classes regardless of the lot size.

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BCA – Performance Requirements

Performance requirements - GP5.1 & P2.3.4

A building 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 –

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


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BCA – Deemed to Satisfy Solution

- **Part G5** (BCA Vol 1) - for a Class 2 or 3 building or associated Class 10a buildings or decks:
 - AS 3959 - Construction in bushfire prone areas (2009)
- **Part 3.7.4** (BCA Vol 2) - for a Class 1 building or associated Class 10a building or deck:
 - AS 3959 - Construction in bushfire prone areas (2009); or
 - NASH Standard - 'Steel Framed Construction in Bushfire Areas'.

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Building Act & Building Regulations

- Adopts the BCA as the primary **applicable building standard** for:
 - New building work, including alterations and additions (r.31A, r.31E)
 - Relocated buildings (r.31D which references r.31A for the safety and health provisions)
 - Changes of classification (r. 31G)
 - Unauthorised building work (r.31G)

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Building Amendment Regulations

- **Building Amendment Regulations (No. 3) 2015** came into operation on 8 December 2015.
- New r.31BA provides a **four month transition** to the application of the bushfire construction requirements of the BCA in **new** bush fire prone areas.

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Building permits (r.31A and r.31BA)

- **Applications before 8 April 2016**
Building permit applications for residential buildings in bush fire prone areas **do not need to comply** with the BCA bush fire requirements.
- **Applications on or after 8 April 2016**
Building permit applications for residential buildings in bush fire prone areas **do need to comply** with the BCA bush fire requirements.

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Building Amendment Regulations

- The 4 month transition **does not apply** –
 - Once the area has been a bush fire prone area for a period of 4 months or more; or
 - if immediately before 8 December 2015, the area was identified in any way under a LPS as being subject, or likely to be subject, to bush fire.

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Building Amendment Regulations 2016

- Published in Gazette on Tuesday 5 April 2016.
- Takes effect on Friday 8 April 2016.
- Clarify the statements for bushfire that must be made by a building surveyor on:
 - certificate of design compliance
 - certificate of building compliance

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Building Amendment Regulations 2016

- Clarify that the installation of roof mounted evaporative air-conditioner is building work.
- Schedule 4, clause 2, item 13 - does not need a building permit if:
 - (a) the building or structure is not in a bush fire prone area; or
 - (b) the building is Class 4 to Class 9; or
 - (c) the building or incidental structure is located in a bush fire prone area and the BAL for the building site is BAL-Low; or
 - (d) the building or structure:
 - (i) is in a bush fire prone area; and
 - (ii) the BAL for the building site is BAL-12.5, BAL-19 or BAL-29; and
 - (iii) the installation of the unit complies with the requirements for roof penetration in AS3959.

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Building Amendment Regulations 2016

- Transition of BCA bushfire performance requirements until 1 May 2018, for extensions, alterations, modifications, improvement or repairs where the building work:
 - Is less than \$20,000; or
 - Does not increase the risk of ignition to the existing building. (No retrospective upgrade of existing homes being considered at this time)
- Applies to Class 1, 2 or 3 buildings and associated Class 10a buildings or decks in designated bushfire prone areas.
- Does not apply if the existing building was required to comply with BCA bushfire performance requirements.
- Does not apply to the installation of a roof mounted evaporative air conditioner.

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Building Act Forms

- In February 2016, new certificates for building surveyors released:
 - Certificate of design compliance (BA3)
 - Certificate of construction compliance (BA17)
 - Certificate of building compliance (BA18)
- Old versions no longer considered approved forms by the Building Commissioner from 8 April 2016.

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Building Act Forms

- CDC and CBC

Bush fire prone areas

In respect of a Class 1, Class 2 or Class 3 building or an associated Class 10a building or deck that is located less than 6 metres from the Class 1, Class 2 or Class 3 building--

Is the building or deck located in a bush fire prone area? Yes No

If yes:

- The Bushfire Attack Level is _____ (nominate)
- Have performance requirements GP5.1 or P2.3.4 (as relevant to classification) been applied to this building or deck? Yes No

- CDC

Alternative solutions for:

- Class 2-9 buildings; or
- Performance requirement P2.3.4 for Class 1 buildings in bush fire prone areas.

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Bush fire requirements for a single house

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Step 1 – Bush fire prone area

Step 1: Determine if property is designated as bushfire prone (use Map of Bush Fire Prone Areas)



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Step 2 – Determine BAL

Step 2: Determine Bushfire Attack Level (BAL)

- Part 2 of AS 3959 states that you can use either:
 - Method 1 (simplified procedure); or
 - Method 2 (detailed procedure)
- It is strongly recommended to use accredited assessor.

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Step 3 – Is planning approval required?

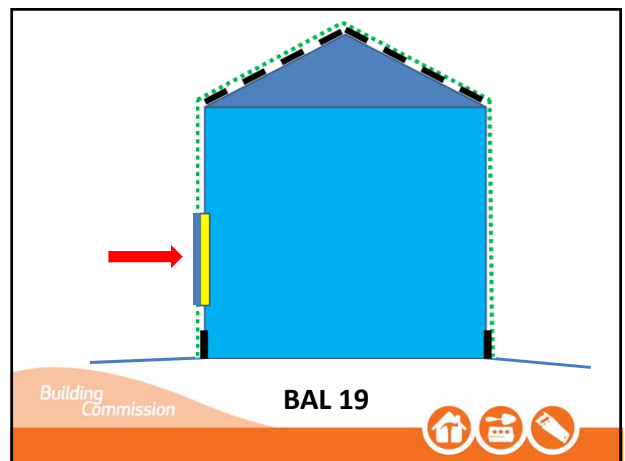
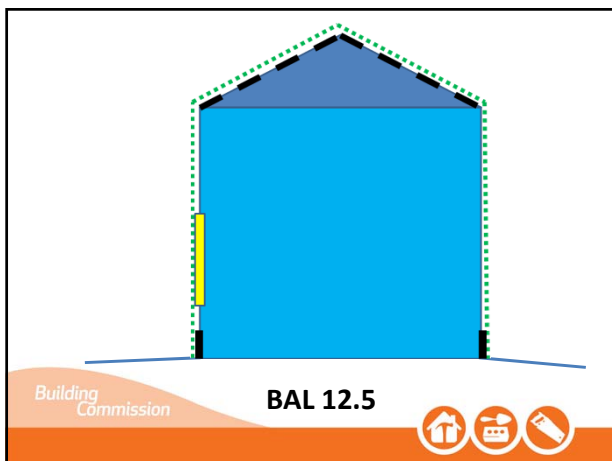
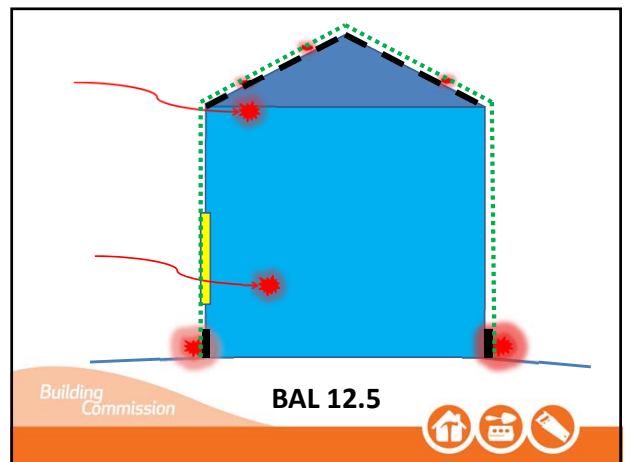
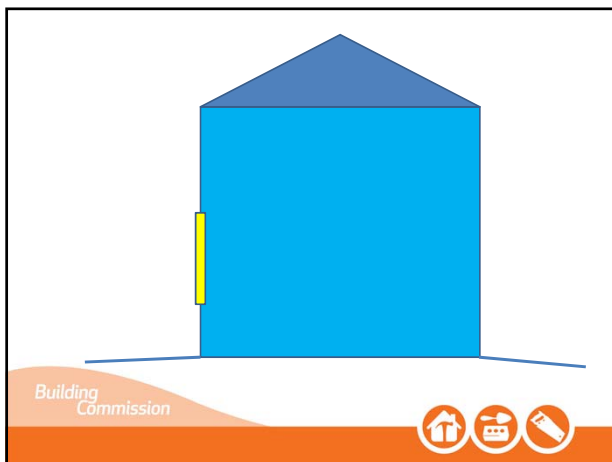
- Go straight* to the **building approval process** if single house or ancillary dwelling on:
 - a lot less than 1,100m²; or
 - a lot 1,100m² or more, is BAL-29 or less.
 (*check with local government/decision maker)
- **Planning approval** required for single house or ancillary dwelling for a lot 1,100m² or more if BAL-40 or BAL-FZ.
- Get planning approval first as it could affect your design.
- More information www.planning.wa.gov.au/bushfire
- BCA bushfire requirements apply regardless of lot size.

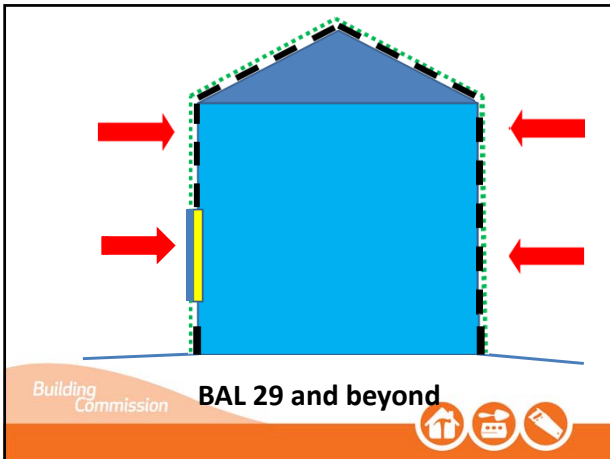
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Step 4 - Apply construction requirements

RATING	DESCRIPTION	AS 3959
BAL – Low	The risk is considered to be VERY LOW.	Section 4
BAL – 12.5	The risk is considered to be LOW. A risk of ember attack.	Section 3 & 5
BAL – 19	The risk is considered to be MODERATE. A risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.	Section 3 & 6
BAL – 29	The risk is considered to be HIGH. An increased risk of ember attack and burning debris ignited by windborne embers & a likelihood of exposure to an increased level of radiant heat.	Section 3 & 7
BAL – 40	The risk is considered to be VERY HIGH. A much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.	Section 3 & 8
BAL - FZ	The risk is considered to be EXTREME. An extremely high risk of ember attack and burning debris ignited by windborne embers, and a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.	Section 3 & 9





Must Always Refer to Standard

Information provided here is for general guidance only

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Section 3 of AS 3959
General construction requirements

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- Section 3 of AS 3959**
- Includes specific requirements for:
 - Construction/separation options for specific structures
 - External mouldings
 - Confirmation that higher levels of construction in a particular BAL meet requirements for a lower BAL
 - Shielding
 - How to measuring gaps including vents, weepholes and doors
 - Bushfire shutters
 - Testing to AS 1530.8 – solutions for comply with a particular BAL
 - Sarking
 - Timber log walls
- Building Commission
- You must always refer to AS 3959 – Slides provide general guidance only

BAL - Low
No construction requirements

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BAL - 12.5 and BAL – 19
Construction requirements

Similar requirements except for external doors and windows.

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BAL-12.5 and BAL-19 – Floors & walls

- **FLOOR** – No requirements.
- **EXTERNAL WALLS** – The exposed components of the external wall less than 400mm from the ground, deck, roof or awning, must be clad in:
 - Non-combustible materials (masonry, concrete or earthwall permitted);
 - Timber species specified in Appendix E (Tables E1);
 - Bushfire resisting timber in Appendix F (Table H1);
 - Fibre-cement sheet 6mm thick; or
 - Timber logs of species with a density of 680kg/m³ minimum nominal thickness 90mm and minimum thickness 70mm at 12% moisture content.
- Any gaps greater than 3mm including vents & weep holes must be screened.

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BAL-12.5 and BAL-19 – Glazed elements & external doors

- Where fitted, **bushfire shutters** to comply with Clause 3.7 and made from:
 - non-combustible materials,
 - bushfire resisting timbers (see appendix F),
 - timber species specified in paragraph E1, appendix E.
- Where fitted, **screens** to have a mesh with maximum aperture of 2mm made of corrosion resistant steel, bronze or aluminium. No gaps more than 3mm.
- Frame supporting screens to be:
 - Metal;
 - bushfire resisting timbers (see appendix F),
 - timber species specified in paragraph E2, appendix E.

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BAL-12.5 – Windows

- **Window frames** less than 400mm from the ground, a deck, a roof or awning (that extends greater than 110mm in width from the wall), must be:
 - Bushfire resisting timber (Appendix F);
 - Timber species specified in paragraph E2, Appendix E.
 - Metal;
 - Metal reinforced PVC-U;
- External fittings to be metal.
- **All glazing** within 400mm of the ground or deck area must be Grade A safety glass 4mm thick.
- Openable part of the window must be screened to comply with Clause 5.5.1A. Screens can be aluminum with max 2mm apertures.

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BAL-19 – Windows

- **Window frames** less than 400mm from the ground, a deck, a roof or awning (that extends greater than 110mm in width from the wall), must be:
 - Bushfire resisting timber (Appendix F);
 - Timber species specified in paragraph E2, Appendix E.
 - Metal;
 - Metal reinforced PVC-U;
- External fittings to be metal.
- **All glazing** within 400mm of the ground or deck area must be toughened glass 5mm thick. The remainder of the window may be annealed.
- If annealed glass is used, fixed and opening portions must be screened with screens that comply with Clause 6.5.1A.
- Openable part of the window must be screened (even if using toughened glass). If internal screens are used, glass must be toughened 5mm thick.

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BAL-12.5 – External Doors

- Door frames less than 400mm from the ground, deck, roof or awning must be made of:
 - non-combustible materials; or
 - bushfire resisting timbers Appendix F; or
 - timber from specified list in Paragraph E2, Appendix E.
 - Doors to be solid timber, laminated timber or reconstituted timber 35mm thick for the first 400mm.
- Hollow core doors must either be fully screened or have a metal kick plate for the bottom 400mm.
- Glass in doors must be Grade A safety glass 4mm thick.
- No gaps greater than 3mm. Weather strips to be fitted.
- Sliding door requirements same as windows except that openable part does not require a screen and glass to be Grade A safety glass.

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BAL-19 – External Doors

- **Door frames** less than 400mm from the ground, a deck, a roof or awning (that extends greater than 110mm in width from the wall), must be:
 - Bushfire resisting timber (Appendix F);
 - Timber species specified in paragraph E2, Appendix E.
 - Metal;
 - Metal reinforced PVC-U;
- Doors to be solid timber, laminated timber or reconstituted timber 35mm thick for the first 400mm.
- Hollow core doors must either be fully screened or have a metal kick plate for the bottom 400mm.
- Glass in doors must be toughened glass 5mm thick.
- No gaps greater than 3mm. Weather strips to be fitted.
- Sliding door requirements same as windows except that openable part does not require a screen & must be toughened glass minimum 5mm thick.

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BAL-12.5 and BAL-19 – Garage doors

- Lower 400mm to be:
 - non-combustible materials;
 - bushfire resisting timber Appendix F;
 - fibre-cement sheeting 6mm thick; or
 - timber from species as specified in paragraph E1, Appendix E.
- Panel lift, tilt door or side hung needs weather strips or guide tracks.
- Roller door needs guide tracks and a nylon brush that is in contact with the door.
- No gaps greater than 3mm.
- Vent slots not allowed.

Building
Commission

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BAL-12.5 and BAL-19 – Roof

- Roof cover to be:
 - non combustible and **fully sarked** on top of the rafters and extending over hips and ridges (must cover entire roof area); and
 - sarking must extend into valleys and gutters.
- On metal roofs foil backed insulation may be installed over the battens.
- All gaps sealed and if no eaves lining then it must be sealed in between rafters at the wall line.
- All gaps in corrugations must be sealed at sheet ends, no gaps greater than 3mm.
- Corrugated roof sheeting must be sealed at the fascia or wall line and at the valleys, hips & ridges.
- Roof ventilation openings must be made of non-combustible material or mesh/perforated sheet with max apertures of 2mm, made of corrosion resistant steel, bronze, aluminum.

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BAL-12.5 and BAL-19 – Gutters & roof penetrations

- **GUTTERS**
 - Box gutters need to be non-combustible.
 - No material requirements for other types of gutters & downpipes.
 - Leaf guards, if fitted, must be non-combustible.
- **ROOF PENETRATIONS** – must be sealed with a non-combustible material to prevent gaps of greater than 3mm.
 - Specific requirements for roof lights and skylights.
 - Evaporative cooling units shall be fitted with non-combustible butterfly closers as close as possible to the roof level or the unit to be covered with a non combustible cover with a mesh with maximum aperture of 2mm made of corrosion resistant steel, bronze or aluminium.
 - For BAL12.5 only, vent pipes of PVC are permitted.

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BAL-12.5 and BAL-19 – Verandahs, Carports & Decks

- Verandahs forming part of the main roof must comply with the requirements of the main roof.
- Can be constructed of any timber if separated from main roof by complying external wall. No requirement to line the underside of the verandah.
- All decking materials within 300mm of a glazed element must be:
 - either non-combustible;
 - Bushfire resisting timber see appendix F;
 - timber species in paragraph E1 and appendix E; or
 - For BAL-12.5 only, PVC-U.
- If the subfloor is enclosed then it must be in accordance with clause for external wall for portion of wall less than 400mm from ground.
- The recommended deck spacing is 3mm.
- Roof cover must be non-combustible.

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BAL-12.5 and BAL-19 – Other

- **EAVES LININGS, FASCIAS AND GABLES**
 - Gables as per clause for external walls.
 - Eaves penetrations to be sealed and ventilation openings to have ember guards made of non combustible mesh with maximum aperture of 2mm made of corrosion resistant steel, bronze or aluminium.
- **BALUSTRADE, HANDRAILS OR OTHER BARRIERS**

The standard does not have any requirements for balustrades handrails or other barriers.
- **WATER & GAS PIPES**

Above ground, exposed water or gas pipes to be metal.

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BAL - 29 Construction requirements

Sections 3 and 7

Building
Commission

You must always refer to AS 3959 – Slides provide general guidance only



BAL 29 - Floor

- If **subfloor is enclosed** with materials complying with external wall section 7.4, there are no construction requirements for the subfloor.
- If the **subfloor is unenclosed** and less than 400mm to the ground then:
 - **Bearers and joists** must be constructed of :
 - Non-combustible materials ;or
 - Bushfire resisting timbers from (see appendix F).
 - **Flooring** shall be either
 - non combustible;
 - Bushfire resisting timbers from (see appendix F); or
 - timber, particle board or plywood with the underside lined with sarking or mineral wool insulation.
- If floor is elevated more than 400mm above the ground the bearers, joists & flooring do not have any requirements under the Standard.

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BAL 29 – External walls

- The exposed components of the external wall must be:
 - Non-combustible materials (masonry, concrete or earthwall permitted);
 - timber logs of species with a density of 680kg/m³ minimum nominal thickness 90mm & minimum thickness 70mm at 12% moisture content; or
 - Cladding fixed externally to framed wall, sarked on outside of frame, and is:
 - Fibre cement sheeting minimum 6mm thick;
 - Steel sheeting; or
 - Bushfire resisting timber (Appendix F).
- Any gaps greater than 3mm including vents & weep holes must be screened.

Building
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BAL-29 – Glazed elements & external doors

- Where fitted, **bushfire shutters** to comply with Clause 3.7 and made from:
 - non-combustible materials,
 - bushfire resisting timbers (see Appendix F),
- Where fitted, **screens** to have a mesh with maximum aperture of 2mm made of corrosion resistant steel, bronze or aluminium. No gaps more than 3mm.
- Frame supporting screens to be:
 - Metal; or
 - Bushfire resisting timbers (see Appendix F).

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BAL-29 – Windows

- **Window frames** must be made of:
 - Bushfire resisting timbers (see Appendix F).
 - Metal;
 - metal reinforced PVC-U; or
- **All glazing** must be toughened glass minimum 5mm thick.
- All glazing less than 400mm from the ground, deck, roof, awning or similar structure (that extends more than 110mm in width from the window frame), that portion of glass shall be screened with a screen complying with clause 7.5.1A.
- Openable part of window must have screens that comply with Clause 7.5.1A (can be corrosion resistant steel, bronze or aluminium).
- External fittings to be metal.

Building
Commission

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BAL-29 – External Doors

- Doors to be:
 - Non-combustible;
 - Solid timber, laminated timber or reconstituted timber 35mm thick for first 400mm; or
 - Hollow core door, fully screened externally with screens that comply with Clause 7.5.1A.
- Any glass in doors to be toughened glass 6mm thick.
- If glazing less than 400mm from the ground, deck, roof, awning or similar structure extending horizontal more than 110mm in width from the window frame, that portion of glass shall be screened.
- No gaps greater than 3mm are allowed. Weather strips to be fitted.
- Door frame to be metal, bushfire resisting timbers (see Appendix F) or metal-reinforced PVC-U.

Building
Commission

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BAL-29 – Garage doors

- Be made from:
 - non-combustible materials;
 - bushfire resisting timber Appendix F; or
 - fibre-cement sheeting minimum 6mm thick.
- Panel lift, tilt door or side hung needs weather strips or guide tracks.
- Roller door needs guide tracks and a nylon brush that is in contact with the door.
- No gaps greater than 3mm.
- Vent slots not allowed.

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BAL-29 – Roof

- Same as BAL-12.5 and BAL-19.
- Additionally, pipes or conduits that pass through the roof covering shall be non-combustible.

Building
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BAL-29 – Gutters & roof penetrations

- **GUTTERS & DOWNPIPES**
 - Box gutters need to be non-combustible and flashed with non-combustible materials at junction with roof.
 - Other gutters need to be metal or PVC-U.
 - No material requirements for downpipes.
 - Leaf guards, if fitted, must be non-combustible.
- **ROOF PENETRATIONS** – must be sealed with a non-combustible material to prevent gaps of greater than 3mm. Openings in vents etc. to be screened with corrosion resistant steel, bronze or aluminum.
 - Specific requirements for roof lights and skylights.
 - Evaporative cooling units as per BAL12.5 and 19.

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BAL-29 – Verandahs, Carports & Decks

- Verandahs forming part of the main roof must comply with the requirements of the main roof.
- Verandahs & carports that are separated from the main roof by a wall as required by clause 7.4 must be constructed of:
 - non-combustible materials;
 - bushfire resisting timbers (see Appendix F); or
 - timber rafters lined on underside with 6mm fibre-cement sheeting.
- Unenclosed decks must be constructed from non-combustible material or bushfire resisting timber (see Appendix F).
- Any balustrade or handrail within 125mm of a glazed element or combustible wall must be non-combustible materials or Bushfire resisting timbers (see appendix F).
- Decking, stair treads and all trafficable surfaces shall be non-combustible materials or bushfire resisting timbers (see appendix F).

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BAL-29 – Other

- **EAVES LININGS, FASCIAS AND GABLES**
 - Gables as per clause for external walls.
 - Eaves must be lined with:
 - 4.5mm fibre cement sheet; or
 - bushfire resisting timbers (see Appendix F).
 - Fascias and bargeboards to be:
 - Metal (fixed at 450mm centres); or
 - bushfire resisting timber (see Appendix F).
- **WATER & GAS PIPES**
 - Above ground, exposed water or gas pipes to be metal.

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BAL - 40 Construction requirements

Sections 3 and 8

Building
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BAL-40 – Floors

- If **subfloor** is **enclosed** with materials complying with external wall requirements, there are no construction requirements for the subfloor.
- If the **subfloor** is **unenclosed** then it must be:
 - constructed entirely of non-combustible materials; or
 - protect the underside of the combustible elements with a non-combustible material or a system complying with AS1530.8.1

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BAL-40 – External walls

- The exposed components of the external wall must be:
 - Non-combustible materials (Minimum 90mm thick); or
 - Cladding fixed externally to framed wall, sarked on outside of frame, and be of:
 - Fibre cement sheeting minimum 9 mm thick.
 - Steel sheeting; or
 - Comply with AS 1530.8.1
- **Joints** – all joints in external walls must be covered, sealed, overlapped, backed or butt jointed to prevent gaps greater than 3mm.
- **Vents & weepholes** – Vents weepholes in external walls shall be screened with mesh of corrosion resistant steel, bronze or aluminium. Screening is not necessary for gaps smaller than 3mm.

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BAL-40 - Windows

- Windows can either have:
 - shutters; or
- The following:
 - have frames/hardware made of metal and the glass must be minimum 6mm toughened glass.
 - Both the openable and fixed parts of the window screened.
 - All seals to frame to be made of materials with a flammability index of less than 5 or silicone.

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BAL-40 - External Doors

- Doors to be:
 - Protected by bushfire shutters; or
- Comply with 8.5.3(b)

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BAL-40 - External Doors

- Sliding door can either have:
 - shutters; or
 - Comply with 8.5.4 (b)

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BAL-40 – Shutters and Screens for Glazed elements & External Doors

- Where fitted, **bushfire shutters** to comply with Clause 3.7 and made from non-combustible materials.
- Where fitted, **screens** to have a mesh with maximum aperture of 2mm made of corrosion resistant steel or bronze. No gaps more than 3mm.
- Frame supporting screens must be metal.

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BAL-40 – Garage doors

- Be made from non-combustible materials.
- Panel lift, tilt door or side hung need weather strips or guide tracks.
- Roller door needs guide tracks and a nylon brush that is in contact with the door.
- No gaps greater than 3mm.
- Vent slots not allowed.

BAL-40 – Roof

- Same as BAL-29 except openings in vents etc. to be screened with corrosion resistant steel, or bronze (no aluminum).

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BAL 40 - Gutters & roof penetrations

- **GUTTERS & DOWNPIPES**
 - Box gutters need to be non-combustible and flashed with non-combustible materials at junction with roof.
 - Other gutters need to be non-combustible.
 - No material requirements for downpipes.
 - Leaf guards, if fitted, must be non-combustible.
- **ROOF PENETRATIONS –**
 - Roof penetrations must be sealed to prevent any gaps greater than 3mm.
 - Ventilation openings to be screened with mesh.
 - Glazed assemblies and roof lights shall have an FRL of -/30/-.
 - External single pane glazed elements, roof lights or skylights at a pitch less than 18 degrees must be protected with ember guards.
 - No evaporative air coolers.

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BAL-40 – Verandahs, Carports & Decks

- Verandahs forming part of the main roof must comply with the requirements of the main roof.
- Verandahs & carports that are separated from the main roof by an external wall complying with Clause 8.4 must be constructed of:
 - non-combustible materials;
 - timber rafters lined on underside with 6mm fibre-cement sheeting; or
 - system complying with AS 1530.8.1.
- Unenclosed decks must be constructed from non-combustible material or system complying with AS 1530.8.1.
- Decking, stair treads and all trafficable surfaces shall be non-combustible materials or system complying with AS 1530.8.1.
- Decking shall not be spaced.
- Any balustrade or handrail within 125mm of a glazed element or combustible wall must be of non-combustible material.

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BAL 40 – Other

- **EAVES LININGS, FASCIAS AND GABLES**
 - Gable to comply with clause for external wall.
 - Eaves must be lined with:
 - Minimum 6mm thick fibre cement sheet; or
 - Minimum 6mm thick calcium silicate sheet.
 - Fascias and bargeboards to comply with AS 1530.8.1.
 - Eaves penetrations to have ember guards made of non-combustible material or mesh with maximum apertures of 2mm made of corrosion-resistant steel or bronze.
- **WATER & GAS PIPES**

Above ground, exposed water or gas pipes to be metal.

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BAL - FZ

Construction requirements

- Buildings with a minimum setback of 10m from classified vegetation can use details in section 9 of standard (outlined on following slides).
- Buildings with a setback less than 10m from classified vegetation must comply with AS 1530.8.2.

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BAL-FZ – Floors

- If **subfloor** is **enclosed** with materials complying with external wall, there are no construction requirements for the subfloor.
- If the **subfloor** is **unenclosed** then subfloor supports (posts, columns, stumps, piers, poles) must:
 - have FRL of at least 30/-/ and be non-combustible; or
 - be a system complying with AS1530.8.2.
- If the **subfloor** is **unenclosed** then floor system (bearers, joists, flooring) must:
 - have FRL of at least 30/30/30 and surface material be non-combustible;
 - protect the underside of the combustible elements with 30mins resistance to incipient spread of fire system; or
 - complying with AS 1530.8.2 when tested from underside.

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BAL-FZ – External walls

- The exposed components of the external wall must be:
 - Non-combustible materials (masonry, concrete or earthwall permitted);
 - A system complying with AS 1530.8.2 when tested from outside; or
 - A system with an FRL of 30/30/30 or -/30/30 when tested from outside.
- **Joints** – all joints in external walls must be covered, sealed, overlapped, backed or butt jointed to prevent gaps greater than 3mm.
- **Vents & weepholes** – Vents weepholes in external walls shall be screened with mesh of corrosion resistant steel or bronze. Screening is not necessary for gaps smaller than 3mm.

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BAL-FZ - Windows

- Windows can either have:
 - A bushfire shutter; or
 - The openable portion of the window be screened and either:
 - The window system has an FRL of at least -/30/-; or
 - The window system complies with AS 1530.8.2 when tested from the outside.

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BAL-FZ - External Doors

- Doors can either have:
 - A bushfire shutter; or
 - The following:
 - Door and frames (including doors with glazed panels) have:
 - an FRL of at least -/30/-; or
 - complies with AS 1530.8.2 when tested from the outside.
 - Doors to be tight fitting to frame or abutting door. Weather strips to be fitted.
 - Seals must not compromise the FRL or the performance achieved in AS1530.4.

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BAL-FZ – External doors

- Sliding doors can either have:
 - A bushfire shutter; or
 - The sliding door system including those with glazed panels must be tight-fitting to frames and must:
 - Have an FRL of at least -/30/-; or
 - Comply with AS 1530.8.2 when tested from the outside.

BAL-FZ – Garage doors

- Same as BAL-40.
- Additionally where garage is attached to the building, requirements of Clause 3.2.2(b) apply.

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BAL-FZ – Shutters and Screens for Glazed elements & External Doors

- Where fitted, **bushfire shutters** to comply with
 - Clause 3.7 except that perforations are not acceptable over the door system; and
 - AS 1530.8.2 when tested from the outside.
- Where fitted, **screens** to have a mesh with maximum aperture of 2mm made of corrosion resistant steel or bronze. No gaps more than 3mm.
- Frame supporting screens must be metal.

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BAL-FZ – Roof

GENERAL

Must comply with 9.6.1.

GUTTERS & DOWNPIPES

Same as BAL-40.

ROOF PENETRATIONS

- Roof penetrations must be sealed to prevent any gaps greater than 3mm.
- Roof lights and roof ventilators must comply with AS 1530.8.2 when tested from outside.
- No evaporative air coolers.

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BAL-FZ – Verandahs, Carports & Decks

- Comply with clauses:
 - 9.6.1; and
 - 9.7

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BAL-FZ – Other

- **EAVES LININGS, FASCIAS AND GABLES**

- Gable to comply with external wall requirements.
- Eaves must be lined with:
 - A system with an FRL of -/30/30; or
 - A system comply with AS 1530.8.2.
- Fascias and bargeboards to comply with AS 1530.8.2.
- Eaves penetrations to have ember guards made of non-combustible material or mesh with maximum apertures of 2mm made of corrosion-resistant steel or bronze.

- **WATER & GAS PIPES**

Above ground, exposed water or gas pipes to be metal.

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Hopefully we will end up with
houses like this



Build



Summary

Step 1: Determine if property is designated as bushfire prone

Step 2: Determine the BAL

Step 3: Determine if planning approval required

Step 4: Apply construction requirements



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- Provided on the Building Commission website and via email alerts to subscribers

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