

BUSHFIRE REQUIREMENTS FOR RESIDENTIAL CONSTRUCTION

RATING	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ Where the building is closer than 10m to classifiable vegetation	BAL-FZ
SUBFLOOR SUPPORTS	No special construction requirements	No special construction requirements	No special construction requirements	<ul style="list-style-type: none"> Enclosure by external wall or by steel, bronze or aluminum mesh, non-combustible supports. Where the subfloor is unenclosed, naturally fire resistant timber or non-combustible bearers & joists if closer than 400mm to ground. If over 400mm from ground no construction requirements 	<ul style="list-style-type: none"> If enclosed by external wall comply with the External Walls section then there are no requirements. If it is unenclosed then it must be either non-combustible or a system complying with AS 1530.8.1 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Subfloor supports - enclosure by external wall or non-combustible with an FRL of 30/-/- or Tested for bushfire resistance to AS1530.8.2
FLOORS	No special construction requirements	No special construction requirements	No special construction requirements	<ul style="list-style-type: none"> Concrete slab on ground, enclosure by external wall, metal mesh as above or Flooring less than 400mm above ground level to be non-combustible, naturally fire resistant timber or protected on the underside with sarking or mineral wool insulation 	<ul style="list-style-type: none"> Enclosure by external wall comply with the external walls section, or Concrete slab on ground, or protect the underside of the combustible elements with a non-combustible material such as fibre cement sheet, or Be constructed of non-combustible materials, or A system comply with AS1530.8.1 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Concrete slab on ground or enclosure by external wall or an FRL of 30/30/30 or Protection of underside with 30 minute incipient spread of fire system or Tested for bushfire resistance to AS1530.8.2
EXTERNAL WALLS	No special construction requirements	As for BAL-19	Parts less than 400 mm above ground or decks etc to be of; <ul style="list-style-type: none"> non-combustible material or 6 mm fibre cement clad or Naturally bushfire resistant fire timber. Timber logs of 680kg/m3 or greater O/A thickness 90mm. 	<ul style="list-style-type: none"> Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete), Timber framed, steel framed walls sarked on the outside and clad with 6 mm fibre cement sheeting or steel sheeting or Naturally Bushfire resistant timber or Timber logs of 680kg/m3 or greater O/A thickness 90mm. 	<ul style="list-style-type: none"> Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete), Timber framed or, steel framed walls sarked externally and clad with 9 mm fibre cement sheeting or steel sheeting or A system comply with AS1530.8.1 Vents & weep holes screened. 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) with minimum thickness of 90 mm or An FRL of 30/30/30 or -/30/30 when tested from outside or Tested for bushfire resistance to AS1530.8.2
EXTERNAL WINDOWS	No special construction requirements	4mm "A" grade safety glass where glass is less than 400mm from the ground or 400mm from a deck or ledge greater than 110mm. All the rest can be annealed.	<ul style="list-style-type: none"> Bushfire shutter or Toughen glazing (5mm). Screens can be bronze, aluminum or Corrosion resistant steel. Openable portion screened and frame of metal or metal reinforced PVC-U, or bushfire resisting timber 	<ul style="list-style-type: none"> Bushfire shutter can be used. Toughened glazing (5mm). Openable portion screened and frame of metal or metal reinforced PVC-U, or bushfire resisting timber and portion within 400 mm of ground level screened. 	<ul style="list-style-type: none"> Protected by bushfire shutter; or 6 mm toughened glass to be used and screening required and the frame/hardware be made of metal with Openable and fixed portion screened with steel or bronze mesh and seals to have a flammability index of less than 5 or be made of silicone 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Protected by bushfire shutter or Have an FRL of -/30/- or or comply with AS1530.8.2 and openable portion screened with steel or bronze mesh.
EXTERNAL DOORS	No special construction requirements	As for BAL-19 except door framing may be naturally fire resistant timber.	<ul style="list-style-type: none"> Protected by bushfire shutter, or Screened with steel, bronze or aluminum mesh or Glazed with 5 mm toughened glass, non-combustible or 35 mm solid timber for 400 mm above threshold, metal or bushfire resisting timber framed for 400 mm above ground, decking, etc, Tight-fitting with weather strips and draught seals. 	<ul style="list-style-type: none"> Protected by bushfire shutter, or Screened with steel, bronze or aluminum mesh, or Noncombustible, or 35mm solid timber for 400mm above threshold. Metal or bushfire resisting timber framed Toughen glass to be 6mm thick Tight-fitting with weather strips and draught seals. 	<ul style="list-style-type: none"> Protected by bushfire shutter, or Non-combustible or 35 mm solid timber door, Frame to be metal tight-fitting with weather strips at base and any glass to be 6mm toughened, be protected by a metal framed screen of bronze or corrosion resistant steel. Seals to have a flammability index of less than 5 or be made of silicone; or A system tested for bushfire resistance to AS 1530.8.1 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Protected by bushfire shutter, or Have an FRL of -/30/- or comply with AS1530.8.2 be tight-fitting with weather strips, draught seals or draught excluders at base or Seals must not compromise the FRL of the door and must satisfy AS 1530.4
SLIDING DOORS	No special construction requirements	As for BAL 19 except 4mm Grade A Safety Glass may be used.	<ul style="list-style-type: none"> Bushfire shutters; or Completely protected by screens; or Frame and door to be made of Bushfire resisting timber including species in paragraph E2 Appendix E, metal, metal reinforced PVC-U with 5mm toughened glass doors to be tight in frames. Screening is not required for the openable portion of the door. 	<ul style="list-style-type: none"> Bushfire shutters; or Completely protected by screens; or Frame and door to be made of Bushfire resisting timber, metal, metal reinforced PVC-U with 6mm toughened glass, doors to be tight in frames. Screening is not required for the openable portion of the door. 	<ul style="list-style-type: none"> Bushfire shutters; or Frame and door to be made of metal including any hardware with 6mm toughened glass, doors to be tight in frames. Screening is required for the openable and fixed portions of the door. Seals to have a flammability index of less than 5 or be made of silicone 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> Have an FRL of -/30/- or comply with AS1530.8.2 be tight-fitting with weather strips, draught seals or draught excluders at base or Sliding doors must be tight in frames.

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GARAGE DOORS	No special construction requirements	As for BAL-19	<p>The lower 400 mm above ground to be of;</p> <ul style="list-style-type: none"> • non-combustible material or • Bushfire resisting timber including species in paragraph E2 Appendix E, or • Metal or • 6 mm fibre cement clad <p>Panel lift, tilt doors or side hung to have weather strips, draught excluders, draught seals or guide tracks. No gaps greater than 3mm are allowed</p> <ul style="list-style-type: none"> • Vent slots are not allowed 	<p>The lower 400 mm above ground to be of;</p> <ul style="list-style-type: none"> • non-combustible material or • Bushfire resisting timber including species in paragraph E2 Appendix E, or • Metal or • 6 mm fibre cement clad <p>Panel lift, tilt doors or side hung to have weather strips, draught excluders, draught seals or guide tracks. No gaps greater than 3mm are allowed.</p> <ul style="list-style-type: none"> • Roller doors to have guide tracks not allowing any gaps greater than 3mm and must be fitted with nylon brushes that are in contact with the door. • Vent slots are not allowed 	<ul style="list-style-type: none"> • non-combustible material • Panel lift, tilt doors or side hung to have weather strips, draught excluders, draught seals or guide tracks. No gaps greater than 3mm are allowed • Roller doors to have guide tracks not allowing any gaps greater than 3mm and must be fitted with nylon brushes that are in contact with the door. • Vent slots are not allowed 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> • Made of non-combustible materials • Where the garage is attached to the dwelling clause 3.2.2(b) of AS3959 will apply. • Panel lift, tilt doors or side hung to have weather strips, draught excluders, draught seals or guide tracks. No gaps greater than 3mm are allowed • Roller doors to have guide tracks not allowing any gaps greater than 3mm and must be fitted with nylon brushes that are in contact with the door. • Vent slots are not allowed
ROOFS	No special construction requirements	As for BAL-19	<ul style="list-style-type: none"> • Non-combustible covering. • Roof/wall junction sealed. • Openings fitted with non-combustible ember guards. • Tiled roofs to be fully sarked. • Sheet roofs to be fully sarked or gaps to be sealed at ridge, valleys and fascia. (Note this not required on a tile roof) 	<ul style="list-style-type: none"> • Non-combustible covering. • Roof/wall junction sealed. • Openings fitted with non-combustible ember guards. • Roof to be fully sarked on top of rafter if tiled on top of battens if metal • All gaps at ridge, vallies and fascia to be sealed 	<ul style="list-style-type: none"> • Non-combustible covering. Roof/wall junction sealed. • Corrugations or ribs of sheets to be sealed at fascia, hips, valleys and ridges using metal mesh, mineral wool or non-combustible material. • Openings fitted with non-combustible ember guards. • Roof to be fully sarked on top of rafter if tiled on top of battens if metal. 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> • Roof should be constructed as shown in Appendix 1 Generic Roof Systems.
VERANDAS, DECKS ETC.	No special construction requirements	As for BAL-19	<ul style="list-style-type: none"> • Enclosed sub-floor space - no special requirement for materials except within 400 mm of ground. • No special requirements for supports or framing. • Decking within 300mm of a glazed element must non-combustible or bushfire resisting timber. • Exposed water or gas pipes to be metal 	<ul style="list-style-type: none"> • Enclosed sub-floor space or non-combustible or bushfire resistant timber supports. • Decking to be non-combustible or bushfire resistant timber. • Verandah separated by a compliant wall to be made of non-combustible materials or Bushfire resisting timbers or line the verandah underside of rafters with 6mm fibro cement sheet. • Balustrade & handrails within 125mm of a glazed element or combustible materials to be non-combustible or bushfire resistant timber. • Exposed water or gas pipes to be metal 	<ul style="list-style-type: none"> • Decking material must not be spaced. • Enclosed sub-floor space or non-combustible supports. • Decking to be non-combustible or • Be tested for bushfire resistance to AS 1530.8.1 • Balustrade & handrails within 125mm of a glazed element or combustible materials to be non-combustible material. • Exposed water or gas pipes to be metal 	Must comply with AS1530.8.2	<ul style="list-style-type: none"> • Verandahs & carports sharing the roof space with the dwelling shall be built as shown in Appendix 1. • Verandahs & carports separated by a compliant wall shall be either; <ul style="list-style-type: none"> ○ Non-combustible materials ○ Timber rafters lined on the underside with 6mm fibro cement sheeting. ○ A system comply with AS1530.8.2 • Decking material must not be spaced. • Enclosed sub-floor space or non-combustible supports. • Decking to be non-combustible or • Be tested for bushfire resistance to AS 1530.8.2 • Balustrade & handrails within 125mm of a glazed element or combustible materials to be non-combustible material. • Exposed water or gas pipes to be metal

Please note that this is a condensed version of the AS 3959 BAL requirements for residential construction and should only be used as a guide and the author takes no responsibility for the accuracy of the document. Use of this document is at your own risk and it is recommended that prior to designing the building you should confirm requirements using AS3959.