AS 3959-2018 COMPLIANCE CHECKLIST - GENERAL CONSTRUCTION REQUIREMENTS

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3.1 GENERAL

This Section specifies general requirements for the construction of buildings for all Bushfire Attack Levels (BALs).
The following sections apply to the construction of your building. Please check the appropriate boxes to indicate how your building complies with the Standard.

3.2 CONSTRUCTION REQUIREMENTS FOR SPECIFIC STRUCTURES

3.2.1 Attached structures and structures sharing a common roof space

Where any part of a garage, carport, veranda, cabana, studio, storage area or similar roofed structure is attached to, or shares a common roof space with, a building required to conform with this Standard, the entire garage, carport, veranda or similar roofed structure shall conform with the construction requirements of this Standard, as applicable to the subject building.
Alternatively, the structure shall be separated from the subject building by a wall that extends to the underside of a non-combustible roof covering, and that conforms with one of the following:

- ☐ The wall shall have an FRL of not less than60/60/60 for loadbearing walls and –/60/60 for non-loadbearing walls when tested from the attached structure side and shall have openings protected as follows:
  - ☐ Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
  - ☐ Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position
  - ☐ Other openings - by construction with an FRL of not less than –/60/– when tested in accordance with AS 1530.4.

    NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this Item.

OR

- ☐ The wall shall be of masonry, earth or masonry-veneer construction with the masonry leaf of not less than 90mm in thickness and shall have openings protected as follows:
  - ☐ Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
  - ☐ Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position.
  - ☐ Other openings - by construction with an FRL of not less than –/60/– when tested in accordance with AS 1530.4.

    NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this Item.

3.2.2 Garages and carports beneath the subject building

Where a garage or carport is beneath a building required to comply with this Standard, it shall conform with the construction requirements of this Standard, as applicable to the subject building.
Alternatively, any construction separating the garage or carport (including walls and flooring systems) from the remainder of the building shall conform with one of the following:

A) The separating construction shall 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 and shall have openings protected in accordance with the following:

- Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
- Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position
- Other openings - by construction with an FRL of not less than –/60/– when tested in accordance with AS 1530.4.

  NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this Item.

OR

B) Where part or all of the separating construction is a wall, the wall need not conform with Item (a) above, provided the wall is of masonry, earth or masonry-veneer construction with the masonry leaf of not less than 90mm in thickness and the wall has openings protected in accordance with the following:

- Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
- Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position.
- Other openings - by construction with an FRL not less than –/60/– when tested in accordance with AS 1530.4.

  NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this item.

3.2.3 Adjacent structures on the subject allotment

Where any garage, carport, or similar roofed structure on the subject allotment is not attached to a building required to conform with this Standard, that structure shall conform with the construction requirements of this Standard.
Alternatively, the adjacent structure shall be separated from the subject building by one of the following:

A distance of not less than 6m from the building required to conform with this Standard. This distance is measured as any of the horizontal straight lines from the adjacent structure to the subject building.

OR

A wall of the building required to conform that extends to the underside of a non- combustible roof covering and has an FRL of not less than 60/60/60 for loadbearing walls and –/60/60 for non-loadbearing walls when tested from the outside. Any openings in the wall shall be protected in accordance with the following:

- Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
- Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position
- Other openings - by construction with an FRL of not less than –/60/– when tested in accordance with AS 1530.4.

  NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this item.

OR

- A wall of the building required to conform that extends to the underside of a non- combustible roof covering and is of masonry, earth or masonry-veneer construction with the masonry leaf of not less than 90mm in thickness. Any openings in the wall shall be protected in accordance with the following:
  - Doorways - by self-closing fire doors with an FRL of –/60/30, conforming with AS 1905.1 and tested in accordance with AS 1530.4.
  - Windows - by fire windows with an FRL of –/60/– when tested in accordance with AS 1530.4 and permanently fixed in the closed position
  - Other openings - by construction with an FRL of not less than –/60/– when tested in accordance with AS 1530.4.

    NOTE: Control and construction joints, subfloor vents, weepholes and penetrations for pipes and conduits need not conform with this item.

3.3 EXTERNAL MOULDINGS

- Unless otherwise required in AS 3959-2018 Clause 3.6.1 and Sections 5 to 9, combustible external mouldings, jointing strips, trims and sealants are to be used for decorative purposes or to cover joints between sheeting material.

3.4 HIGHER LEVELS OF CONSTRUCTION

The construction requirements specified for a particular BAL shall be acceptable for a lower level.

NOTE: For example, if the site has been assessed at BAL-12.5, BAL-12.5 construction is required; however any element or combination of elements contained in BAL-19, BAL-29, BAL-40 and BAL-FZ levels of construction may be used to satisfy the Standard.

3.5 REDUCTION IN CONSTRUCTION REQUIREMENTS DUE TO SHIELDING

- Where an elevation is not exposed to the source of bushfire attack, then the construction requirements for that elevation can reduce to the next lower BAL. However, it shall not reduce to below BAL-12.5.

  An elevation is deemed to be not exposed to the source of bushfire attack if all of the straight lines between that elevation and the source of bushfire attack are obstructed by another part of the same building(see Figure 3.1 of AS3959-2018). However, it shall not reduce to below BAL-12.5.

  The shielding of an elevation shall apply to all the elements of the wall, including openings, but shall not apply to subfloors or roofs.

3.6 VENTS, WEEPHOLES, GAPS AND SCREENING MATERIALS

3.6.1 Vents, weepholes, joints and the like

- All gaps including vents, weepholes and the like shall be screened, except for weepholes to the sills of windows and doors.
- All joints shall be suitably backed with a breathable sarking or mesh, except as permitted by AS 3959-2018 Clause 3.3.
- The maximum allowable aperture size of any mesh or perforated material used as a screen shall be 2mm.

NOTE: Weepholes in sills of windows and doors and those gaps between doors and door jambs, heads or sills (thresholds) are exempt from screening because they do not provide a direct passage for embers to the interior of the building or building cavity.

3.6.2 Gaps to door and window openings

- Where screens are fitted to door openings for ember protection, they shall have a maximum aperture of 2.0mm and be tight fitting to the frame in the closed position.
- Gaps between doors including jambs, heads or sills (thresholds) shall be protected using draught seals and excluders or the like (see Figure 3.2 of AS3959-2018).
- Windows conformant with AS2047 will satisfy the requirements for gap protection. Screens fitted to window openings shall have a maximum aperture of 2.0mm and these shall be tight fitting to the frames.

NOTE: There are no requirements to screen the openable parts of doors for ember protection at the lower BALs, however in many circumstances it may be desirable to screen the opening for insect protection. In such circumstances, where the insect screen is fitted internally, such screens may be considered as a door furnishing and the use of non-metallic mesh permissible, provided the screening system is fitted internally and wholly protected by the closed door.

3.7 BUSHFIRE SHUTTERS

Bushfire shutters shall:

- Protect the entire window assembly including framing, glazing, sash and sill;
- Protect the entire door assembly including framing, glazing, sill and hardware;
- Consist of materials specified in AS 3959-2018 Clauses 5.5.1, 6.5.1, 7.5.1, 8.5.1 and 9.5.1 for the relevant BAL;
- Be fixed to the building and be non-removable;
- Be capable of being closed manually from either inside or outside or motorised shutter systems, where they are not reliant on mains power to close;

  NOTE: If power-assisted shutter systems are used then that system is powered with continuous back-up energy such as a battery system.
- When in the closed position, have no gap greater than 2mm between the shutter and the wall, frame or sill; and
- Where perforated, have uniformly distributed perforations with a maximum aperture of 2mm and a perforated area no greater than 20% of the shutter.

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.

3.8 TESTING OF MATERIALS, ELEMENTS OF CONSTRUCTION AND SYSTEMS TO THE AS1530.8 SERIES

Unless otherwise specified, elements of construction and systems satisfy this Standard when tested in accordance with the AS 1530.8 series for the relevant BAL level and Crib Class in Table 3.2 of AS3959-2018.

Elements of construction or systems tested in accordance with AS1530.8.1-2007 with Crib Class A prior to the issue of this Standard are acceptable.

Where any element of construction or system satisfies the test criteria in the AS 1530.8 series without screening for ember protection, the requirements of this Standard for screening of openable parts of windows shall still apply.

Where a window protected with a shutter satisfies the test criteria of the AS 1530.8 series, the additional requirements of this Standard for screening of openable parts of windows do not apply.

NOTE: The ember protection function of tested shutter has been verified by the testing.

3.9 GLAZING

Glazing requirements shall be in accordance with Sections 5 to 9 of this standard.

Notes:

1. Where double-glazed assemblies are used, the glazing requirements are provided in this Standard apply to the external face of the glazed assembly only
2. Refer to AS 1288 for and explanation of the terminologies used to describe various types of glass in this Standard

3.10 SARKING

- Where sarking is required, the flammability index shall not exceed five when tested to AS1530.2.

NOTE: Sarking material is a principle component used to control condensation and is used for energy efficiency purposes under the NCC. It may be vapour permeable or impermeable dependant on its location within the structure. Seek independent advice regarding selection of sarking prior to installation.

3.11 TIMBER LOG WALLS

Where the thickness of a timber log wall is specified, two criteria are nominated, as follows:

a) The nominal overall thickness is the overall thickness of the wall.

b) The minimum thickness is the thickness of the wall at the interface of two logs in the wall.

For most log profiles, the thickness of the log at the interface with an adjacent log is less than the overall thickness of the wall.