



BUILDING ELEMENTS IN THE FLAME ZONE

This Fact Sheet clarifies the requirements of the NSW Rural Fire Service (NSW RFS) for the use of building elements within the flame zone.

Section A3.4 (c) of Planning for Bush Fire Protection Addendum Appendix 3 contains a definition of flame zone as 'determined by the calculated distance at which the radiant heat received by the proposed building exceeds 40kW/m^2 or calculated by the point of potential flame contact, whichever occurs first'.

In NSW, the National Construction Code Series 2015 (NCC) Ancillary Provisions Part G5 references AS3959-2009 Construction of buildings in bushfire-prone areas advising that for Class 2 or Class 3 building, or a Class 10a building or deck associated with a Class 2 or 3 building in a designated bushfire prone area compliance with AS3959 (deemed-to-satisfy) will achieve compliance with Part G5.

The NCC also establishes Ancillary Provisions (Volumes One Part G5 Construction in Bushfire Prone Areas) where a Building Solution is proposed to comply with the deemed-to-satisfy provisions; Performance Requirements GP5.1 is satisfied by complying with G5.1 and G5.2.

The deemed to satisfy provisions of the NCC G5.2 excludes AS3959 Section 9 Construction for BAL-FZ as an acceptable solution. BAL FZ development applications should be referred to the NSW RFS.

To satisfy the performance requirement the following applies:

- a. AS3959, except for Section 9 Construction for BAL FZ. Buildings subject to BAL FZ must comply with specific conditions of development consent for construction at this level; or
- b. the requirements above as modified by the development consent following consultation with the RFS under Section 79BA of the Environmental Planning and Assessment Act 1979; or
- c. the requirements of (a) as modified by development consent with a bushfire safety authority under Section 100b of the Rural Fires Act 1997 for the purposes of integrated development

Although Section 9 of AS3959 2009 is excluded, it nonetheless should be used as a basis for assessment of compliance for construction in the flame zone.

Further, Section A3.4 (d) of Planning for Bush Fire Protection 2006 Addendum Appendix 3 states that 'for building elements subject to radiant heat flux of greater than 29kW/m^2 , the use of exposed timber is generally not suitable without specific testing in accordance with suitable protocols'.

Where there is potential for materials of construction to ignite as a result of bush fire attack, the proposed building solution generally fails the performance criteria of Planning for Bush Fire Protection 2006.

For developments in the flame zone (as determined above), systems complying with AS3959 Section 9 will be considered, except that there is to be no flaming of the specimen unless:

1. the situation is infill development and specifically alterations and additions,
2. the outcome as the result of the alterations and additions is positive in regards to bush fire safety (i.e. a better outcome is achieved),
3. the applicants are referred to the link that has the Bush Fire Survival Plan and

engaged in the bush fire issues associated with their situation, and

4. the flaming is not considered to add to the existing overall bush fire risk of the development.

Materials that allow flaming can be problematic and are not generally supported by the NSW RFS for the following reasons:

- Flaming materials increase the exposure of other elements of construction and adjoining structure to flame contact and associated radiant heat and embers after a bush fire front has passed.
- Flaming materials will potentially increase the exposure of occupants of building to radiant heat, direct flame contact, smoke and embers after a bush fire front has passed.

This increase in exposure can contribute to the risk of loss of life and compromise the ability of residents to defend their property and egress from the building once the bush fire front has passed.

In addition it can reduce the capacity of occupants to make safe (and effective) decisions about their safety.

For these reasons, the NSW RFS does not generally support external elements on a building within the flame zone that would flame and/or combust, except as discussed above.

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