EMERGENCY RECOVERY VICTORIA

New or Reconstruction in Bushfire Prone Areas

AS 3959 and the NASH standard for Steel Framed Housing

Introduction and Purpose

Dwellings and most buildings in **bushfire prone areas** are required to be constructed consistent with the **National Construction Code (NCC)** of Australia. That code relies upon and applies a range of relevant standards.

Two standards that are particularly relevant, in the context of improving resilience of structures to bushfire attack, are **Australian Standard (AS) 3959: 2018—Construction of Buildings in Bushfire Prone Areas** and the **National Association of Steel-Framed Housing (NASH)—Standard for Steel Framed Construction in Bushfire prone Areas**.

They are both listed as deemed-to-satisfy standards in the NCC.

This note provides a brief overview of the main differences between these standards – particularly in the context of post bushfire reconstruction, where fire impacted communities may potentially be exposed to these standards for the first time whilst considering their best options for rebuilding.

AS 3959—Construction of Buildings in Bushfire Prone Areas

AS 3959 has two key components:

- It sets out the methods to be used to assess the exposure of a proposed building location to bushfire attack – leading to the determination of the Bushfire Attack Level – or BAL. These are in the main, applied through State planning and building systems that require a BAL level to be determined.

  There are five BAL categories (BAL 12.5, 19, 29, 40 and Flame Zone) each reflecting a level of exposure to radiant heat, flame and ember attack.

- AS 3959 sets out a range of construction requirements, materials choices and construction methods relevant to different BAL levels. AS 3959 seeks to achieve increasing levels of resistance and resilience to the impact of bushfire attack as the predicted exposure increases – e.g., at higher BAL levels.

  The overall premise is to achieve a well-sealed external building cladding that resists the ingress of embers or flame into the building cavities and the structure itself.

NASH—Standard for Steel Framed Construction in Bushfire Prone Areas

The NASH standard is based on non-combustible construction including steel framing, steel roof cladding and non-combustible wall systems for residential and low-rise buildings in bushfire prone areas. This means that both the external claddings, framing details and the building cavities are made from non-combustible materials.

The NASH standard has more comprehensive prescriptions around appropriate use of external materials and the design of safe passage into and from the house. It gives two solutions, BALs 12.5-40 and BAL Flame Zone (FZ). The BAL is determined using AS 3959.

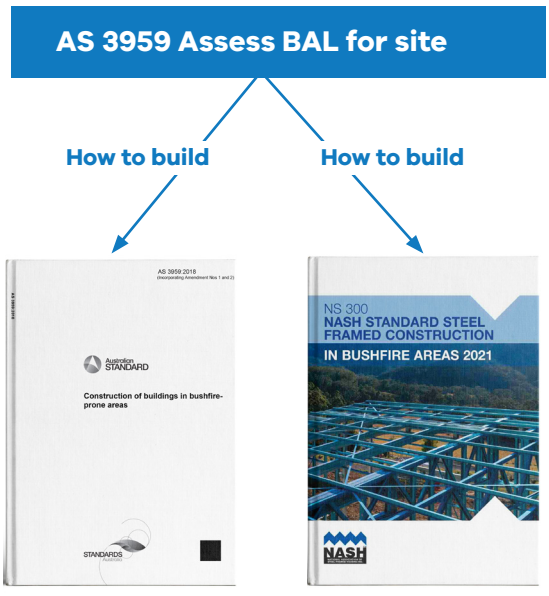
Achieving Best Resilience

Excellent building outcomes can be achieved via both standards. A NASH construction using non-combustible cladding, framing and wall systems does offer increased design redundancy and resilience, in that if the external cladding is damaged during a fire event, the wall structure itself and framing will not catch fire.

In comparison, a structure built using AS 3959 is largely reliant on the outer cladding of the structure being tight fitting and remaining intact. As buildings age and experience minor alterations and maintenance, these design redundancies offered by the NASH standard can help to maintain bushfire resistance throughout the life of the building.

Irrespective of the standard to be relied on and the construction method, quality construction and attention to detail and ongoing maintenance is critical in achieving buildings that will have good resilience to bushfire attack.

National Construction Code (NCC)



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