STEEL FRAMING: PERFECT IN BUSHFIRE PRONE AREAS

AUSTRALIA IS NO STRANGER TO BUSHFIRES. HOWEVER, THE SUMMER OF 2019-2020 PROVED TO BE UNPRECEDENTED IN MANY WAYS. BY MID-FEBRUARY 2020, THOUSANDS OF BUSHFIRES ACROSS THE COUNTRY HAD CLAIMED THE LIVES OF OVER 30 PEOPLE AND A BILLION ANIMALS, AND BURNT AROUND 20 MILLION HECTARES OF LAND.

WITH APPROXIMATELY 3,000 HOMES AND SEVERAL THOUSAND OTHER BUILDINGS DESTROYED ACROSS THE COUNTRY, THE REBUILDING WILL INEVITABLY REQUIRE CAREFUL AND CONSIDERED BUSHFIRE DESIGN SOLUTIONS, SUCH AS NON-COMBUSTIBLE CONSTRUCTION USING STEEL FRAMING.

WHY STEEL FRAMED CONSTRUCTION?

According to Ken Watson (Executive Director, National Association of Steel-Framed Housing), "Put simply, steel will not ignite, nor does it burn."

"No home can be completely fire safe, but there are a number of ways you can plan for a house that has high fire-resistance. Your choice of building materials is very important. The right materials can significantly delay, minimise or prevent damage to your house. Should damage occur, the materials of construction could mean the difference between repairing your home, or having to rebuild it completely."

"A roof of steel sheeting fixed to a steel roof frame simply cannot burn."

Apart from its fire credentials, cold-formed steel framing has many practical advantages for designers, builders and homeowners. Steel is strong and stable, resists biological attack from termites, borers and fungi and is outstandingly durable. It is light and easy to handle on site and is the ideal framework to support a wide range of claddings, linings and fixtures.

NATIONAL CONSTRUCTION CODE

Houses, together with associated garages and sheds, that are located in bushfire prone areas must be designed and constructed to reduce the risk of ignition from a bushfire.

State and territory governments declare bushfire prone land within their jurisdictions and new dwellings on such land must be constructed to resist bushfire attack.

The National Construction Code contains two Deemed-to-Satisfy solutions for construction in designated bushfire areas: AS 3959 ***Construction of buildings in bushfire-prone areas*** and the NASH Standard *Steel framed construction in bushfire areas*. Either standard can be used in all states and territories.

According to Watson, it is vital that these standards are correctly applied during the rebuilding efforts that will necessarily follow the 2019-2020 bushfire season. "NASH is working to support designers, engineers and builders to ensure that steel framed construction is considered as one of the solutions in the rebuilding process," said Watson.

THE NASH BUSHFIRE STANDARD

The NASH Standard is based on non-combustible construction using steel framing and non-combustible claddings. It was developed following full-scale bushfire simulation complemented by small-scale tests and the application of fire engineering principles.

All solutions in the NASH Bushfire Standard have been designed or tested to be robust in realistic bushfire conditions, with the involvement of several independent organisations including the CSIRO and NSW Rural Fire Service. The extensive development program undertaken by NASH provided the Australian Building Codes Board with the confidence to reference the Standard as a Deemed-to-Satisfy solution in 2014.

The Standard outlines two solutions, one covering lower Bushfire Attack Levels (BALs) (BAL-12.5, BAL-19, BAL-29 and BAL-40), and a separate solution for flame zone (BAL-FZ), depending on the BAL determined for the site by the local Building Authority.

Construction using the NASH Bushfire Standard provides for high-performance, cost-effective construction using traditional construction materials, methods and workmanship.

It offers the following benefits and savings:

- Simpler design with a single solution up to BAL-40 and another for BAL-FZ
- Windows and doors with appropriate rating for the relevant BAL
- BAL-FZ roof solution uses standard steel roof sheeting with foil-backed insulation blanket, which is reliable and low cost
- BAL 12.5-40 roof solution does not require additional ember protection at ridges, eaves and junctions
- Steel fascia can be used for spans up to 1,200mm for all BAL levels
- No need to provide ember protection to brick weep holes and subfloor vents
- Normal steel framed building and cladding practices can be adopted in bushfire areas
- The NASH Standard covers all forms of non-combustible wall claddings, such as steel, brick, masonry, AAC, fibre cement, and so on
- Reduced damage impacts for faster rebuilding and community recovery

BLUESCOPE PRODUCTS

BlueScope has developed technical information, based on the NASH Standard, to help with the application of BlueScope products in bushfire prone areas. BlueScope's guide outlines the products to be used for each of the NASH solutions, BAL-12.5 to BAL-40 and BAL-FZ.

> **“Your choice of building materials is very important. The right materials can significantly delay, minimise or prevent damage to your house. Should damage occur, the materials of construction could mean the difference between repairing your home, or having to rebuild it completely.”**

FURTHER INFORMATION

The NASH Standard *Steel framed construction in bushfire areas* can be purchased via the NASH website: https://www.nash.asn.au

BlueScope’s *Steel Product Solutions for Bushfire Areas: NASH Bushfire Standard* can be downloaded via https://cdn.dcs.bluescope.com.au/download/bluescope-steel-product-solutions-for-bushfire-areas-nash-bushfire-standard