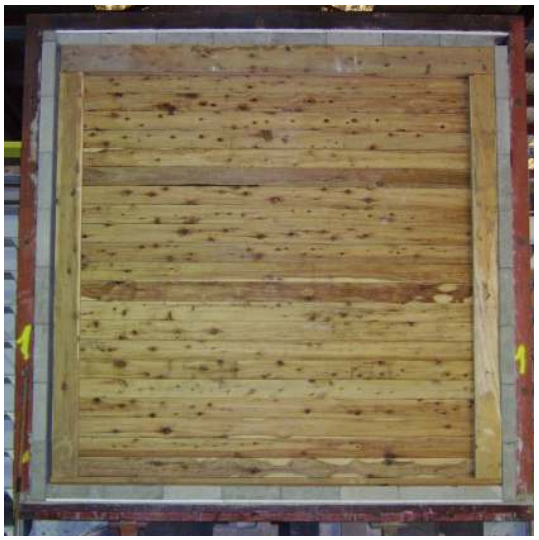
Building in Bushfire- Prone Areas with Timber – Fact or Fiction?

FACT!

At Appalachian Log Homes we have spent the past 8 years researching and developing Timber Homes for Bushfire Prone Areas. Now we have the *First* timber wall system to be certified to AS1530.8.2 for use in Flame Zone areas of Bushfire–Prone land.

Our new wall system, composed of 90mm thick flat both sides log profile in Australian White Cypress and using heavy timber framing, has been tested to the stringent requirements of AS 1530.8.2 and certified by the NATA Accredited Bodycote Warrington Fire (currently the only testing laboratory to have gained their accreditation for the new bushfire testing standards AS1530.8.1 and AS1530.8.2). This log wall system can be used in combination with our extensive range of standard and custom designed homes and commercial buildings to create a stunning timber home in bushfire prone areas.



Panel Ready for testing

- ***30 Minutes of Full Flame contact (While a bushfire takes only a few minutes to pass through)***
- ***Temperature of up to 1100K on fireside (higher than average flame temperature)***
- ✓ ***Self–extinguished minutes after removal from furnace (no intervention required, so safe to evacuate after bushfire passes)***
- ✓ ***Minimal increase of internal wall temperatures for full duration of test (insulation properties of timber excellent)***

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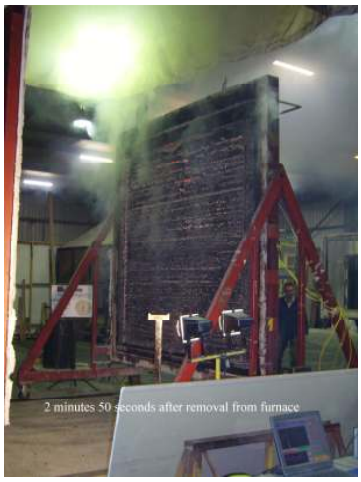
Testing to AS 1530.8.2 - Results

Time = 30 mins

Time = 30 mins 8 secs

Time = 30 mins 18 secs



Time = 32 mins 50 secs

After 30 minutes of full flame contact at temperatures reaching 1100K, the 3m x 3m panel was removed from against the furnace. These pictures show how the panel self extinguishes very quickly and after just under 3 minutes there is no substantial flaming on the panel. On the non-fire side of the panel, surface temperatures remained relatively constant for 30 minutes then increased by a few degrees over the ensuing 60 minutes of the test.

Result - Certified to AS 1530.8.2-2007 - Methods for fire tests on building materials, components and structures - Tests on elements of construction for buildings exposed to simulated bushfire attack - Large flaming sources

Timber – The Ultimate Green Building Material

With the increasing threat of climate change there is a need to use renewable and green materials such as timber for house construction. While energy conservation is the focus of recent changes to the BCA to address building sustainability, as buildings become more energy efficient, the energy required to make them becomes increasingly more significant. Current research has indicated that the embodied energy used in residential building could be up to 40% of the life-cycle energy used. Steel has been reported as generating 33% more greenhouse gas and concrete 80% more than timber when utilized as framing. Timber is also known as a means of storing carbon, as opposed to many other building materials.

Changes in the Australian climate are contributing to the increase in extreme bushfire events in Australia, and current standards for the construction of homes in bushfire prone areas do not consider the use of timber as a suitable material in high to extreme bushfire risk areas. Less environmentally advantageous materials, such as steel and masonry, are prescribed in the deemed-to-satisfy provisions of the BCA (AS 3959 - Construction of buildings in bushfire-prone areas). A new test standard, namely AS 1530.8, has been drafted recently to set a special test protocol emulating Australian bushfire conditions to provide an assessment of the performance of building elements against bushfire threat.

Heavy timber has an inherent resistance to fire, and is reasonably well researched; however our understanding of the bush-fire performance of solid timber wall construction is still very limited. A limited amount of research has already been carried out in the area of fire resistance of solid timber walls along with several field tests confirming their fire resistance. This testing confirms that timber can provide the required fire resistance to withstand Australian bushfires.