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Bushfire Preparedness in Australia & New Zealand

Zurich Risk Engineering Australia & New Zealand

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Each year in the warmer months, bushfires are a natural part of the landscape in Australia and a real threat to property and lives. However, there are some steps that people in bushfire prone areas can take to better prepare for the bushfires and reduce their exposure and the potential losses.

Being prepared for bushfires includes having procedures or plans for evacuation of personnel with clearly defined trigger points. The protocols for the decision to evacuate, the communications and the coordination of the evacuation need to be formalised beforehand. Bushfire preparation plans should also include measures to protect your assets including buildings and equipment.

Property can be lost to bushfires in several ways. Radiant heat from the bushfire flames can ignite combustible material on or near the buildings, and direct flames can ignite combustible elements on the buildings. However, the most common means of loss of buildings in bushfires is from ember attack in advance of the fire front. Embers have been known to travel many kilometres. The embers find their way into the building through small gaps and start to ignite combustible material, usually fanned by hot dry winds. So the bushfire flames do not have to directly reach the buildings to ignite them. A high level of protection against ember attack should be the minimum that is provided to buildings in bushfire prone areas. If the buildings are located close to the bush with thick vegetation or steep slopes up to the buildings, then further protection should be considered such as external sprinkler systems.

Preparation for Bushfire Threats

Building Surroundings:

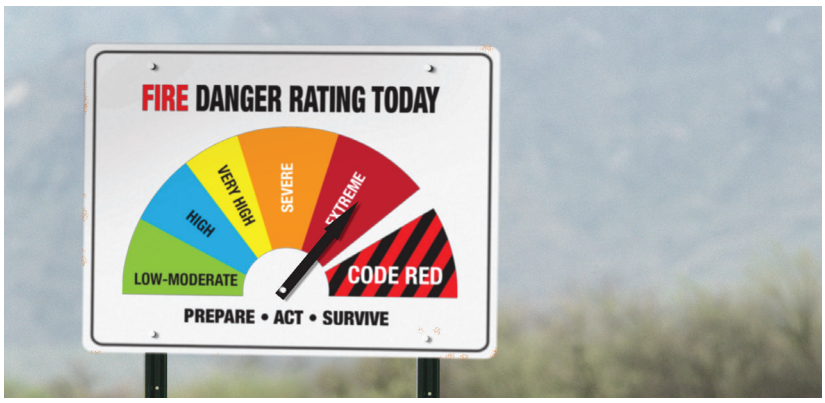
- Establish an area clear of vegetation around the buildings ("asset protection zones" / fire breaks).
- Prune branches overhanging the building and the vegetation cleared area. *Note for removal or heavy pruning of trees the local council should be contacted for approval.*
- Prune branches that could blow against power lines in strong winds.
- Remove loose bark on trees close to buildings.
- Remove from site or relocate idle combustible material stored close to the buildings including outdoor furniture.
- Remove light sheet material such as shade-cloth that could be susceptible to ember attack.
- Ensure water tanks are full leading into bushfire season or threats.
- Ensure hoses can reach all parts of the yard.
- Store fuel in fire-resistive (e.g. concrete or brick) enclosures away from the main buildings.
- Ensure there is clear access for the fire fighters to assist and protect your property and for personnel evacuation.

Buildings:

- Clear leaves and branch litter from roof guttering.
- Ensure roof gutter guards are non-combustible.
- Block downpipes with sandbags or equivalent and fill gutters with water.
- Block or seal over building weep holes (temporarily for the duration of the fire threat).
- Block or seal holes in the roof eaves temporarily.
- Close over, seal or block air vents and penetrations in walls or roofs, and close louvre windows such that they cannot blow open.
- Block chimney outlets.
- Identify unnecessary gaps in the building envelope and seal them over, including under doors, around doorways and windows with flexible sealant or weather/draught strips.
- Replace any rotten or fibrous timber cladding on the external walls.
- Fill up the bath with water in case the water supply is lost.
- Fine gauge mesh or screens of metal can be fitted to windows and doors.
- Remove idle combustible material from subfloor spaces.

Improving Building Design for Bushfire Exposure:

- Build with fire resistive (e.g. concrete, masonry), non-combustible (e.g. steel or aluminium) or low combustibility materials where practicable, including for the structure, cladding, fascia, balconies, decks, latticework, screens and fences near or attached to the buildings.
- Replace glass doors, windows and skylights with toughened or laminated, bushfire rated windows
- Install fire shutters on windows and doors facing the potential bushfire front where appropriate.
- Install low combustibility sarking below roofing where accessible or during roof replacement.
- Install tanks in elevated positions to provide water pressure when towns water pressure is low.
- Consider installing wall, window or roof-wetting sprinkler systems, powered by a small pump (preferably diesel /fuel), where considered appropriate.
- Consider installing fire resistive walls between the potential bushfire direction of approach and the buildings as radiant heat barriers, where appropriate.



Emergency Kit and Supplies:

- Bottles of potable water (in case water supply is cut off)
- Batteries for radio, torches and other appliances
- Solar powered or wind-up rechargers for mobile communication devices.
- First aid kit
- Camping stove with fuel for boiling water and cooking food if power is lost.
- Stock of food that does not need refrigeration.
- Stock of any required medication or prescriptions.
- Change of clothes and a set of warmer clothes.

Important and Valuable Items:

- Birth and marriage certificates
- Insurance policies – property, life, etc.
- Valuable small personal effects
- Irreplaceable small items

Fire Services Authorities

Note that many of the fire authorities have interactive maps showing locations of fires, bushfire news and alerts on their websites. These fire services authorities also provide some very good guides and publications for preparing and building in bush fire prone areas.

Australia

- Rural Fire Services (NSW) www.rfs.nsw.gov.au/
- Twitter - @CFA_Updates www.twitter.com/nswrfs
- Fire & Rescue NSW www.fire.nsw.gov.au/
- Country Fire Authority (Victoria) www.cfa.vic.gov.au/ https://twitter.com/CFA_Updates @CFA_Updates
- Department of Fire & Emergency Services (WA) www.dfes.wa.gov.au
- Queensland Fire & Rescue www.fire.qld.gov.au/
- Rural Fire Service (Queensland) https://ruralfire.qld.gov.au
- South Australia Country Fire Service www.cfs.sa.gov.au
- Tasmania Fire Service www.fire.tas.gov.au/

New Zealand

- National Rural Fire Authority (New Zealand) www.nrfa.org.nz/
- New Zealand Fire Service www.fire.org.nz/

State Emergency Services

The following State and Territory Emergency Services may also have alerts and warnings:

- Australian Capital Territory State Emergency Service http://esa.act.gov.au/actses/
- Dept of Fire & Emergency Services (WA) www.dfes.wa.gov.au/Pages/default.aspx
- New South Wales State Emergency Service www.ses.nsw.gov.au/
- Northern Territory SES www.pfes.nt.gov.au/
- Queensland State Emergency Service www.emergency.qld.gov.au/ses/
- Queensland Government Disaster Management www.disaster.qld.gov.au/
- South Australian State Emergency Service www.ses.sa.gov.au/
- Tasmanian State Emergency Service www.ses.tas.gov.au/
- Vic Emergency http://emergency.vic.gov.au/
- Victorian State Emergency Service www.ses.vic.gov.au/
- State Emergency Service Telephone **132 500** (from anywhere in Australia)
- New Zealand Civil Defence www.civildefence.govt.nz

Bushfire Consultants

Fire Protection Authority Australia search facility: www.fpaa.com.au/bpad

Standards and Guides

Standards and Legislation

- Building Code of Australia (BCA)
- AS 3959-2009 Construction of buildings in bushfire-prone areas
- And the various Amendments to AS 3959-2009
- HB 330-2009 Living in bushfire-prone areas
- AS 5414-2012 Bushfire water spray systems
- Legislation Victoria 18/2009 Act - Bushfires Royal Commission (Report) Act 2009
- Legislation Victoria 139/2009 Regulation - Building Amendment (Private Bushfire Shelter Construction) Interim Regulations 2009
- Legislation Victoria 15/2010 Regulation - Building Amendment (Bushfire Construction - Short-term Requirements) Regulations 2010

Guides and Publications

NSW Rural Fire Services > Publications
www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=192

NSW Rural Fire Services > Publications > Building in Bush Fire Prone Area > Planning for Bush Fire Protection
www.rfs.nsw.gov.au/dsp_content.cfm?CAT_ID=900

There are various useful documents including the "Best Practice Guide to Bush Fire Protection"

Department of Fire & Emergency Services (WA)
www.dfes.wa.gov.au/safetyinformation/fire/bushfire/pages/publications.aspx

Government of Western Australia, Department of Commerce, Building Commission > Building in Bushfire Prone Areas
www.buildingcommission.wa.gov.au/consumers/building-in-bushfire-areas

Victoria Building Authority – Building Commission – Bushfire Information
www.buildingcommission.com.au/bushfire-information/bushire-information-for-consumers/pages/bushfire-building-regulations-2011

Further Information:

Zurich Risk Engineering Australia & New Zealand
www.risk-engineering.com

ZU21979 - V2 11/15 - LBAT-008164

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