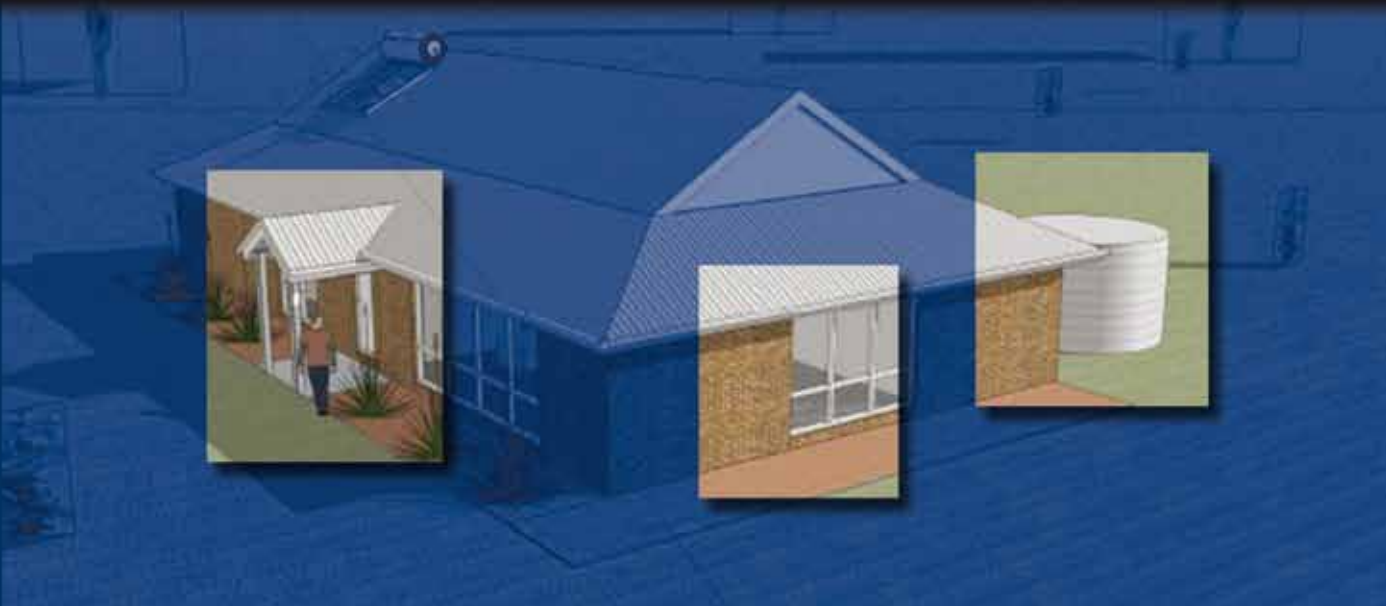


A guide to building in Victoria after the bushfires

In response to Victoria's devastating bushfires, the Victorian Government has introduced a new residential building standard. This means people can now start rebuilding their homes and communities without compromising safety.



The new residential building standard, combined with new planning measures, will come into effect in March 2009 as an amendment to the *Victorian Building Regulations 2006*.

Contents:

Nothing will be quite the same again	3
Greater protection across the State	4
How the new building standard came about	4
The building process	5-7
Greater protection for people and buildings	8
What my home might look like	10-11
Buildings that must comply	12
Local Council phone numbers	13
Questions & answers	14-15



Bushfire Building
Advice Line
 **1300 360 320**
 Building Commission (9am – 5pm Monday to Friday)



Nothing will be quite the same again

The February 2009 fires in Victoria have re-written the rules about bushfires. Many of the fires registered heat above 1,200 degrees celsius and wind speeds of more than 120 kmph, leaving very little in their wake. This is unprecedented.

As a community we have quickly responded to the needs of the many thousands of people who have been displaced by this ordeal. The Victorian Government understands the strong desire for bushfire affected people to start the rebuilding process, to move back into their communities and re-assemble their lives.

A major part of this is around your home.

The Victorian Government has announced a rebuild that's smarter and safer, through the early implementation of the new residential building standard.

The move to implement this new Australian building standard has not compromised safety or quality of the decision-making process. Extensive research, expertise from fire and building authorities, public consultation around Australia have all been part of this new standard, so that homes are better protected in bushfire prone areas.

The Royal Commission announced by the Victorian Government will consider longer term issues including building methods and materials. However, the Victorian Government felt it was imperative to improve residential building standards immediately.

This Guide explains the new residential building standard and what it will mean to you and your community. It explains how the re-build process will work and it will help you converse with your builder and local Council as you prepare to rebuild.

As with the previous standard, the costs of building will depend on the type of construction and your property's level of bushfire risk. However, with a more finely tuned risk assessment, the new residential building standard focuses on construction requirements to address the level of exposure that a building could face under bushfire attack. It provides homeowners with considerable choice in the type of design, construction and location of their homes and takes into account popular construction methods.

While the new residential building standard will improve protection for new homes, as well as alterations and additions built in Victoria's bushfire prone areas, it is important to note that it does not guarantee a building will survive a fire due to the unpredictable and often devastating nature of bushfires.

It will be important to ensure that the Victorian building industry is also fully aware of the new residential building standard. The Building Commission will be running free industry and consumer seminars from March 2009 throughout Victoria to explain the changes. Details will appear in daily and local papers, or ring the **Bushfire Building Advice Line on 1300 360 320** for seminar dates in your area.

Greater protection across the State

The new residential building standard covers all new buildings, alterations and additions in the State of Victoria, from homes on the fringes of the metropolitan area to those adjacent to our state forests, to communities devastated by the February 2009 fires.

We have recently experienced fires burning close to built up areas, like Upwey and Belgrave. Homes were lost in Narre Warren South, and the Maiden Gully fires were within five kilometres of the centre of Bendigo. All would require assessment under the new residential building standard.

The threat of intense heat fires, coupled with vegetation in close proximity to homes and other factors outlined in this guide means that all homes will now require bushfire attack assessment. Local Councils may provide guidance in relation to areas that may have a zoned assessment.

As an example, inner suburban homes that abut a maintained park are excluded and automatically assessed as a low fire risk.

How the new building standard came about

After the Canberra bushfires in 2003, the Australian Standard relating to building was extensively reviewed with the intention of introducing a new Australian Standard (AS 3959) nationally. In the wake of the devastating February 2009 bushfires, the Victorian Government decided to act immediately to ensure that new homes, alterations and additions in Victoria are designed, constructed and located with greater bushfire protection.

While its introduction is an immediate response by the Victorian Government, this standard is the culmination of a lengthy process of expert research and consultation to ensure better fire protection of homes at risk from bushfire.

It has been through a formal Regulatory Impact Statement process, which involved industry and public scrutiny of, and input to, the standard. There has been a full public consultation process, with submissions from industry, as well as high levels of home fire safety and scientific research, with extensive review by bushfire experts including the Country Fire Authority and the Australasian Fire Authorities Council. All public submissions on the amendments supported revising the previous standard.

The decision to introduce the new Australian building standard has followed a thorough process, which was important in getting the right outcome to ensure homes and people are better protected from bushfires in future.

Under the previous standard, there were four levels of risk assessment. The new standard assessment adopts six levels of risk. The more scientific risk assessment contained in the new standard determines the likely levels of heat exposure and then stipulates the appropriate construction method to improve the ability of a building to withstand bushfire attack, and importantly, protect occupants and the building.

The building process

Step 1: the design phase

If you intend to rebuild, renovate or significantly repair a home in an area subject to bushfire threat the process will be no different to any other standard but you will need to take the new building standard into consideration.

Your building designer, architect or builder can advise you on how best to achieve this. They will consider your design by looking at the appropriate bushfire attack level (BAL) and then apply the construction methods most appropriate to meet your needs. The BAL and construction methods are explained on pages 10 and 11.

Some sites will be assessed on paper, while other, high risk sites will require a site visit. The Building Commission may also be involved in the verification of the site assessment process at the higher risk levels.

If you want to owner-build you should contact your building surveyor for advice, or phone the owner-builder section of the Building Commission.

When the design plans are complete, the next step is to appoint a builder.

Step 2: appointing a builder

One of the most important steps is ensuring your builder is a Registered Building Practitioner (RBP). This information is available at www.buildingcommission.com.au by clicking on the RBP section or you can phone the Building Practitioners Board on 1300 360 320.

For most building or renovating work you will talk directly to the builder. Whatever the case, you must be able to deal with the same person for the duration of the project, so make sure you're satisfied and take the following precautions:

- Obtain at least three quotes
- Check examples of the builder's work and ask for references
- Before you sign the building contract, read it thoroughly and ensure that you understand it
- Check that the builder has an insurance policy covering the building work – it will be listed in the contract
- Importantly, ask if your builder has obtained advice on the new building standard.



Finding a Registered Building Practitioner

To find a Registered Building Practitioner, including a Building Surveyor, go to the 'Find an RBP' section of the Building Commission website, www.buildingcommission.com.au or call the Building Practitioners Board on 1300 360 320

Step 3: determine whether a building permit is needed

Once you have appointed your builder you will need to determine whether the work requires a building permit.

Most building work requires a building permit to be issued before work can commence, however some minor structures such as sheds less than 10 m² are exempt.

Building permits are issued by your Council's Municipal Building Surveyor or a Private Building Surveyor, who ensures your plans comply with the new building standard.

Step 4: applying for a building permit

Applying for the building permit is easy. Simply:

- Apply for the building permit through your Council's Municipal Building Surveyor or a Private Building Surveyor
- Check the competency and experience of the building surveyor and the fees applicable for issuing the permit and carrying out the inspections
- Then pay the appropriate fee, and submit at least 3 copies of drawings, specifications, and allotment plans with a completed application form.

There are some minor types of building work that are exempt from the issuing of a building permit, such as:

- Pergolas associated with houses with unroofed post and beam structures
- Garden sheds with a floor area of less than 10 square metres
- Repair work done for maintenance purposes, for example replacing rotted weatherboards.

Not all minor work is exempt from a building permit, so do your research and contact your local Council's Municipal Building Surveyor or a Private Building Surveyor.

Step 5: the rebuild process

Your builder (or architect if you have appointed one) will oversee the entire building process with the information listed to comply on your building permit. The building permit will also specify a period of time in which building work must commence and finish.

As part of the process, the building surveyor who issued the building permit must carry out the building inspections and issue an occupancy permit or a certificate of final inspection on completion of work.

Throughout the building process, there are things you can do to ensure it is rewarding:

- Establish a good working relationship with your builder
- Understand the costs involved and those for any subsequent variations
- Make sure variations are documented, understood and signed before work starts
- Familiarise yourself with and understand the schedule of progress payments.

Step 6: occupancy permits

Your building permit will state whether you require an occupancy permit or a certificate of final inspection prior to you moving into your home.

The occupancy permit is issued by the building surveyor overseeing your building work, ensuring it complies with the new building standard.

An occupancy permit is issued when a building is 'suitable to occupy' from a safety point of view. It is issued when every item that can affect safety is in place and fully operational, such as the power, water and gas supply; smoke alarms; handrails and balustrades. It will signify that your home now meets the new building standard and is designed, constructed and located with greater fire protection.

Important Information

You will need to have the state of your property assessed, taking into consideration the professional advice about what needs to be done to existing structures. While existing structures may appear to be habitable, an inspection report may need to be carried out by your Council's Municipal Building Surveyor or Building Inspector.

Also, if you were insured, check with your insurance provider if it is OK for you to proceed with the building process.

Greater protection for people and buildings

The aim of the new building standard is to improve the ability of buildings to withstand a bushfire attack. This will provide greater protection for the occupants who may be sheltering in it while the fire front passes and it also increases the chances of the building surviving.

A great deal of scientific modelling has gone into the new building standard. The chart below outlines how the baseline data, which is defined as a Bushfire Attack Level (BAL) determines the type of construction required.

Bushfire Attack Levels and corresponding construction sections within the new building standard

Bushfire Attack level (BAL)	Description of predicted bushfire attack and levels of exposure
BAL – LOW	There is insufficient risk to warrant specific construction requirements
BAL – 12.5	Ember attack
BAL – 19	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux between 12.5 and 19 kW m ²
BAL – 29	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux between 19 and 29 kW m ²
BAL – 40	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames
BAL – FZ	Direct exposure to flames from fire front in addition to heat flux and ember attack

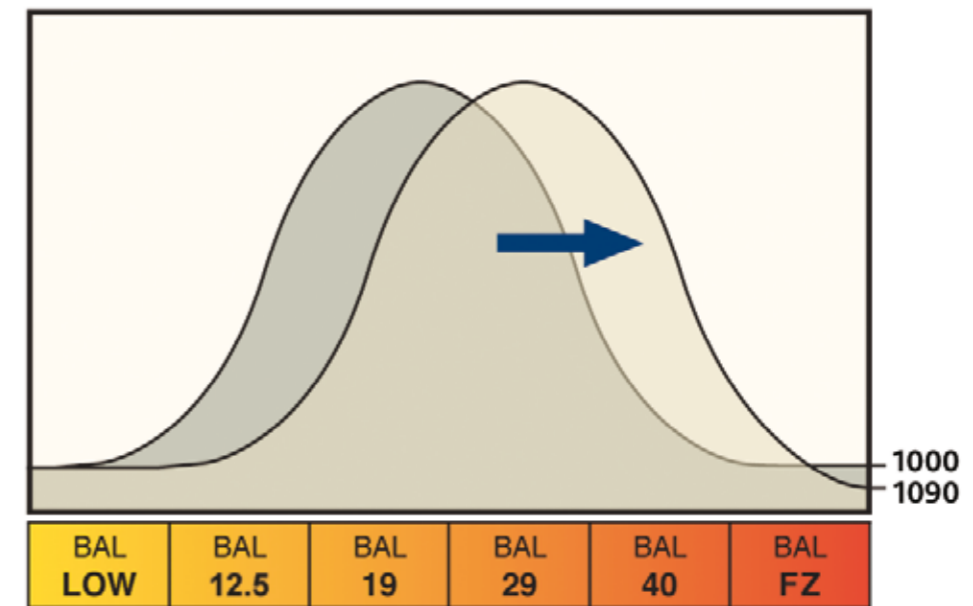
The BAL takes into consideration a number of factors including the Fire Danger Index, the slope of the land, types of surrounding vegetation and its proximity to any building.

The Fire Danger Index is a measure of the associated fire weather and the probability of a bushfire starting. It also includes its rate of spread, intensity and difficulty of suppression according to various combinations of temperature, relative humidity, wind speed and estimate of fuel state, all of which is influenced by daily rainfall and the time elapsed since the last rainfall.

The Fire Danger Index for Victoria is 100, making it one of the highest in Australia. In the Alpine areas of the state it sits at 50. The Fire Danger Index for the Northern Territory and Queensland is only 40.

Bushfires burn at very high temperatures and the February 2009 fires have meant a revisit of the baseline data around radiant heat levels. Victoria has now opted for the higher standard, at 1090 kelvin. Kelvin is a measurement, in this case, of the temperature of radiant heat.

727 or 817 degrees Celsius (1000 or 1090 kelvin)



No. of buildings that can withstand heat exposure at a higher level

This diagram shows that the number of buildings that can withstand a higher level of heat exposure will increase at the higher temperature.

You can see this in the bell curve. As the peak shifts to the right, the number of homes protected to a higher level increases.

The Victorian Government is committed to provide the greatest level of protection possible. Therefore, the new standard is 817 degrees Celsius or 1090 kelvin rather than 727 degrees Celsius or 1000 kelvin. The Country Fire Authority and the Australasian Fire Authorities Council also supports the higher temperature standard.

The six BAL levels then directly stipulate the construction methods to be used within the standard. This is outlined in the next section.

What my home might look like

The new building standard assessment has six levels of risk based on the Bushfire Attack Level (BAL), with increasing construction requirements ranging from ember protection at the low levels (BAL-12.5) to fire-rated construction at the highest (BAL-FZ [Flame Zone]).

To illustrate how the BAL would affect building across Victoria, of the building permits issued for new homes in 2008, around 80 per cent would fall into the lowest category (BAL-LOW), requiring no special construction requirements. Only 10 per cent of all building permits issued would fall into the higher BAL categories – BAL 29, BAL 40, BAL-FZ.

Following is an outline of requirements to build to the standard in each BAL from the lowest to the highest. Technical details of the BAL are covered in the previous section.

	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ (FLAME ZONE)
SUBFLOOR SUPPORTS	No special construction requirements	No special construction requirements	No special construction requirements	Enclosure by external wall or by steel, bronze or aluminium mesh, non-combustible supports where the subfloor is unenclosed, naturally fire resistant timber stumps or posts on 75 mm metal stirrups	If enclosed by external wall refer below 'External Walls' section in table or non-combustible subfloor supports or tested for bushfire resistance to AS 1530.8.1	Subfloor supports – enclosure by external wall or non-combustible with an FRL of 30/-/- or be tested for bushfire resistance to AS 1530.8.2
FLOORS	No special construction requirements	No special construction requirements	No special construction requirements	Concrete slab on ground, enclosure by external wall, metal mesh as above or flooring less than 400 mm above ground level to be non-combustible, naturally fire resistant timber or protected on the underside with sarking or mineral wool insulation	Concrete slab on ground, enclosure by external wall or protection of underside with a non-combustible material such as fibre cement sheet or be non-combustible or be tested for bushfire resistance to AS 1530.8.1	Concrete slab on ground or enclosure by external wall or an FRL of 30/30/30 or protection of underside with 30 minute incipient spread of fire system or be tested for bushfire resistance to AS 1530.8.2
EXTERNAL WALLS	No special construction requirements	As for BAL-19	External walls – Parts less than 400 mm above ground or decks etc to be of non-combustible material, 6 mm fibre cement clad or bushfire resistant/naturally fire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete), timber framed, steel framed walls sarked on the outside and clad with 6 mm fibre cement sheeting or steel sheeting or bushfire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) or timber framed or steel framed walls sarked on the outside and clad with 9 mm fibre cement sheeting or steel sheeting or be tested for bushfire resistance to AS 1530.8.1	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) with minimum thickness of 90 mm or an FRL of -/30/30 when tested from outside or be tested for bushfire resistance to AS 1530.8.2
EXTERNAL WINDOWS	No special construction requirements	As for BAL-19 except that 4 mm Grade A safety glass can be used in place of 5 mm toughened glass	Protected by bushfire shutter, completely screened with steel, bronze or aluminium mesh or 5 mm toughened glass or glass blocks within 400 mm of ground, deck etc. Openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber	Protected by bushfire shutter or completely screened with steel, bronze or aluminium mesh, or 5 mm toughened glass with openable portion screened and frame of metal or metal reinforced PVC-U, or bushfire resisting timber and portion within 400 mm of ground level screened	Protected by bushfire shutter or 5 mm toughened glass. Openable portion screened with steel or bronze mesh	Protected by bushfire shutter or FRL of -/30/- and openable portion screened with steel or bronze mesh or be tested for bushfire resistance to AS 1530.8.2
EXTERNAL DOORS	No special construction requirements	As for BAL-19 except that door framing can be naturally fire resistant (high density) timber	Protected by bushfire shutter, or screened with steel, bronze or aluminium mesh or glazed with 5 mm toughened glass, non-combustible or 35 mm solid timber for 400 mm above threshold, metal or bushfire resisting timber framed for 400 mm above ground, decking, etc, tight-fitting with weather strips at base	Protected by bushfire shutter, or screened with steel, bronze or aluminium mesh or non-combustible, or 35 mm solid timber for 400 mm above threshold. Metal or bushfire resisting timber framed tight-fitting with weather strips at base	Protected by bushfire shutter, non-combustible or 35 mm solid timber, metal framed tight-fitting with weather strips at base	Protected by bushfire shutter or tight-fitting with weather strips at base and an FRL of -/30/-
ROOFS	No special construction requirements	As for BAL-19	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked and no roof mounted evaporative coolers	Roof with FRL of 30/30/30 or tested for bushfire resistance to AS 1530.8.2. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. No roof mounted evaporative coolers
VERANDAS DECKS ETC.	No special construction requirements	As for BAL-19	Enclosed sub-floor space – no special requirement for materials except within 400 mm of ground. No special requirements for supports or framing. Decking to be non-combustible or bushfire resistant within 300 mm horizontally and 400 mm vertically from a glazed element	Enclosed sub-floor space or non-combustible or bushfire resistant timber supports. Decking to be non-combustible	Enclosed sub-floor space or non-combustible supports. Decking to be non-combustible	Enclosed sub-floor space or non-combustible supports. Decking to have no gaps and be non-combustible

Please note: The information in the table is a summary of the construction requirements in the new standard and not intended as a design guide. You should consult the standard for the full technical details.

Aim for the highest level of bushfire protection

In bushfire damaged areas the new building standard should be considered in conjunction with the potential for future vegetation re-growth.

We owe it to the Victorian community to provide the greatest level of protection that we can.

Buildings that must comply

The new building standard applies to almost all types of residential new buildings and rebuilding work, including alterations and additions. However, most new homes in Victoria will not require changes as they will be assessed at the lowest risk level.

Buildings to comply with the new building standard include:

- New homes or outbuildings of any construction type including, but not limited to, brick veneer, mudbrick and timber
- Rebuilding of homes or outbuildings of all construction types
- Repairs to a room, or part of a building or outbuilding such as a garage, shed or fireplace
- Additions to homes and outbuildings.

Under the new building standard, the Building Code of Australia applies as it always has.

Building permits are required for all new building, rebuilding and partial reconstruction work, alterations and additions of homes and outbuildings.

When a building permit is issued for an alteration or addition, the building surveyor has the discretion on whether full or partial compliance is needed. The new building standard does not change this requirement.

Note: Structural damage may not always be apparent, so check with your local Council's Municipal Building Surveyor or a Private Building Surveyor or a Registered Building Practitioner, such as a Structural Engineer, to ensure it is safe.

Local Council	Contact number
Alpine Shire Council	(03) 5755 0555
Baw Baw Shire Council	(03) 5624 2411
Benalla Rural City Council	(03) 5760 2600
City of Greater Bendigo Council	(03) 5434 6000
Cardinia Shire Council	1300 787 624
City of Casey Council	(03) 9705 5200
Corangamite Shire Council	(03) 5593 7100
Hindmarsh Shire Council	(03) 5391 1811
Horsham City Rural Council	(03) 5382 9794
Indigo Shire Council	(03) 5728 8000
Knox City Council	(03) 9298 8000
Latrobe City Council	1300 367 700
Macedon Ranges Shire Council	(03) 5422 0333
Mansfield Shire Council	(03) 5775 8555
Mitchell Shire Council	(03) 5734 6200
Mount Alexander Shire Council	(03) 5471 1700
Murrindindi Shire Council	(03) 5772 0333
Nillumbik Shire Council	(03) 9433 3111
Greater Shepparton City Council	(03) 5832 9700
Southern Grampians Shire Council	(03) 5573 0444
Towong Shire Council	(02) 6071 5100
Rural City of Wangaratta Council	(03) 5722 0888
Wellington Shire Council	1300 366 244
City of Whittlesea Council	(03) 9217 2170
Yarra Ranges Shire Council	1300 368 333

For numbers not listed here please go to: www.mav.asn.au

Questions & Answers

Q. What is the difference between the new building standard and the previous standard?

A. The new building standard has six risk levels whereas the previous standard had four. There are increasing construction requirements that range from ember protection at the lower levels to direct flame contact protection at the highest.

The more scientific risk assessment of the new building standard determines the likely levels of heat exposure and then stipulates the appropriate construction method to improve a building's ability to withstand bushfire attack and, importantly, protect occupants, while the fire front passes.

Q. What are the key aspects of the new building standard?

A. The new building standard increases the construction requirements on residential buildings so they are better bushfire protected. This ranges from construction measures that provide ember protection at the low levels to direct flame protection at the highest.

Under the new building standard, new homes at risk of bushfire may be required to have:

- Roofs, verandas and decking made from non-combustible material
- Wall and roof joints sealed against ember attacks
- Windows protected by non-combustible shutters or made using 4 to 5 mm toughened glass
- Door frames made from fire resistant timber and tightly fitted, with a weather strip at the base.

Q. Does the new building standard focus on materials used rather than the design?

A. The new building standard sets out suitable materials and construction methods appropriate to the bushfire risk – it does not prevent good design being used that is appropriate for the specific location.

Q. Will this new building standard save me and my home if a bushfire hits?

A. The new building standard will improve protection for new buildings in Victoria. However, it does not guarantee that a building or its occupants will survive a bushfire due to the unpredictable nature of bushfires.

Q. Will I still be able to design a home the way I want it?

A. Design decisions will continue to be made by property owners and their architects, designers and builders.

The new building standard stipulates construction methods and materials to better protect homes from bushfires but it does not specify design requirements.

Q. Will the new building standard be applied to all of Victoria or just declared Bushfire Prone Areas?

A. The new building standard will apply to all of Victoria. However, the majority of homes in Victoria will be assessed at the lowest risk level and therefore will not be subject to any specific conditions.

Q. How does the new building standard work in relation to building regulations?

A. In March 2009, the new building standard will be included in the *Victorian Building Regulations 2006*.

Q. Will it cost me more to rebuild my home under the new building standard than under the previous standard?

A. As with the previous standard, the costs of building depend on the type of construction and the property's level of bushfire risk. However, with more finely tuned risk assessment, the new building standard allows for flexibility in regard to construction costs.

In 2008, 80 per cent of the building permits issued for new homes in Victoria would be assessed as BAL-LOW (requiring no specific construction requirements).

Q. Will I have to use specific building products to meet the new building standard?

A. No specific products are specified in the new building standard though a range of new products may be included in the design process and some materials will require a fire test to AS1530.8.

Q. Will I be allowed to clear trees around my property?

A. The new building standard considers the existing vegetation on the site and the distance between buildings and vegetation. The removal of vegetation is subject to approval by other authorities. It is recommended that you check with your local Council.