



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009





Development Act 1993

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PURPOSE

This Code has been written to assist applicants seeking to undertake development in Bushfire Protection Areas, and the professionals who assess development applications.

The information provided in this Code is limited to bushfire-related planning and building requirements and includes a checklist of information required when lodging a development application for land division, new dwellings, tourist accommodation or other habitable buildings (or additions or alterations to any of these buildings). It references specific statutory documents (which are listed in Part 3).

Regulation 106A(3) of the *Development Regulations 2008* requires that a development application for a development plan consent or a land division consent in relation to development in a bushfire protection area **must** be assessed taking into account the relevant requirements of this Code.

For the purposes of regulation 106A(3) the relevant requirements of this Code are sections 2.2.2, 2.3.3.1, 2.3.4.1 and 2.3.5.

All proposals for development need to meet certain planning and building requirements. These requirements are contained in the *Development Regulations 2008* and local Development Plan, the Building Code of Australia and other documents. The information required to lodge a development application is described in the *Guide for Applicants – All Applications* document prepared by the Department of Planning and Local Government.

The information in this Code shall be read in conjunction with the above referenced documents.



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



TABLE OF CONTENTS

PART 1: BUSHFIRE PROTECTION	7
1.1 Background	7
1.2 Identification of Bushfire Protection Areas	7
PART 2: SUBMITTING A DEVELOPMENT APPLICATION IN A BUSHFIRE PROTECTION AREA	9
2.1 Background	9
2.2 Applications for Land Division in Bushfire Protection Areas	9
2.2.1 Description of proposed land division	10
2.2.2 Proposed means of entry to and exit from an allotment (Statutory Effect).....	10
2.2.3 Provision of bushfire buffer zones in High Bushfire Risk Areas	12
2.3 Applications for Dwellings, Tourist Accommodation and Other Habitable Buildings (Development Plan Consent) in Bushfire Protection Areas	13
2.3.1 Description of proposed buildings.....	13
2.3.2 Siting of proposed buildings.....	13
2.3.3 Proposed means of entry to and exit from an allotment	14
2.3.4 Existing and proposed water supply for the allotment.....	16
2.3.5 Existing and proposed trees and vegetation on and around the allotment (Statutory Effect)	17
2.4 Applications for Building Rules Consent in Bushfire Protection Areas	18
2.4.1 General bushfire risk areas	18
2.4.2 Medium or high bushfire risk areas.....	18
PART 3: REFERENCED STATUTORY DOCUMENTS	21
PART 4: FURTHER INFORMATION	23
PART 5: CHECKLIST OF INFORMATION REQUIRED FOR DEVELOPMENT IN BUSHFIRE PROTECTION AREAS	25
APPENDIX A: Copy of regulation 78 of the <i>Development Regulations 2008</i>	
APPENDIX B: Copy of Appendix F.8 of the South Australian Housing Code	



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



PART 1: BUSHFIRE PROTECTION

1.1 Background

Following the Canberra bushfires of January 2003, the State Government convened the Premier's Bushfire Summit, the aim of which was to review existing planning, environment and building safety regulations that were last amended 20 years earlier following the 1983 Ash Wednesday bushfires. The Summit made 15 recommendations to the State Government which covered a broad range of issues. In relation to matters covered by the *Development Act 1993*, the following recommendation was made:

...review the bushfire management policy framework and development plans (including land use and infrastructure) to update development controls in designated Bushfire Prone Areas and to consider extending the number of Bushfire Prone Areas.

As a result, a State Agency Working Group was established to review existing bushfire prone areas in the Mount Lofty Ranges, Barossa and Hills Face regions and to map the remainder of the State to determine the appropriateness or otherwise of extending the existing provisions to the rest of the State.

1.2 Identification of Bushfire Protection Areas

The identification of Bushfire Protection Areas involved an extensive bushfire risk mapping exercise. Identification was based on risk analysis techniques that involved satellite images, slope and topography, weather statistics, vegetation data (including fuel loads) and population growth. The analysis of this data resulted in the Bushfire Protection Areas being divided into three distinct levels of bushfire risk:

- General Bushfire Risk
- Medium Bushfire Risk or
- High Bushfire Risk.

There were also some areas, generally townships, with adequate fire protection measures that were defined as '**excluded**' where it was not considered necessary to introduce specific bushfire planning or building requirements.

The bushfire risk maps were reviewed and amended based on comments received from Councils, Fire Prevention Officers and the South Australian Country Fire Service. Extensive public consultation was also undertaken.

This process resulted in Bushfire Protection Areas being identified in the following 39 Councils:

- **Metropolitan Adelaide:** Burnside, Campbelltown, Gawler, Mitcham, Onkaparinga, Playford, Tea Tree Gully and Salisbury
- **Outer Metropolitan Adelaide:** Adelaide Hills, Alexandrina, Barossa, Light, Mallala, Mount Barker, Victor Harbor and Yankalilla



Development Act 1993

Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

- **Country:** Berri Baramera, Clare and Gilbert Valleys, Elliston, Grant, Kangaroo Island, Kingston, Lower Eyre Peninsula, Mid Murray, Mount Gambier, Mount Remarkable, Murray Bridge, Naracoorte & Lucindale, Northern Areas, Port Lincoln, Port Pirie, Renmark Paringa, Robe, Streaky Bay, Tatiara, Tumby Bay, Wakefield, Wattle Range, Yorke Peninsula.

There are three ways to determine whether a specific allotment is located in a Bushfire Protection Area and the level of bushfire risk that applies to the allotment (excluded, general, medium or high):

1. Contact the Council in whose area the allotment is located. Councils have detailed bushfire maps that identify Bushfire Protection Areas.
2. Access the bushfire maps in the relevant local Development Plan. Development Plans can be accessed electronically by visiting the *Development Plans Online* section of the Department of Planning and Local Government website at www.planning.sa.gov.au/go/development-plans. Alternatively, Development Plans are available from the relevant Council.
3. Use the Department of Planning and Local Government's online search tool <http://www.planning.sa.gov.au/go/development-plans/bushfire-protection-areas>. The online search tool requires specific information that identifies the land parcel in question. There are currently three search options available, a plan search, title search and an assessment search. The information required for a search can generally be found on the rate notice issued by Council.



PART 2: SUBMITTING A DEVELOPMENT APPLICATION IN A BUSHFIRE PROTECTION AREA

2.1 Background

The *Development Act 1993* is the legislation that governs development in South Australia. Development Approval consists of a number of consents, usually a **Development Plan Consent** and a **Building Rules Consent**, both of which must be obtained before a **Development Approval** will be issued. If the development proposes the sub-division of land, then a **Land Division Consent** must also be obtained, prior to Development Approval being issued.

Applications for **Development Plan Consent** are assessed against the planning policies contained in the Development Plan for the relevant Council, or may be complying development under the *Development Regulations 2008*. The bushfire planning policies for Bushfire Protection Areas can be found in the relevant local Development Plan.

Applications for **Building Rules Consent** are assessed against the technical requirements of the Building Rules. The technical requirements for Bushfire Protection Areas are contained in the Building Code of Australia, the South Australian Housing Code and Minister's Specification SA 78.

When submitting an application it is important to remember that the information provided with an application forms the basis upon which the application will be assessed. If the information is inadequate or insufficient (incomplete, incorrect), the assessment of the application may be delayed.

The information submitted should reflect the scale and nature of the proposed development. For example, applications for a new building may need to include information that addresses the majority of issues contained in this Code, whereas applications for minor extensions or alterations may only need to provide information about some of the issues.

Note 1: Further information about lodging a development application can be obtained from the relevant Council.

2.2 Applications for Land Division in Bushfire Protection Areas

The design of land divisions can greatly reduce the exposure of residents and property to the impacts of bushfires. Appropriate design will also greatly assist with fire prevention and suppression operations. An application for land division should include enough information to demonstrate that the proposed development addresses the relevant bushfire planning provisions contained in the local Development Plan. The application should specifically provide:

- a description of the proposed land division
- information about the proposed means of entry to and exit from the land division
- if the land division is in a High Bushfire Risk Area, information about the nature and location of bushfire buffer zones.



2.2.1 Description of proposed land division

Schedule 5 of the *Development Regulations 2008* provides detailed requirements for land division plans, including:

- the proposed number of allotments including their dimensions and area
- the layout of existing and proposed public roads
- the location of existing buildings
- the location of easements
- all relevant topographic features.

The following additional information will need to be provided if the applicant intends to divide their land in a Bushfire Protection Area:

- the area to be covered by any proposed buildings
- the location of entry and exit points to public roads
- the condition of the public roads - formed, all weather surfaces
- the location and nature of existing trees and vegetation
- the slope of the land
- the nature and location of bushfire buffer and asset protection zones
- the location of water supply for fire-fighting purposes.

2.2.2 Proposed means of entry to and exit from an allotment (Statutory Effect, regulation 106A *Development Regulations 2008*)

It is essential that all residents in Bushfire Protection Areas, as well as fire-fighting and emergency services personnel and vehicles, can safely enter and exit the allotments proposed to be created by the land division. For this reason public roads created by land divisions shall:

- be constructed with a formed, all-weather surface
- be constructed away from hazardous vegetation such as overhanging limbs and continuous cover of thick vegetation
- be located such that the need to clear native vegetation or a significant tree is minimised
- have a minimum formed road width of 6 metres
- have a gradient of not more than 16 degrees (i.e. a maximum slope of 1:3.5) at any point along the road or driveway
- allow fire-fighting vehicles to travel in a continuous forward movement around road curves by constructing the curves with a minimum external radius of 12.5 metres (*refer to Figure 1*)
- provide for a mainly continuous street pattern serving new allotments that eliminates the use of culs-de-sac or dead end roads . Where this is not practicable such roads should not exceed 200 metres in length and the end of the road should have either -
 - a turning area with a minimum formed surface radius of 12.5 metres (*refer to Figure 1*); or
 - a 'T' or 'Y' shaped turning area with a minimum formed surface length of 11 metres and minimum internal radii of 9.5 metres (*refer to Figures 1 and 2*)



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

- incorporate solid, all-weather crossings that are capable of supporting fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes, over any watercourse identified on either a current State Government topographic map (1: 50 000) or otherwise identified as a crossing required to provide appropriate access for fire-fighting vehicles.

A current State Government topographic map (1:50 000) can be obtained from the Map Shop www.mapshop.net.au/msnindex.htm.

The entry and exit requirements for private roads, driveways and access to dedicated water supplies for individual allotments are similar to those required for public roads in land divisions. Further details can be found in section 2.3 of this Code (*Applications for Development Plan Consent*). There is also a general guide to land division on the Department of Planning and Local Government website www.planning.sa.gov.au/go/development-applications/land-division.

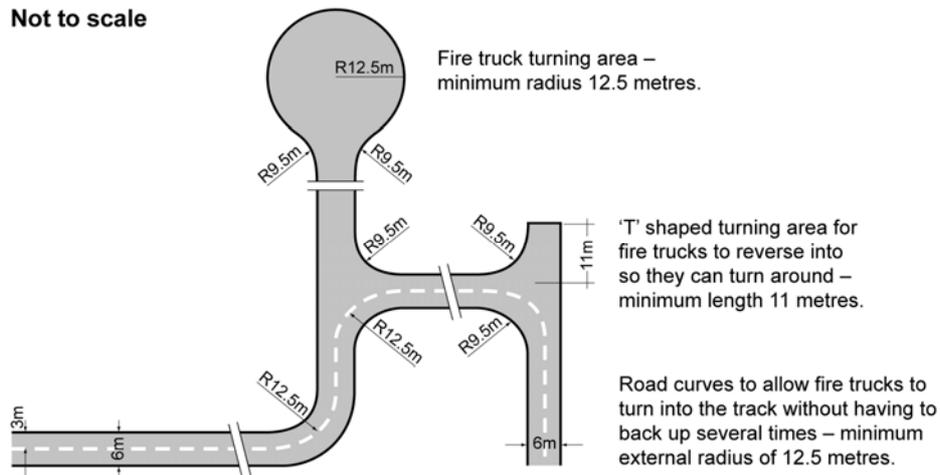


Figure 1

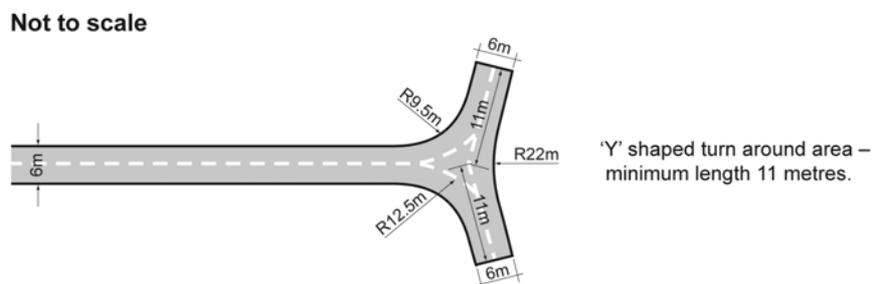


Figure 2

2.2.3 Provision of bushfire buffer zones in High Bushfire Risk Areas

If the application proposes a land division adjacent to or within a **High Bushfire Risk Area**, provision shall be made for a bushfire buffer zone which isolates the proposed residential allotments from areas that pose an unacceptable bushfire risk, such as areas with rugged terrain or hazardous vegetation. This can be achieved by containing the allotments within a perimeter road or through other means that achieve an adequate separation, such as those demonstrated in *Figure 3*. The use of a perimeter road shall ensure that two entry and exit points are provided to and from the division (*refer to Figure 3*).

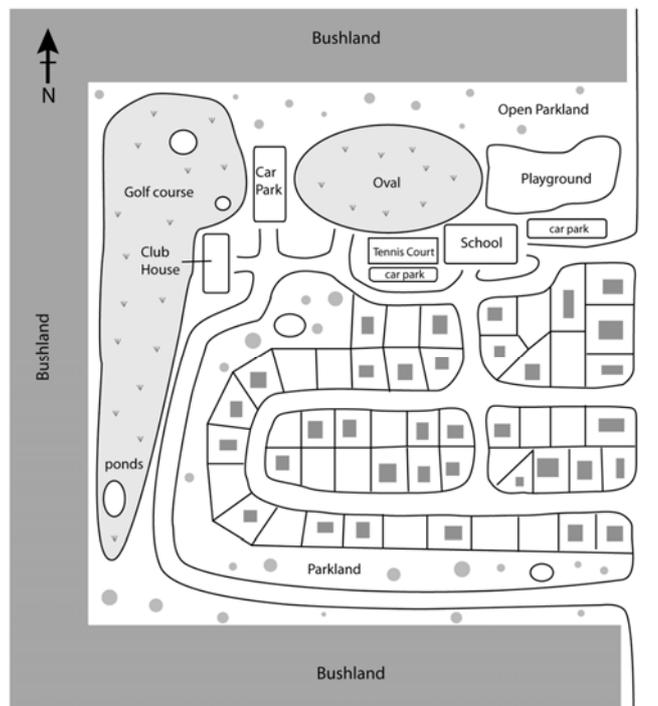


Figure 3

An example of a development surrounded on three sides by bushfire hazard (bushland). The development incorporates various bushfire buffer zones such as the perimeter road, golf course, cleared parkland, oval and playground.

Source – *Planning for Bushfire Protection (December 2001)*, Department for Planning and Infrastructure, Western Australia



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

2.3 Applications for Dwellings, Tourist Accommodation and Other Habitable Buildings (Development Plan Consent) in Bushfire Protection Areas

An application for a dwelling, tourist accommodation or other habitable building (including alterations to any of these buildings) shall include enough information to demonstrate that the proposed development addresses the bushfire planning provisions contained in the local Development Plan. This information can be included in the building specification and/or on the scaled drawings (site plan, floor plan and/or elevations) or may be in the form of a written report. The application shall specifically provide:

- details of the proposed land division (if applicable)
- a description of the proposed buildings
- information about the siting of the proposed buildings
- details about the topography of the land
- the proposed means of entry to and exit from an allotment
- information about the existing and proposed water supply for the site
- details about the existing and proposed trees and vegetation on and around the allotment.

Applications for a dwelling, tourist accommodation or other habitable building (including alterations to any of these buildings) in High Bushfire Risk Areas are lodged with Council and then referred to the SA Country Fire Service Development Assessment Unit for analysis and direction. The SA Country Fire Service Development Assessment Unit has a statutory period of six weeks to prepare a report and direct Council to approve (with or without conditions) or refuse the application. The Council must comply with any such direction.

2.3.1 Description of proposed buildings

It is important that the application provide as much information as possible about the proposed use/s of the building/s. For example, will the building be a private residence or tourist accommodation or will it be a community based facility that has several uses?

Information should also be provided to demonstrate that elevated buildings with a sub-floor space (such as transportable or pole frame homes) have been designed to reduce the potential for trapping burning debris against the proposed buildings. This can be achieved by protecting the sub-floor space of the building from sparks and embers. More detailed information about the method of protecting the sub-floor space will be required at the Building Rules assessment stage of the process.

2.3.2 Siting of proposed buildings

The bushfire planning policies require buildings to be sited away from areas that pose an unacceptable bushfire risk. This includes areas with rugged terrain or hazardous vegetation. For these reasons the information provided with the application shall indicate the:

- size and location of all proposed and existing buildings (including garages, sheds and other similar structures) on the allotment and the distance of the buildings from the site boundaries



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

- slope of the land on which the building is to be located. Buildings should be located on the flatter portions of allotments and avoid steep slopes, especially upper slopes, narrow ridge crests, the tops of narrow gullies and slopes with a northerly or westerly aspect

Note 2: The speed at which a bushfire travels increases significantly up a slope because it exposes the upcoming vegetation [grass, trees and shrubs] to preheating and drying.

- location of existing trees and vegetation and their distance from the proposed buildings. Buildings need to be located at least 20m away from existing hazardous vegetation
- location of key topographical features such as watercourses, dams or bores.

Figure 4 provides some guidance about the siting of buildings in relation to slope and existing vegetation.

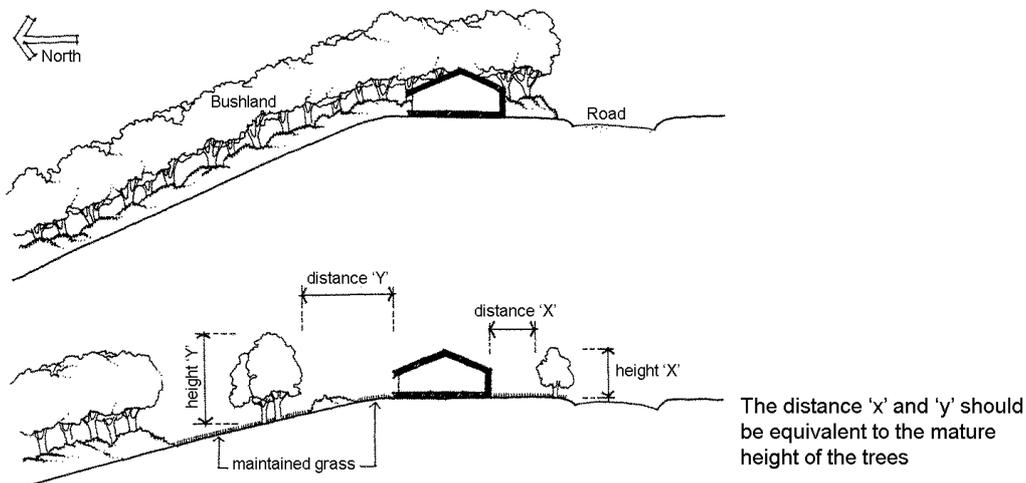


Figure 4

A steep slope and dense vegetation increase the bushfire risk to buildings. To reduce this risk, locate the building in an area with minimal vegetation and a lesser slope.

Source - courtesy of SA Country Fire Service

2.3.3 Proposed means of entry to and exit from an allotment

It is essential that residents in Bushfire Protection Areas, as well as fire fighting and emergency services personnel and vehicles, can safely enter and exit private allotments and access dedicated water supplies if applicable. The entry and exit requirements for **public** roads have previously been discussed as part of the land division requirements.

2.3.3.1 Private roads and driveways (Statutory Effect, regulation 106A Development Regulations 2008)

Private roads and driveways to buildings, where the furthest point to the building from the nearest public road is more than 30 metres, shall:

- be connected to an all-weather public road
- be constructed with a formed, all-weather surface
- be constructed away from hazardous vegetation such as overhanging limbs and continuous cover of thick vegetation



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

- be located such that the need to clear native vegetation or a significant tree is avoided
- have a minimum formed width of 3 metres (or 4 metres in steeper terrain)
- have a gradient of not more than 16 degrees (i.e. a maximum slope of 1:3.5) at any point along the road or driveway
- allow fire-fighting vehicles to travel in a continuous forward movement by constructing curved roads and driveways with curves that have a minimum external radius of 12.5 metres (refer to Figure 5)
- allow fire-fighting vehicles to safely enter and exit an allotment in a forward direction by incorporating either –
 - a loop road around the building
 - a turning area with a minimum radius of 12.5 metres
 - a 'T' or 'Y' shaped turning area with a minimum formed length of 11 metres and minimum internal radii of 9.5 metres (refer to Figure 5)

Not to scale

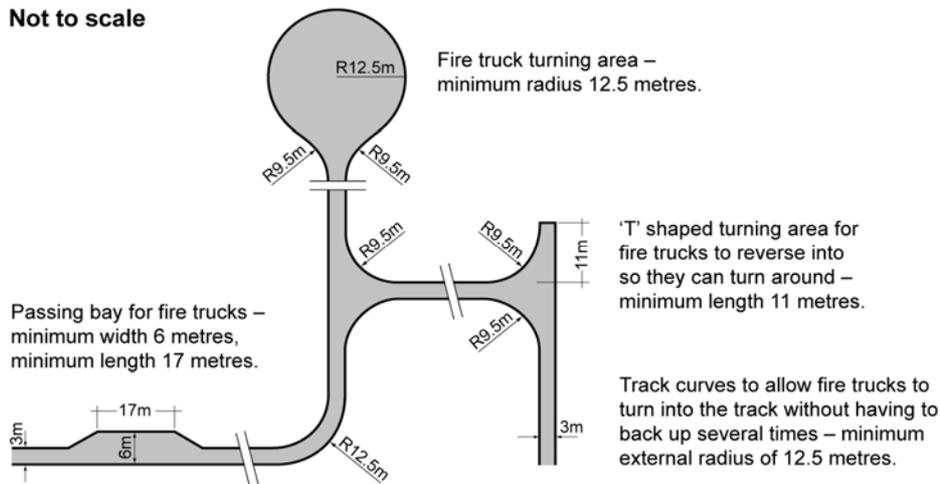


Figure 5

Note: The above requirements may not apply to private roads and driveways where the building is located less than 30 metres from the nearest public road, except where there are conditions such as proposed all-weather materials, slope, width etc. for the relevant planning authority to take into account.

- incorporate solid, all-weather crossings that are capable of supporting fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes, over any watercourse identified on either a current State Government topographic map (1: 50 000) or otherwise identified as a crossing required to provide appropriate access for fire-fighting vehicles. A current State Government topographic map (1:50 000) can be obtained from the Map Shop www.mapshop.net.au/msnindex.htm



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

- incorporate passing bays with a minimum formed width of 6 metres (or 7 metres in steeper terrain), including the road or driveway width, and a minimum formed length of 17 metres (*refer to Figure 5*). The passing bays should be constructed at 200 metre intervals along the road or driveway. Where it is necessary to provide adequate visibility, such as the nearest point to a public road or other passing bay, passing bays may be required at intervals of less than 200 metres.

2.3.4 Existing and proposed water supply for the allotment

It is critical that fire-fighting services have ready access to an adequate water supply during bushfires. For this reason the bushfire planning policies require buildings to have a dedicated water supply that is available for fire-fighting purposes at all times. The following requirements apply to dwellings, tourist accommodation and other habitable buildings:

- buildings located in **general** or **medium bushfire risk areas** are required to have a minimum of **5000 litres dedicated water supply**.
- buildings located in a **high bushfire risk area** are required to have a minimum of **22 000 litres dedicated water supply**.

2.3.4.1 Access to dedicated water supplies (Statutory Effect, regulation 106A *Development Regulations 2008*)

The bushfire planning provisions require the water supply to be located adjacent to the buildings or in another location on the allotment that is accessible to fire-fighting purposes. Access to dedicated water supplies required for fire-fighting purposes shall:

- be constructed from all-weather materials
- have a minimum formed road width of 4 metres
- allow fire-fighting vehicles to enter and exit in a forward direction
- incorporate an all-weather filling area capable of supporting fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes
- have access verges bordering open water storage areas that incorporate retaining walls to support the weight of fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes.

The information provided with the application should:

- detail the nature of the proposed dedicated water supply. A rainwater tank may be used but there are other alternatives, including swimming pools and dams that are also acceptable
- confirm that the proposed capacity is appropriate for the level of bushfire risk determined for the site (5 000 or 22 000 litres)
- indicate the location of the supply, which must be located adjacent to the buildings or in another location on the allotment that is accessible for fire-fighting purposes.



2.3.5 Existing and proposed trees and vegetation on and around the allotment (Statutory Effect, regulation 106A *Development Regulations 2008*)

The bushfire planning policy within development plans requires buildings to be located away from vegetation (trees and/or shrubs) that poses an unacceptable bushfire risk. This policy is aimed at minimising both the risk of bushfire to life and property and the spread of bushfire. Buildings should be set back at least 20m from existing hazardous vegetation (*Refer to Figure 6*).

Documentation lodged for assessment purposes should indicate:

- the location and diameter of trees and their distance from the proposed buildings
- any areas of the site that may increase the risk of, or assist the spread of fire. This may include dense, combustible vegetation or flammable plant debris
- the methods proposed to minimise the risk of fire such as the thinning or clearing of vegetation; removal of trees or branches overhanging any buildings or the planting of vegetation that is fire resistant. Trees and shrubs should not be planted closer to any building or overhanging powerlines than a distance equivalent to their mature height

Note 3: The clearance of native vegetation for a dwelling site may require the consent of the Native Vegetation Council. If the distance of the native vegetation to be cleared around an approved dwelling is less than 20m, the consent of the Native Vegetation Council will not be necessary. Contact details for the Native Vegetation Council can be found under the Further Information section of this Code.

Note 4: The removal of trees or branches from significant trees (as defined in the Development Act 1993) requires a Development Approval. Applicants should identify the location of any significant trees on the relevant allotment and indicate them on the documentation prepared for assessment purposes. Maintenance pruning that does not adversely affect the health or appearance of the tree may not require Development Approval.

- the practices proposed to minimise the spread of fire such as the creation and maintenance of an asset protection zone that incorporates features such as driveways, vegetable gardens or landscaped gardens (including deciduous trees and fire retardant plant species) around buildings. Asset protection zones vary in size depending on slope and must be a minimum of 20 metre wide on flat land with the width of the zone increasing as the slope increases e.g. 10° – 15° 25m, 15° – 20° 30m, 20°+ 40m (*Refer to Figure 6*).

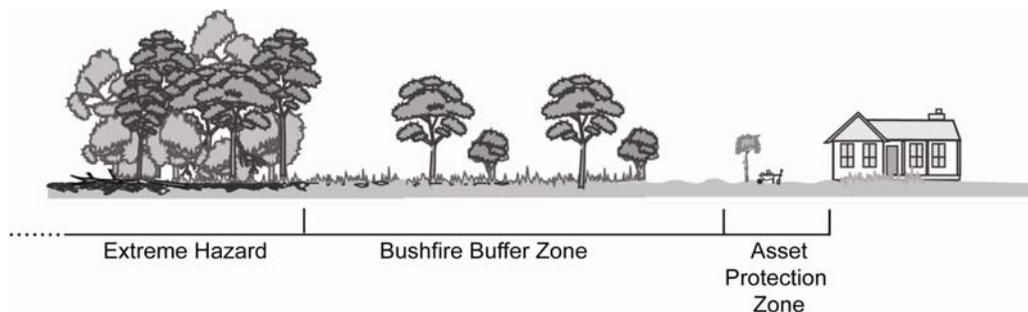


Figure 6
Asset protection zone (minimum 20 metres wide)



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

2.4 Applications for Building Rules Consent in Bushfire Protection Areas

Development Plans identify the level of bushfire risk (general, medium or high) appropriate for the area in which the site is located.

The Building Code of Australia Volumes 1 and 2 (BCA) and the South Australian Housing Code (Housing Code) contain the construction requirements that apply to sites located in general, medium and high bushfire risk areas. The requirements apply to Class 1, 2 and 3 buildings (and certain Class 10 buildings adjoining residential buildings such as verandas and carports) and are based on Australian Standard 3959 but also incorporate specific South Australian variations.

These building requirements do not affect existing buildings, except where additions or alterations requiring Development Approval are proposed. For small additions and alterations, the bushfire constructions only apply to the new work. However, if the additions or alterations significantly increase the size of the existing floor area then the relevant authority may require that the entire building be upgraded to meet the current requirements.

2.4.1 General bushfire risk areas

The construction requirements for **general** bushfire risk areas are mandated through regulation 78 of the *Development Regulations 2008* (Appendix A), which requires buildings to be constructed in accordance with the low bushfire attack category of Section F.8 of the Housing Code (Appendix B). The construction requirements only address the sub-floor spaces of elevated buildings and adjoining verandas and decks.

2.4.2 Medium or high bushfire risk areas

Sites located in a **medium** bushfire risk area are required to comply with the medium bushfire attack category requirements in either the BCA or the Housing Code.

Sites located in a **high** bushfire risk area are required to undergo an individual site assessment to determine the category of bushfire attack applicable to the site. *AS 3959 – 1999 Construction of buildings in Bushfire Prone Areas* provides the assessment methodology (and criteria) used to determine whether the category of bushfire attack for a site is high or extreme. A site assessment can be submitted with an application by any person, but it will be assessed by the building surveyor who is responsible for the assessment when making the final decision.

The construction requirements for **medium**, **high** and **extreme** bushfire attack categories are contained in both the BCA and the Housing Code. Documentation lodged for Building Rules Consent will need to demonstrate that the following aspects of the building comply with the requirements:

- Flooring systems
- Verandas and decks
- External walls
- Windows
- External doors
- Vents and weepholes
- Posts, columns, stumps, piers and poles
- Roof lights
- Roof ventilators
- Evaporative cooling units
- Roof covering, eaves and fascias
- Gutters and downpipes
- Service pipes (water and gas)



Development Act 1993

Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

In addition to the BCA and Housing Code requirements, buildings located in **medium** or **high** bushfire risk areas, which are required to have a dedicated water supply for fire-fighting purposes (5 000 litres or 22 000 litres respectively), must also comply with *Minister's Specification SA 78 Bushfire fighting equipment and water supply requirements in designated bushfire prone areas*. The specification includes technical details relating to tanks, pumps, pipework and hoses. Generally, the application for Building Rules Consent must demonstrate that the water supply will:

- be fitted with a fuel-driven pump or equivalent system, independent of main electricity capable of pressurising water for fire fighting
- in cases where water is held in a closed tank, be fitted with a fire service adaptor with a minimum outlet of 50mm terminating in a 64mm male London round thread
- be fitted with a hose and nozzle capable of withstanding the pressures of the supplied water and which is able to reach all parts of the buildings
- be clearly identified and accessible to fire-fighting vehicles.

The Building Policy Branch of the Department of Planning and Local Government produce Advisory Notices that assist with the interpretation of the Building Rules including the building requirements in Bushfire Protection Areas (www.planning.sa.gov.au/go/ban).



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009

PART 3: REFERENCED STATUTORY DOCUMENTS

Development Act 1993 and Development Regulations 2008

www.legislation.sa.gov.au

Development Plans

Contact the relevant Council or visit the Department of Planning and Local Government website
<http://www.planning.sa.gov.au/go/development-plans/development-plans-online>

Building Code of Australia (Volumes 1 and 2) – updated 1 May each year

Telephone: 1800 857 522

Internet: www.abcb.gov.au

Email: bca@abcb.gov.au

Australian Standard AS3959 (AS 3959) *Construction of buildings in bushfire-prone areas*, Standards Australia, 1999, www.saiglobal.com

Minister's Specification SA 78 *Bushfire fighting equipment and water supply requirements in designated bushfire prone areas*, <http://dataserver.planning.sa.gov.au/publications/683p.pdf>

South Australian Housing Code - *A deemed to satisfy specification for domestic construction in South Australia*

The bushfire construction requirements are contained in Amendment 15 of the Housing Code which is downloadable for free from the Department of Planning and Local Government website. <http://www.planning.sa.gov.au/go/SA-Housing-Code>



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

PART 4: FURTHER INFORMATION

CSIRO

Further information about research into bushfires can be obtained from the CSIRO

Telephone: (03) 9545 2176

Email: enquiries@csiro.au

Internet: <http://www.csiro.au/org/BushfiresOverview.html>

Land division information

Application forms and further information about the division of land can be obtained from the relevant Council or Department of Planning and Local Government

Postal address: 136 North Terrace, Adelaide SA 500

Telephone: (08) 8303 0601

Internet: <http://www.planning.sa.gov.au/go/development-applications/land-division>

Native vegetation clearance approval

Application forms and further information can be obtained from the Native Vegetation Council, Department of Water, Land and Biodiversity Conservation -

Postal address: Native Vegetation Secretariat, GPO Box 1047, Adelaide, 5001

Telephone: (08) 8124 4744

Internet: www.dwlbc.sa.gov.au

Department of Planning and Local Government

The Department of Planning and Local Government produces a fact sheet titled *Ways to make your home more resistant to bushfires* which is a guide that brings together a number of useful ideas to make your home more resistant to bushfires.

Building Advisory Notices are also produced to assist in the interpretation of the Development Act 1993 <http://www.planning.sa.gov.au/go/ban>

Postal address: 136 North Terrace, Adelaide SA 5000

Telephone: (08) 8303 0602 (Building Policy Branch) or (08) 8303 0791 (Planning Policy Branch)

Internet: www.planning.sa.gov.au

Premier's Bushfire Summit

For information on the Premiers Bushfire Summit 2003, including goals, submission and outcomes, visit the website

Internet: <http://www.cfs.org.au/bushfiresummit2003/>

SA Country Fire Service

The SA Country Fire Service produce a series of fact sheets that provide information about a wide range of bushfire related issues. These include *Fire Retardant Plants* and *Landscaping for Fire Protection* which provides a list of trees and shrubs that are fire retardant. They also produce a *Prepare to stay and defend or go early* policy. Further information regarding the policy can be obtained from your local Council's Fire Prevention Officer or the SA Country Fire Service.

Internet: www.cfs.org.au



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



PART 5: CHECKLIST OF INFORMATION REQUIRED FOR DEVELOPMENT IN BUSHFIRE PROTECTION AREAS

SUMMARY

STEP 1

Consult with local council and relevant agencies

STEP 2

Prepare development application

STEP 3

Lodge application with relevant authority (usually the local council)

STEP 4

Development Plan Consent

STEP 5

Building Rules Consent
Land Division Consent

STEP 6

Development Approval decision

Hint: Use this checklist as a guide to ensure that all key information is included in your application. This will avoid delays in processing your application

The following information is required when lodging a development application for land division, to build a new dwelling(s), tourist accommodation or other habitable building (including the alteration and addition to any of these buildings) in Bushfire Protection Areas.

- Completed development application form
- Application fee
- Copy of Certificate of Title (current to within 3 months)

Council requires three copies of plans showing the proposed development, at least one set of which is A3 in size. These plans should be to scale (metric).

An application for land division must be lodged with the Development Assessment Commission and must be in a form prescribed by the *Development Regulations 2008*. Further information on land division applications can be found in the 'Land Division Guide', which is available from the Department of Planning and Local Government (www.planning.sa.gov.au)

INFORMATION REQUIRED FOR DEVELOPMENT PLAN CONSENT

Site plan

A site plan must clearly show the location of the proposed development or activity and should:

- Have a minimum scale of 1:500 (or greater) and a north point
- Show all property or site boundaries (include dimensions in metres or centimetres)
- Show the location, size and nature of existing and proposed structures (including fences and retaining walls), activities and easements
- Show existing trees and vegetation
- Show the extent of tree and vegetation removal proposed (Native Vegetation Council approval may be required)
- Identify the key topographical features (for example creek lines, drainage lines, slope of the land, direction of flow of stormwater, flood plains)
- Where appropriate, identify the location of traffic access points, adjoining roads, vehicle turning circles and access arrangements for emergency vehicles



Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009

- Identify the location of existing dams or bores
- Provide the location, size and details of the dedicated available water supply (for example, rainwater tanks, dams, pools) for fire fighting purposes
- Provide scaled elevation sketches showing external building materials, finishes and colours to be used
- Provide internal floor layout plans (existing and proposed) indicating areas of use
- Show the location of dedicated water supply, fire hose reel and fuel-driven pump, where necessary.

Description of the surrounding area

The description of the surrounding area should explain the possible impacts of the proposed development and may range from a detailed report to a simple plan. It should include the following information:

- Location of the property or site relative to surrounding properties
- Location of public roads and their condition, including undeveloped road reserves (indicate main site access)
- Location of and distance to nearest neighbours, and the nature of neighbouring land uses (for example residential, industrial, farming, retail) on all sides of the site
- Detail of any potential conflicts with neighbouring land uses
- Location of surface water (for example lakes, creeks, dams) within 500m of the site
- Details of any sites of erosion risk.

Description of the proposed development

A description in words of the proposed development must be provided. It should discuss:

- The proposal and the capability of the site to sustain that use
- The ways in which the applicant will minimise the potential bushfire risk of the development such as siting, access, water supply and vegetation management (for example pre-application advice from the SA Country Fire Service Development Assessment Unit)
- Any design techniques to reduce the potential for trapping burning debris against proposed buildings or structures (for example enclosing gaps between the dwelling floor and the ground)



- The type of surface material used for existing and proposed roads (for example bitumen, concrete, gravel, compacted rubble)
- Any excavation, earthworks and embankments required for the proposed development, including details of how soil erosion will be prevented
- The visual impact of the proposed building(s), including colour and type of external materials to be used (include elevations of structures to give a visual impression of the proposed development).

Additional information for land division proposals

- The proposed number of allotments including their dimensions and area
- The area to be covered by proposed and or existing buildings
- The nature and location of bushfire buffer and asset protection zones
- The location of easements.

INFORMATION REQUIRED FOR BUILDING RULES CONSENT

Specific construction details of the proposed building will be required, including:

- The type of flooring system to be used (concrete, metal, timber) and the method of enclosing the sub-floor space, if required. The distance between the ground level and the underside of the floor framing should be indicated if the building is elevated.
- The materials used for any supporting posts, columns, stumps, piers and poles.
- Details of any post supports and their distance above ground/paving level.
- The materials used for external walls. Information should be provided about the type of sarking if the external walls are framed walls.
- Information about the type of windows (including louvres), external doors and screens/shutters to be installed. External doors must be fitted with draught protection devices and leadlight windows require special protection.
- Information about the material used to protect vents and weepholes from sparks and embers.



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

- The type of roof covering to be used, the method/s for sealing the roof/wall junction, any gaps under corrugations and penetrations through the roof cladding. If the roof is tiled information about the sarking must be provided.
- The nature (openable or unopenable) and location of any roof-lights and the materials used for the frame, lining, diffusers and screens.
- The location of roof ventilators and roof-mounted evaporative cooling units used, the material used for these units and any screens required to protect openings.
- Information about the water and gas service pipes. They must be buried 300mm below finished ground level or be of metal.
- Information about the materials used to construct decks and verandas and the method of enclosing the sub-floor space, if required.
- If the building is located in a **high** bushfire protection area, documentation supporting the bushfire attack category determined from the site assessment.



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009

APPENDIX A: Regulation 78 of the *Development Regulations 2008*

The following extract from the *Development Regulations 2008* is used for assessing compliance with the building rules.



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



Minister's Code

Undertaking development in Bushfire Protection Areas

February 2009

Development Regulation 78

78- Building Rules: bushfire prone areas

- (1) For the purposes of Performance Requirement GP5.1—Volume 1, and P2.3.4—Housing Provisions—Volume 2, of the *Building Code*, a building is in a bushfire prone area if—
 - (a) it is in an area referred to in Schedule 18; or
 - (b) it is an area identified as a *medium or high bushfire risk area* by the relevant Development Plan.
- (2) If—
 - (a) application is made for building rules consent for building work in the nature of an alteration to a Class 1, 2 or 3 building under the *Building Code*; and
 - (b) the building is in a bushfire prone area under subregulation (1); and
 - (c) the total floor area of the building would, after the completion of the proposed building work, have increased by at least 50% when compared to the total floor area of the building as it existed 3 years before the date of the application (or, in the case of a building constructed since that time, as it existed at the date of completion of original construction),then the relevant authority may require, as a condition of consent, that the entire building be brought into conformity with the relevant requirements of the Building Rules for bushfire protection.
- (3) A person who undertakes building work in a bushfire prone area under subregulation (1) must comply with the requirements of *Minister's Specification SA 78* insofar as it is relevant to the particular building work (in addition to the requirements of the *Building Code*).
- (4) If—
 - (a) application is made for building rules consent for building work; and
 - (b) the building (or proposed building) is in an area identified as a *general bushfire risk area* by the relevant Development Plan,then—
 - (c) if the building work involves—
 - (i) the construction of a Class 1, 2 or 3 building under the *Building Code*; or
 - (ii) the construction of a Class 10 building under the *Building Code* that will adjoin a Class 1, 2 or 3 building,the building to which the building work relates must comply with Appendix F8 of the *South Australian Housing Code*; and
 - (d) —
 - (i) if the building work is in the nature of an alteration to a Class 1, 2 or 3 building under the *Building Code*; and
 - (ii) the total floor area of the building would, after the completion of the proposed building work, have increased by at least 50% when compared to the total floor area of the building as it existed 3 years before the date of the application (or, in the case of a building constructed since that time, as it existed at the date of completion of original construction),the relevant authority may require, as a condition of consent, that the entire building be brought into conformity with the relevant requirements of Appendix F8 of the *South Australian Housing Code*.
- (5) In subregulation (4)—

construction, in relation to a building, means building or re-building, or erecting or re-erecting.



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009

APPENDIX B: Appendix F.8 of the South Australian Housing Code (Amendment 16)

The following extract from the South Australian Housing Code is used for assessing compliance with the building rules.

The provisions are current at the time of publishing this Code. As the South Australian Housing Code is amended from time to time the provisions may have been superseded.

The extract is provided for guidance only.



Development Act 1993

Minister's Code
Undertaking development in Bushfire Protection Areas
February 2009



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 13
May 2006
Amdt 15
Nov 2007

Amdt 14
May 2007
Amdt 15
Nov 2007

Amdt 14
May 2007

F.8 CONSTRUCTION IN BUSHFIRE PRONE AREAS

F.8.1 Categories of bushfire attack

- (a) Where a *site* is identified in a South Australian Development Plan as being located in a general bushfire risk area, the category of bushfire attack for the *site* is low.
- (b) Where a *site* is identified in a South Australian Development Plan as being located in a medium bushfire risk area, the category of bushfire attack for the *site* is medium.
- (c) Where a *site* is identified in a South Australian Development Plan as being located in a high bushfire risk area, the category of bushfire attack for the *site* must be determined in accordance with the requirements of AS 3959.

F.8.2 Construction requirements

- (a) A Class 1a building, and a Class 10a building that is attached to or shares a common roof space with a Class 1a building, must be constructed in accordance with Table F.8.1 for the category of bushfire attack for the *site*.
- (b) For the purposes of this Appendix, fire-retardant-treated timber is timber that has been:
 - (i) weathered in accordance with the weathering regime of ASTM D2898 Method B and;
 - (ii) tested in accordance with AS/NZS 3837 to ensure that it achieves the prescribed ignition and heat release rates as contained in AS 3959.
- (c) Where external timbers are protected from the weather, the timber need not be subjected to the regime of ASTM D2898 Method B before being tested to AS/NZS 3837.
External timbers are regarded as protected if they are covered by a roof projection (or similar structure) that overhangs the external timber and extends past a notional line drawn upwards at 30° to the vertical, from the lowest part of the timber.
- (d) Hardwood with a minimum density at 12% moisture content of 650kg/m³ may be used in lieu of fire-retardant-treated timber and where hardwood is used in lieu of fire-retardant-treated timber, it must be selected in accordance with AS 1720.2 or Table F.8.2.

TABLE F.8.2 Density of common hardwoods

Timber species Standard trade name	Classification	Density (12%) M.C kg/m ³
Gum-river red	H	900
Jarrah	H	800
Kapur	H	750
Karri	H	900
Kwila (Merbau)	H	850
Meranti-dark red	H	650
Turpentine	H	950



Development Act 1993

Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000
Amdt 15
Nov 2007

Amdt 14
May 2007
Amdt 15
Nov 2007

TABLE F.8.1 CONSTRUCTION REQUIREMENTS FOR LOW, MEDIUM, HIGH AND EXTREME CATEGORIES OF BUSHFIRE ATTACK

FLOORING SYSTEMS	
1. Low bushfire attack category	
(a)	Concrete slab on ground.
(b)	Suspended concrete floor.
(c)	A framed floor, the underside of which is greater than 600mm above ground level must have the sub-floor space completely protected by – <ul style="list-style-type: none"> (i) A <i>non-combustible</i> sheet material; or (ii) A wall complying with AS 3959; or (iii) A vertical <i>non-combustible</i> sheet material that extends around the perimeter of the floor from the underside of the lowest framing member to ground level. (iv) If fibre reinforced cement sheets are used as a <i>non-combustible</i> sheet material they must have a minimum thickness of 6mm.
(d)	Framed floor where any joist and/or bearer is less than 600mm above finished ground level where (Refer Figure F.8.2.1) – <ul style="list-style-type: none"> (i) Any timber bearers, joists or flooring are of fire-retardant-treated timber; or (ii) The sub-floor space is fully enclosed with a wall complying with the medium bushfire attack category requirements of this table for an <i>external wall</i>; or (iii) The sub-floor space is fully enclosed with <i>non-combustible</i> sheet material that extends not less than 400mm above finished ground level and to the bottom of the wall cladding material. If fibre reinforced cement sheets are used for this purpose, the sheets must have a minimum thickness of 6mm.
2. Medium bushfire attack category	
	As per requirements for low bushfire attack category.
3. High bushfire attack category	
	As per requirements for low bushfire attack category.
4. Extreme bushfire attack category	
	As per requirements for low bushfire attack category.
SUPPORTING POSTS, COLUMNS, STUMPS PIERS AND POLES (except in sub-floor spaces enclosed by one of the methods described in FLOORING SYSTEMS 1(d))	
1. Low bushfire attack category	
(a)	<i>Non-combustible</i> material
(b)	Fire-retardant treated timber for not less than 400mm above finished ground level.
(c)	Timber mounted on metal stirrups with a clearance of not less than 75mm above finished ground or paving level (Refer Figure F.8.2.2).
2. Medium bushfire attack category	
	As per requirements for low bushfire attack category
3. High bushfire attack category	
	As per requirements for low bushfire attack category.
4. Extreme bushfire attack category	
	As per requirements for low bushfire attack category except that all timber must be fire retardant treated timber.

Amdt 16
May 2008

Amdt 6
July 2002
Amdt 16
May 2008

Amdt 5
Nov 2000
Amdt 16
May 2008

Amdt 6
July 2002
Amdt 14
May 2007



Development Act 1993

Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000
Amdt 14
May 2007

EXTERNAL WALLS	
1. Medium bushfire attack category	(a) Masonry, concrete or earthwall construction for the external leaf. (b) Framed wall with – (i) <i>Sarking</i> having a Flammability Index of not more than 5; or (ii) An insulation material conforming with the appropriate standard for that material. (c) Timber logs with all joints between the logs gauge-planed and sealed. (d) Wall cladding of <i>non-combustible</i> material or fire retardant timber must be provided within 400mm of finished ground level, paving level or any balcony or deck with solid flooring.
2. High bushfire attack category	As per requirements for medium bushfire attack category, except that – (a) PVC cladding must not be used; and (b) Timber wall cladding must be of fire-retardant treated timber.
3. Extreme bushfire attack category	As per requirements for high bushfire attack category.
WINDOWS	
1. Medium bushfire attack category	The openable part of a <i>window</i> , including louvres, must be screened with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.
2. High bushfire attack category	As per requirements for medium bushfire attack category, except that – (a) where timber is used, it must be fire-retardant treated timber; and (b) where leadlight windows are used, they must be protected by shutters made of <i>non-combustible</i> material or toughened glass. (c) Aluminium mesh must not be used in the <i>window</i> screens.
3. Extreme bushfire attack category	As per requirements for high bushfire attack category, except that if the <i>windows</i> are not protected by <i>non-combustible</i> shutters they must be glazed with toughened glass.
EXTERNAL DOORS	
1. Medium bushfire attack category	External doors must be fitted with – (a) weather strips or draught excluders to prevent the build-up of burning debris beneath the door; and (b) tight-fitting screen doors with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.
2. High bushfire attack category	As per requirements for medium bushfire attack category, except that – (a) aluminium mesh must not be used in the screen door; and (b) if leadlight <i>glazing</i> panels are used in the door, they must be protected by shutters made from <i>non-combustible</i> material or toughened glass.
3. Extreme bushfire attack category	As per requirements for high bushfire attack category except that (a) Timber doors must be fire retardant treated or have a <i>non-combustible</i> covering on the external surface; or (b) Doors must be protected by <i>non-combustible</i> shutters; or (c) Doors must be solid-core having a minimum thickness of 35mm.

Amdt 6
July 2002

Amdt 5
Nov 2000

Amdt 6
July 2002
Amdt 14
May 2007

Amdt 5
Nov 2000

Amdt 14
May 2007

Amdt 6
July 2002



Development Act 1993

Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000
Amdt 15
Nov 2007

Amdt 6
July 2002

Amdt 5
Nov 2000
Amdt 14
May 2007

Amdt 6
July 2002

Amdt 5
Nov 2000
Amdt 14
May 2007

VENTS AND WEEPHOLES	
1. Low bushfire attack category	Vents to sub-floor spaces must be protected with spark guards made from corrosion resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.
2. Medium bushfire attack category	Vents to sub-floor spaces and weepholes must be protected with spark guards made from corrosion resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.
3. High bushfire attack category	As per requirements for medium bushfire attack category, except that aluminium mesh must not be used in the spark guards.
4. Extreme bushfire attack category	As per requirements for high bushfire attack category.
ROOF COVERING, EAVES AND FASCIAS	
1. Medium bushfire attack category	<ul style="list-style-type: none"> (a) Timber shakes or shingles must not be used for the roof covering. (b) Sheet roofing must be metal or fibre-reinforced cement. (c) Gaps under corrugations or ribs of sheet roofing must be sealed or protected at the wall or fascia line by – <ul style="list-style-type: none"> (i) Fully <i>sarking</i> the roof; or (ii) Providing corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm, profiled metal sheet, neoprene seal or compressed mineral wool. (d) Rib caps and ridge capping on sheet roofing must be preformed or the gaps between the capping and the sheeting sealed or protected in accordance with (c) (e) The roof/wall junction must be sealed in accordance with Figure F.8.2.3 by – <ul style="list-style-type: none"> (i) The use of fascia and eaves lining; or (ii) Sealing the gaps between the rafters at the line of the wall with a <i>non-combustible</i> material. (f) Tiled roofs must be fully sarked, including the ridge, and the <i>sarking</i> must be located directly beneath the tiling battens. (g) Penetrations through the roof cladding for vent pipes and the like must be sealed with <i>non-combustible</i> collar or fire-retardant sealant. (h) Any <i>sarking</i> used in the roof must have a Flammability Index of not more than 5.
2. High bushfire attack category	As per requirements for medium bushfire attack category, except that – <ul style="list-style-type: none"> (a) All roof sheeting must be <i>non-combustible</i> and sarked; and (b) Timber eaves lining and joining strips must be of fire-retardant treated timber; and (c) Fascias must be <i>non-combustible</i> or of a fire-retardant treated timber.
3. Extreme bushfire attack category	As per requirements for high bushfire attack category except that – <ul style="list-style-type: none"> (a) Fibre reinforced cement or aluminium sheet must not be used for roof sheeting or fascias; and (b) Aluminium must not be used for eaves linings.
ROOF LIGHTS (Refer Figure F.8.2.4)	
1. Medium bushfire attack category	<ul style="list-style-type: none"> (a) <i>Roof light</i> penetrations and associated shafts through the roof space must be sealed with a <i>non-combustible</i> sleeve or lining (b) A <i>roof light</i> may consist of thermoplastic sheet in a metal frame, provided that the diffuser at ceiling level is of wired or toughened glass in a metal frame. (c) Openings in ventilated <i>roof lights</i> must be provided with corrosion resistant steel or bronze mesh having a maximum aperture size of 1.8mm.



Development Act 1993

Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 14 May 2007	2. High bushfire attack category
	As per requirements for medium bushfire attack category, except that <i>roof light glazing</i> must be of wired glass. Thermoplastic material or toughened glass must not be used.
Amdt 6 July 2002	3. Extreme bushfire attack category
	As per requirements for high bushfire attack category.
Amdt 5 Nov 2000	ROOF VENTILATORS
	1. Medium bushfire attack category
	All components of roof ventilators, including rotary ventilators, must be of <i>non-combustible</i> material and have <i>ventilation openings</i> protected by corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8mm.
	2. High bushfire attack category
	As per requirements for medium bushfire attack category.
Amdt 6 July 2002	3. Extreme bushfire attack category
	As per requirements for medium bushfire attack category.
Amdt 5 Nov 2000	ROOF-MOUNTED EVAPORATIVE COOLING UNITS
	1. Medium bushfire attack category
	All openings into the cooling unit must be protected by corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.
	2. High bushfire attack category
	As per requirements for medium bushfire attack category, except that the outer case of the evaporative cooling unit must be of <i>non-combustible</i> material.
Amdt 6 July 2002	3. Extreme bushfire attack category
	As per requirements for high bushfire attack category.
Amdt 5 Nov 2000 Amdt 14 May 2007	GUTTERS AND DOWNPIPES
	1. Medium bushfire attack category
	Materials or devices used to stop leaves collecting in gutters must have a Flammability Index of not more than 5.
	2. High bushfire attack category
	As per requirements for medium bushfire attack category.
Amdt 6 July 2002	3. Extreme bushfire attack category
	As per requirements for medium bushfire attack category.
Amdt 5 Nov 2000	SERVICE PIPES (water and gas)
	1. Medium bushfire attack category
	Piping for water and gas supplies must – (a) be buried to a depth of not less than 300mm below finished ground level; or (b) be of metal.
	2. High bushfire attack category
	As per requirements for medium bushfire attack category.
Amdt 6 July 2002	3. Extreme bushfire attack category
	As per requirements for medium bushfire attack category.



Development Act 1993

Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000
Amdt 15
Nov 2007

VERANDAHS AND DECKS

1. Low bushfire attack category

- (a) Slab on ground or suspended concrete slab.
- (b) Any supporting posts or columns must comply with the medium bushfire attack category requirements of this table for supporting posts, column stumps, piers and poles.
- (c) Any supporting walls must comply with the medium bushfire attack category requirements of this table for *external walls*.
- (d) Where sheeted or tongued and grooved solid flooring is used, the flooring system must comply with the low bushfire attack category requirements of this table for flooring systems.
- (e) Where a timber deck is used –
 - (i) The gap between the timber deck flooring must not be less than 5mm; and
 - (ii) To facilitate access for extinguishment, the perimeter of the deck must not be enclosed or access to the space beneath the deck impeded; and
 - (iii) The timber deck flooring must be separated from the remainder of the building in a manner that will not spread the fire into the building.

2. Medium bushfire attack category

As per the requirements for low bushfire attack category.

3. High bushfire attack category

As per requirements for low bushfire attack category, except that if spaced timber deck flooring is used, fire-retardant treated timber must be used for the decking material.

4. Extreme bushfire attack category

As per requirements for high bushfire attack category, except that all materials (including any *balustrades*) must be *non-combustible* or if timber is used it must be fire retardant treated.

Amdt 16
May 2008

Amdt 6
July 2002



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000
Amdt 15
Nov 2007
Amdt 16
May 2008

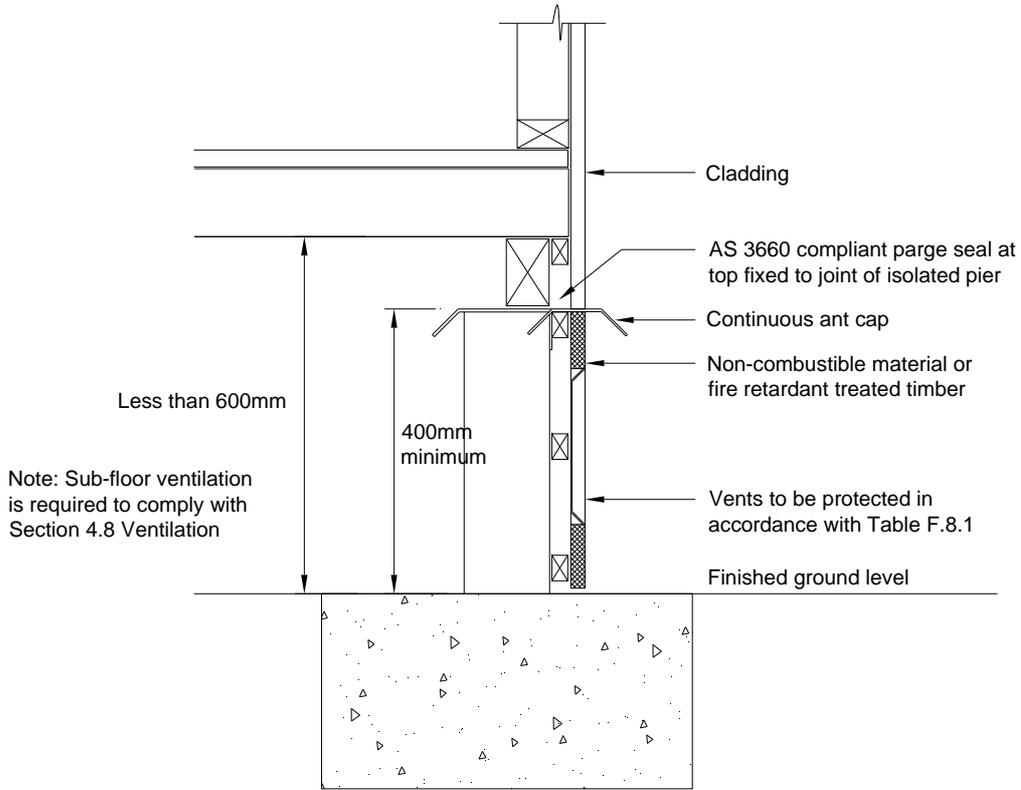


FIGURE F.8.2.1 Protection of sub-floor spaces with less than 600mm clearance

Amdt 14
May 2007

Amdt 5
Nov 2000

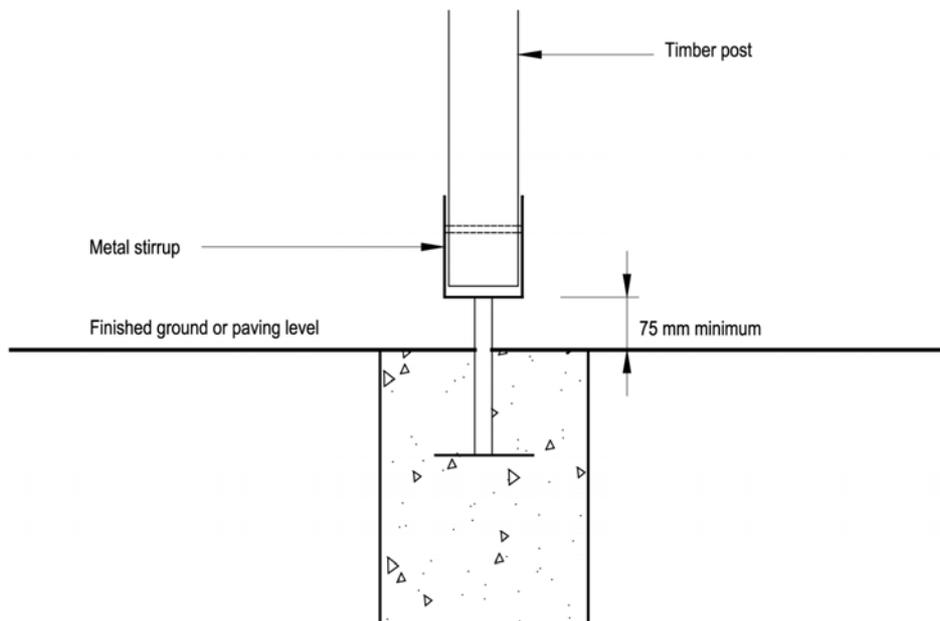


FIGURE F.8.2.2 Metal stirrup clearance

Amdt 14
May 2007



Minister's Code Undertaking development in Bushfire Protection Areas February 2009

Amdt 5
Nov 2000

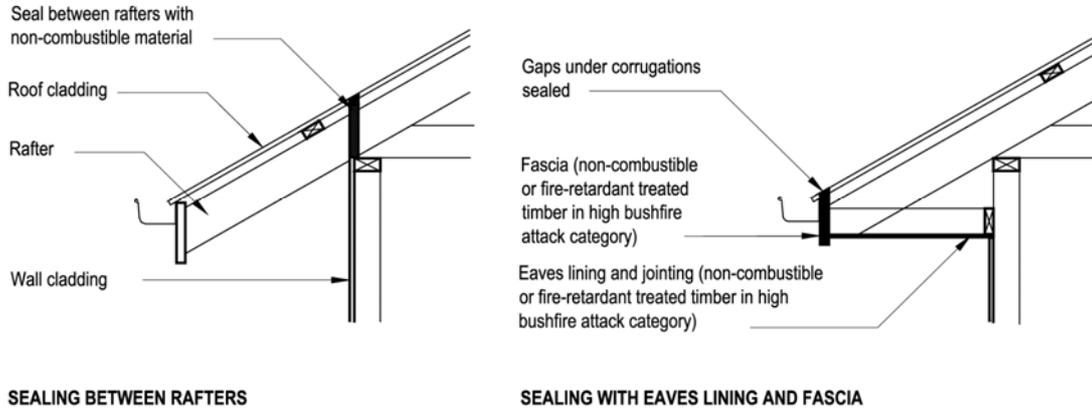


FIGURE F.8.2.3 Sealing roof/wall junction

Amdt 5
Nov 2000

Amdt 11
Jan 2004

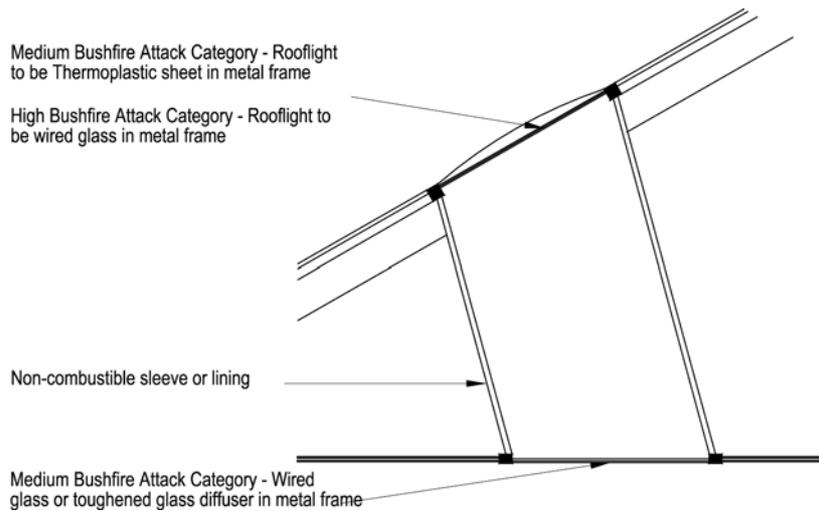


FIGURE F.8.2.4 Rooflights

Amdt 14
May 2007

