

# BAL40 Windows and Doors



**CAPRAL**  
ALUMINIUM



**BAL40**  
TESTED AND CERTIFIED

Protecting buildings against bushfires  
is a part of Australian living  
Capral Aluminium understands this

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Many Australians choose to live amongst the beauty and tranquility of our unique bushland.

However, protecting buildings in bushfire prone areas presents challenges in building and renovating. Homes today must meet the requirements of building regulations and standards, with Australian Standard AS3959 having been updated and republished in response to devastating bushfires.

The key factors for building in bushfire prone areas are improving the ability of buildings to better withstand the initial fire attack, and hence providing the building occupants with a high level of protection.

# CAPRAL ALUMINIUM

Capral is proud to be an expert in creating glazing solutions for the building industry. Our comprehensive range of door, window, framing systems and security screens have been developed and tested, to meet and exceed NCC requirements for compliance under Australian Standard AS3959-2009 for windows and doors in areas rated up to BAL-40.

Capral Aluminium products are engineered, tested and certified to withstand the conditions likely to occur in BAL-40 zones.

They are designed to help you, protect your home without compromising on style, choice, efficiency and functionality.

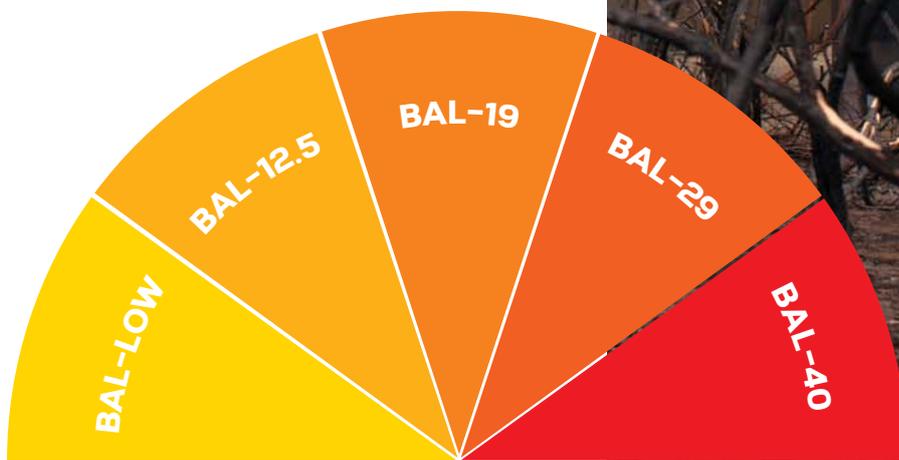
Our products blend seamlessly into the aesthetic of any building, focusing not only on cost but the value that Capral products add.

**BAL40**  
TESTED AND CERTIFIED

# Bushfire Attack Level Classifications

Australian Standard AS3959 classifies the different bushfire intensity levels that a building could experience during a bushfire.

These are referred to as Bushfire Attack Levels or BALs for short.



*BAL-40 is currently the maximum bushfire attack level that Capral window and door systems can be used.*



In the Australian Standard AS3959, they have classified different bushfire intensity levels that a home may experience during a bushfire. These are referred to as Bushfire Attack Levels, or BALs for short.

There are six bushfire attack levels in total:

- BAL-FZ Flame Zone
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-Low.

These individual levels\* are based on:

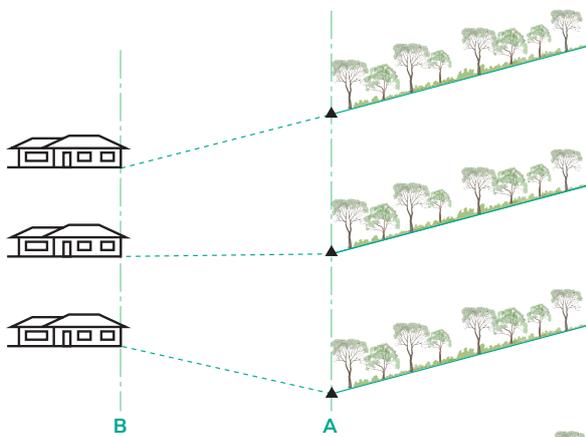
- The region where you live
- The vegetation type around your property
- The distance from your home to individual vegetation types
- Slope on the property.

\*The Bushfire Attack Levels of your home is ultimately determined by a suitably qualified building designer.

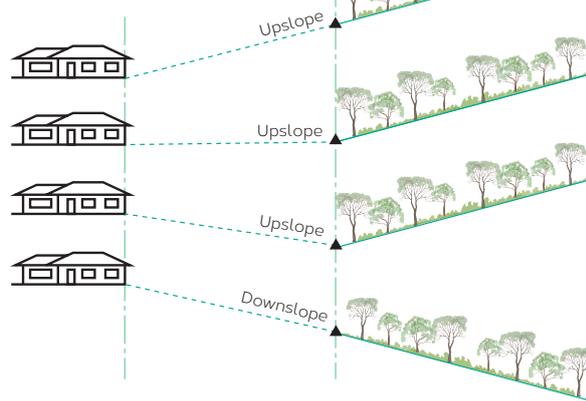
### FACTORS AFFECTING BUSHFIRE ATTACK LEVEL

Bushfire Attack Level – BAL is determined by the following factors:

#### Distance from vegetation

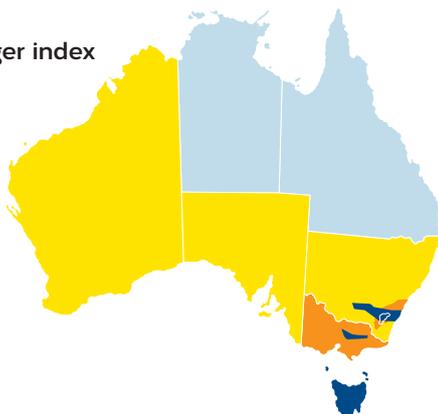


#### Effective Slope



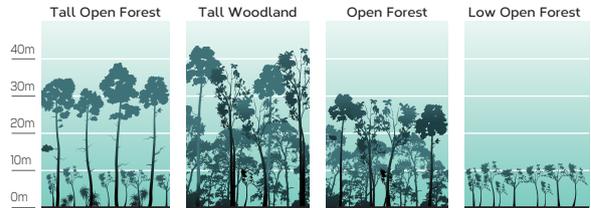
#### Fire Danger index

- 100
- 80
- 50
- 40



#### Type of Vegetation

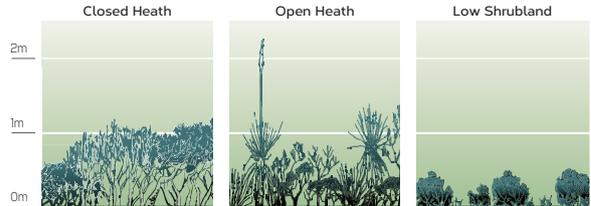
##### A. FOREST



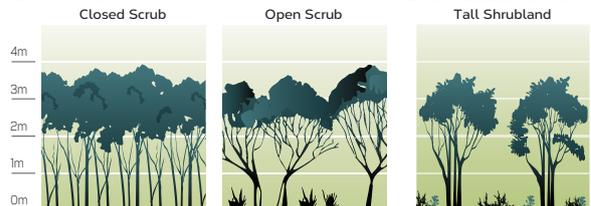
##### B. WOODLAND



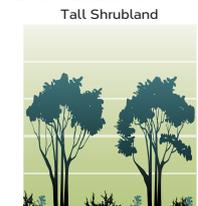
##### C. SHRUBLAND



##### D. SCRUB



##### E. MALLEE/MULGA





## Bushfire Attack Levels

### A guide for windows and doors in bushfire prone areas

Australian Standards AS3959-2009 is primarily concerned with improving the ability of buildings in designated bushfire prone areas to better withstand attack from bushfire thus giving a measure of protection to the building occupants (until the fire front passes) as well as to the building itself.

Research is continuing with regards to the effects of bushfires on buildings, determination of bushfire prone areas within various states and particular construction techniques designed to maximise the performance of buildings when subjected to bushfire attack. The outcomes of this research will be reflected in subsequent editions of AS3959.

#### **BUSHFIRE ATTACK LEVELS (BAL)**

<b>BAL</b>	<b>Predicted bushfire attack and level of exposure</b>
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 <sup>2</sup> .
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 <sup>2</sup> .
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. up to 40kw m <sup>2</sup> .
BAL-FZ	Direct exposure to flames from fire front in addition to heat flux and ember attack.greater than 40kw m <sup>2</sup> .

Capral's window and door systems are rigorously and comprehensively tested to meet and exceed relevant Australian standards up to BAL-40 and fully backed by our technical and engineering support.

The Capral range of **Bushfire Attack Level** compliant windows and doors include the following:

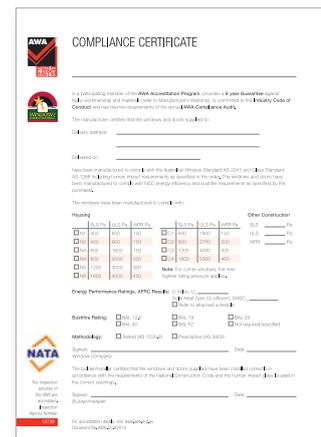
Urban range	AGS series
Urban 580 Sliding Window	AGS 950 Sliding Window
Urban 581 Double Hung	AGS 419 Flushline
Urban 582 Awning/Casement Window	AGS 35 Series Awning Casement Window
Urban 582 Fixed Window	AGS 400 Narrowline
Urban 584 Sliding Door	AGS 900 Sliding Door
Urban Plus 597 Hinged Door	AGS 225 Hinged Door
Urban Plus Fixed Light	Artisan Folding Door

### PRODUCT IDENTIFICATION

All Capral BAL40 windows and doors should be issued with an official AWA Compliance Certificate as shown on right.

### PRODUCT SPECIFICATION

When specifying Capral window and door systems for please ensure your Builder/Building Designer is aware of your home and land Bushfire Attack Level requirements during design/specification and tender. These are used to ensure the Capral products are fabricated correctly using specific mohair, seals, hardware and components.



### SECURITY SCREENS

Capral Aluminium BAL-40 rated systems have been successfully tested to comply with relevant Australian Standards without the use of screens. However all openable portions of the windows are required to be screened regardless of the tested outcome. Capral's Amplimesh Supascreen products are fully compliant with this screening requirement up to and including BAL40, whilst Capral's Intrudaguard products are fully compliant up to and including BAL 29.



## Window and door requirements for bushfire prone areas

Construction in bushfire prone areas add a number of additional considerations when designing buildings. There are various options available to designers and builders to meet the requirements of the building regulations and standards.

The following sets out the various guidelines relating to windows and doors.



## BAL-LOW WINDOWS AND DOORS

Standard window and door products may be used at this level. There are no special requirements.

**BAL  
LOW**

## BAL-12.5 WINDOWS

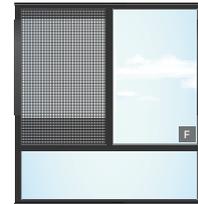
A tested Capral window system, as noted on page 5, can be used where the operable portion of the window is screened internally or externally with Amplimesh Supascreen or Intrudaguard;

**OR**

The following deemed-to-satisfy approach can be used:

- All openings must be screened internally or externally with Amplimesh Supascreen or Intrudaguard.
- Where glazing is less than 400mm from the ground or other structures at an angle less than 18 degrees to the horizontal, Grade A safety glass minimum 4mm must be used.
- If windows incorporate glazing within 400mm to the ground, they must be manufactured from aluminium.
- Externally fitted hardware that supports the sash in its function must be metal.

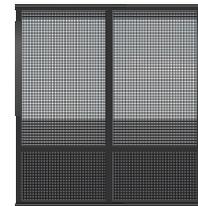
Standard windows must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

**BAL  
12.5**

## BAL-12.5 SIDE-HUNG EXTERNAL DOORS AND SLIDING DOORS

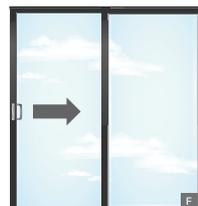
A tested Capral door system, as mentioned on page 5, can be used and there is no requirement to screen the operable part of the door;

**OR**

The following deemed-to-satisfy approach can be used:

- Where glazing is incorporated, glass shall be Grade A safety glass.
- No requirement to screen the operable portion of sliding doors, although if screened, must be with Amplimesh Supascreen or Intrudaguard screening systems.
- Where any part of the door assembly is within 400mm to the ground or other structures less than 18 degrees to the horizontal, door frames must be made from aluminium.
- Fully framed glazed doors and frames must be made from aluminium. Weather strips and draught seals to be fitted to base and sides.
- All Sliding doors must be tight fitting into their frames. Externally fitted hardware that supports the sash in its function must be metal.

Standard doors must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

**BAL-19 WINDOWS**

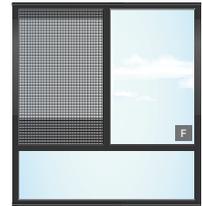
A tested Capral window system as noted on page 5 can be used where the operable portion of the window is screened internally or externally with Amplimesh Supascreen or Intrudaguard;

**OR**

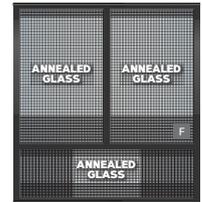
The following deemed-to-satisfy approach can be used:

- Where annealed glass is used, windows must be fully screened externally with Amplimesh Supascreen or Intrudaguard.
- Where 5mm toughened glass is used throughout, all openings must be screened internally or externally with Amplimesh Supascreen or Intrudaguard.
- Where glazing is less than 400mm from the ground or other structures at an angle less than 18 degrees to the horizontal and more than 110mm in width, 5mm toughened glass must be used.
- Externally fitted hardware that supports the sash in its function, must be metal.
- If window assemblies are within 400mm to the ground, they must be manufactured from aluminium.

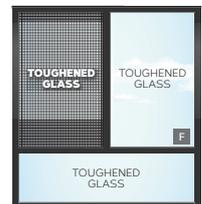
Standard windows must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

**BAL-19 SIDE-HUNG EXTERNAL DOORS AND SLIDING DOORS**

A tested Capral door system as mentioned on page 5 can be used. There is no requirement to screen the operable part of the door.

**OR**

The following deemed-to-satisfy approach can be used:

- Where doors incorporate glazing, the glass must be toughened 5mm minimum.
- Where any part of the door assembly is within 400mm to the ground or other structures less than 18 degrees to the horizontal.
- Fully framed glazed doors and frames must be made from aluminium. Weather strips and draught seals to be fitted to base and sides.
- All Sliding doors must be tight fitting into their frames.
- No requirement to screen the operable portion of sliding doors although if screened, must be with Amplimesh Supascreen or Intrudaguard screening systems.

Standard doors must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

### BAL-29 WINDOWS

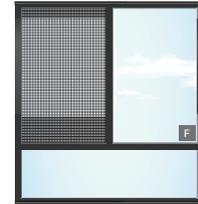
A tested Capral window system as noted on page 5 can be used, where operable portion of the window is screened internally or externally with Amplimesh Supascreen or Intrudaguard.

**OR**

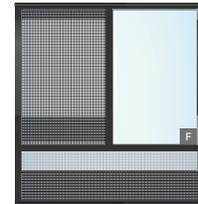
The following deemed-to-satisfy approach can be used:

- Window assemblies must be manufactured from aluminium.
- Glazing must be a minimum of 5mm toughened glass.
- Where glazing is less than 400mm from the ground or other structures at an angle less than 18 degrees to the horizontal extending more than 110mm in width, that portion must be externally screened with Amplimesh or Intrudaguard.
- Externally fitted hardware that supports the sash in its function must be metal.
- The operable portion must be screened internally or externally with Amplimesh Supascreen or Intrudaguard.

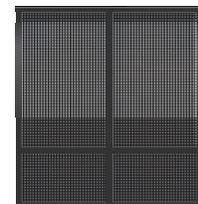
Standard windows must be completely protected by bushfire shutters complying with AS3959:2009.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

### BAL-29 SIDE-HUNG EXTERNAL DOORS

A tested Capral door system as mentioned on page 5 can be used. There is no requirement to screen the operable part of the door.

**OR**

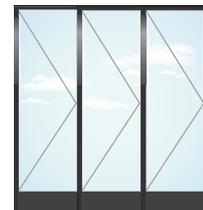
The following deemed-to-satisfy approach can be used:

- Where doors incorporate glazing, the glass must be toughened 6mm minimum.
- Externally fitted hardware that supports the panel in its function must be metal.
- Where glazing is less than 400mm from the ground or other structures at an angle less than 18 degrees to the horizontal extending more than 110mm in width, that portion must be externally screened with Amplimesh Supascreen or Intrudaguard.
- No requirement to screen the operable portion of hinged doors, although if screened, must be with Amplimesh Supascreen or Intrudaguard screening systems.
- Fully framed glazed doors and frames must be made from aluminium. Weather strips and draught seals to be fitted to base and sides.

Standard doors must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

## BAL 29

### BAL-29 SLIDING DOORS

A tested Capral door system as noted on page 5 can be used. There is no requirement to screen the operable part of the door.

#### OR

The following deemed-to-satisfy approach can be used:

- Where doors incorporate glazing, the glass must be toughened 6mm minimum.
- No requirement to screen the operable portion of hinged doors, although if screened, must be with Amplimesh Supascreen or Intrudaguard screening systems.
- Externally fitted hardware that supports the panel in its function must be metal.
- Door frames must be made from aluminium.
- Sliding doors shall be tight fitting in frames.

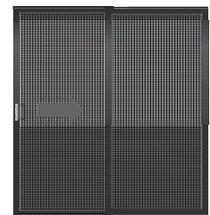
Standard doors must be completely protected by bushfire shutters complying with AS3959:2009. Alternatively completely covered by an external Amplimesh Supascreen or Intrudaguard screening system.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY

## BAL 40

### BAL-40 WINDOWS

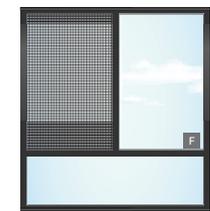
A tested Capral window system as noted on page 5 can be used, where operable portion of the window is screened internally or externally with Amplimesh Supascreen only.

#### OR

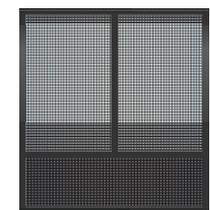
The following deemed-to-satisfy approach can be used:

- Window frames and hardware shall be metal (includes aluminium).
- Glazing must be a minimum of 6mm toughened glass.
- Both the operable and fixed portions must be screened externally with Amplimesh Supascreen only.
- Seals to stiles, head and sills shall be manufactured from silicone-based materials or a material with a flammability index of no greater than 5.

Standard windows must be completely protected by bushfire shutters complying with AS3959:2009.



TESTED SYSTEM



DEEMED-TO-SATISFY

#### ▼ Testing of BAL-40 Capral products



### BAL-40 SIDE-HUNG EXTERNAL DOORS

A tested Capral door system as mentioned on page 5 can be used. There is no requirement to screen the operable part of the door.

#### OR

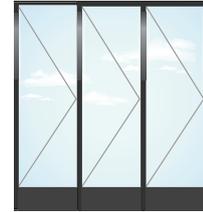
The following deemed-to-satisfy approach can be used:

- Fully framed glazed doors and frames must be made from aluminium.
- Where doors incorporate glazing, the glass must be toughened 6mm minimum.
- Externally fitted hardware that supports the panel in its function must be metal.
- Where glazing is less than 400mm to the ground or other structures at an angle less than 18 degrees to the horizontal and extending more than 110mm in width, that portion must be externally screened with Amplimesh Supascreen ONLY.
- Seals to stiles, head and sills shall be manufactured from silicone based materials with a flammability index no greater than 5.
- Side-hung doors require draught excluders installed at sill and shall be tight fitting in their frames.

Standard doors must be completely protected by bushfire shutters complying with AS3959:2009.



TESTED SYSTEM



DEEMED-TO-SATISFY



DEEMED-TO-SATISFY



### BAL-40 SLIDING DOORS

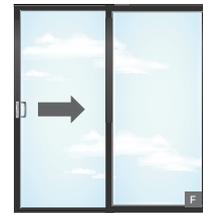
A tested Capral door system as mentioned on page 5 can be used. There is no requirement to screen the operable part of the door;

#### OR

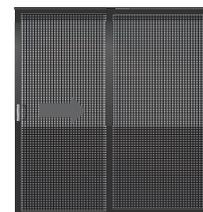
The following deemed-to-satisfy approach can be used:

- Where doors incorporate glazing, the glass must be toughened 6mm minimum.
- External screening is still required to both operable and fixed portions with Amplimesh Supascreen ONLY.
- Externally fitted hardware that supports the panel in its function must be metal.
- Frames to be made from aluminium.
- Seals to stiles, head and sills shall be manufactured from silicone based materials with a flammability index no greater than 5.
- Sliding doors shall be tight fitting in frames.

Standard doors must be completely protected by bushfire shutters complying with AS3959:2009.



TESTED SYSTEM



DEEMED-TO-SATISFY

### FLAME ZONE WINDOWS AND DOORS

Standard windows and doors can be used provided they are completely protected by bushfire shutters complying with AS3959:2009 and be made from non combustible material.







## Want to know more?

Capral Aluminium welcomes the opportunity to have one of our Specification specialists review your requirements. We have experts in all states and regions to assist you.

For further information please visit

[www.capral.com.au](http://www.capral.com.au)

or call **1800 ALUMINIUM (258 646)** to speak to one of our Specification specialists.



Capral Limited  
ABN 78 004 213 692

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[www.capral.com.au](http://www.capral.com.au)



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