

Building Element		BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ
Roof	Tiled	NR	<ul style="list-style-type: none"> <li>Fully sarked (Flammability index not more than 5)</li> <li>Installed directly below tile battens</li> <li>Must cover entire roof area including ridge and extended into gutters and valleys with no gaps where the sarking meets facias, gutters, valleys and the like.</li> </ul>				<ul style="list-style-type: none"> <li>System complies with AS1530.8.2 when tested from the outside, <i>or</i></li> <li>Having an FRL of 30/30/30 or -/30/30 when tested from the outside</li> </ul> <p>(NOTE: Testing of roof systems is currently being undertaken as there are no known systems that comply at present for use with any building material.)</p>
	Sheet	NR	<ul style="list-style-type: none"> <li>Fully sarked (Flammability index not more than 5)</li> <li>Foil-backed insulation blankets may be installed over battens</li> <li>Gaps greater than 3 mm to be sealed with                             <ol style="list-style-type: none"> <li>Mesh with a max 2 mm aperture made of corrosion resistant steel, bronze or aluminum, <i>or</i></li> <li>Mineral wool, <i>or</i></li> <li>Other non-combustible material</li> </ol> </li> </ul>				
Fascia & bargeboards		NR	NR	NR	<ul style="list-style-type: none"> <li>Bushfire-resisting timber</li> <li>Metal fixed at 450 mm centres</li> </ul>	<ul style="list-style-type: none"> <li>Complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>Complying with AS1530.8.2</li> </ul>
Eaves linings		NR	NR	NR	<ul style="list-style-type: none"> <li>4.5 mm fibre cement</li> <li>Bushfire-resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>6 mm fibre cement</li> <li>6 mm calcium silicate</li> </ul>	<ul style="list-style-type: none"> <li>FRL - /30/30, <i>or</i></li> <li>Complying with AS1530.8.2</li> </ul>
Windows		NR	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens- NR, <i>or</i></li> <li>Less than 400 mm off horz surface                             <ul style="list-style-type: none"> <li>Frames                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2 <i>or</i></li> </ol> </li> <li>Glazing: <b>4 mm</b> Grade A safety and openable part screened</li> </ul> </li> <li>Greater than 400 mm off horz surface – annealed glass – screens to all parts of window</li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens- NR, <i>or</i></li> <li>Less than 400 mm off horz surface                             <ul style="list-style-type: none"> <li>Frames                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2 <i>or</i></li> </ol> </li> <li>Glazing: <b>5 mm</b> toughened glass and openable part screened</li> </ul> </li> <li>Greater than 400 mm off horz surface – annealed glass – screens to all parts of window</li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Windows                             <ul style="list-style-type: none"> <li>Glazing:                                     <ol style="list-style-type: none"> <li>5 mm toughened glass and if less than 400 mm from a horizontal surface, screened</li> <li>Openable part to be screened</li> </ol> </li> <li>Frames – Bushfire-resisting timber</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind non-combustible bushfire shutters – NR, <i>or</i></li> <li>Window                             <ul style="list-style-type: none"> <li>Glazing – 5 mm toughened glass</li> <li>Screens to all parts of window</li> <li>Frames – metal</li> <li>Seals - Flam Index 5</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters (shutters complying with AS1530.8.2 when tested from the outside) - NR, <i>or</i></li> <li>Window system having FRL 0f - /30/ - and openable part of window screened, <i>or</i></li> <li>Window system complying with AS1530.8.2 and the openable part of the window screened</li> </ul>
External Doors	Side hung	NR	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens- NR, <i>or</i></li> <li>Unglazed Door                             <ul style="list-style-type: none"> <li>Joinery                                     <ol style="list-style-type: none"> <li>Non-combustible <i>or</i></li> <li>Solid having min. thickness of 35 mm for the lower 400 mm <i>or</i></li> <li>Hollow core with a non-combustible kickplate for the lower 400mm</li> </ol> </li> </ul> </li> <li>Glazed door                             <ul style="list-style-type: none"> <li>Glazing: as per windows</li> <li>Joinery less than 400 mm from a horizontal surface:                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2</li> </ol> </li> <li>Joinery greater than 400 mm from a horizontal surface - NR</li> </ul> </li> <li>Door jambs                             <ul style="list-style-type: none"> <li>Less than 400 mm from a horizontal surface                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2</li> </ol> </li> <li>Greater than 400 mm from a horizontal surface - NR</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens- NR, <i>or</i></li> <li>Unglazed Door                             <ul style="list-style-type: none"> <li>Joinery                                     <ol style="list-style-type: none"> <li>Non-combustible <i>or</i></li> <li>Solid having min. thickness of 35 mm for the lower 400 mm <i>or</i></li> <li>Hollow core with a non-combustible kickplate for the lower 400mm</li> </ol> </li> </ul> </li> <li>Glazed door                             <ul style="list-style-type: none"> <li>Glazing: as per windows</li> <li>Joinery less than 400 mm from a horizontal surface                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2</li> </ol> </li> <li>Joinery greater than 400 mm from a horizontal surface - NR</li> </ul> </li> <li>Door jambs                             <ul style="list-style-type: none"> <li>Less than 400 mm from a horizontal surface                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E2</li> </ol> </li> <li>Greater than 400 mm from a horizontal surface - NR</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens- NR, <i>or</i></li> <li>Unglazed Door                             <ul style="list-style-type: none"> <li>Joinery                                     <ol style="list-style-type: none"> <li>Non-combustible, <i>or</i></li> <li>Solid timber having min. thickness of 35 mm, <i>or</i></li> </ol> </li> </ul> </li> <li>Glazed door                             <ul style="list-style-type: none"> <li>Glazing: 5 mm toughen glass , lower 400 mm screened with a mesh</li> <li>Joinery - Bushfire-resisting timber</li> </ul> </li> <li>Door jambs - Bushfire-resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>Behind non-combustible bushfire shutters – NR, <i>or</i></li> <li>Unglazed Door                             <ul style="list-style-type: none"> <li>Joinery                                     <ol style="list-style-type: none"> <li>Non-combustible, <i>or</i></li> <li>Solid timber having min. thickness of 35 mm, with lower 400 mm screened with a mesh <i>or</i></li> </ol> </li> </ul> </li> <li>Glazed                             <ul style="list-style-type: none"> <li>Joinery, Non-combustible</li> <li>Glazing:- 6 mm toughened glass with lower 400 mm screened with a mesh</li> </ul> </li> <li>Door jambs - Metal</li> <li>Seals - Silicone</li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters (shutters complying with AS1530.8.2 when tested from the outside) – NR, <i>or</i></li> <li>Door system having FRL 0f - /30/ -, <i>or</i></li> <li>Door system complying with AS1530.8.2</li> </ul> <p>(Note: seals are not to compromise performance)</p>
	Sliding door	NR	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens – NR, <i>or</i></li> <li>Glazed door – Grade A safety glass                             <ul style="list-style-type: none"> <li>Joinery less than 400 mm from a horizontal surface                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E1</li> </ol> </li> <li>Joinery greater than 400 mm from a horizontal surface - NR</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens – NR, <i>or</i></li> <li>Glazed door – 5mm toughened glass                             <ul style="list-style-type: none"> <li>Joinery less than 400 mm from a horizontal surface                                     <ol style="list-style-type: none"> <li>Bushfire-resisting timber <i>or</i></li> <li>Timber species from E1</li> </ol> </li> <li>Joinery greater than 400 mm from a horizontal surface – NR</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Behind screens– NR, <i>or</i></li> <li>Glazed door                             <ul style="list-style-type: none"> <li>Glazing: 6 mm toughen glass</li> </ul> </li> <li>Doorframes:-                             <ul style="list-style-type: none"> <li>Bushfire-resisting timber</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters – NR, <i>or</i></li> <li>Glazed door                             <ul style="list-style-type: none"> <li>Glazing:- FRL - /30/ -, or 6 mm toughened glass behind screens to all parts of door</li> <li>Doorframes – metal</li> <li>Seals - Silicone</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Behind bushfire shutters (shutters complying with AS1530.8.2 when tested from the outside) – NR, <i>or</i></li> <li>Door system having FRL 0f - /30/ -, <i>or</i></li> <li>Door system complying with AS1530.8.2</li> </ul>

NR – No requirement.

Note: Construction requirements required for a higher BAL can be used for a lower BAL e.g. BAL-40 requirements can be used in BAL-19.

Building Element			BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ
External Walls	Cladding	Light-weight	NR	Any cladding within 400 mm from a horz surface :- a) Non-combustible material <i>or</i> b) Fibre-cement min 6mm thick <i>or</i> c) Bushfire-resisting timber <i>or</i> d) Timber species listed in E1		<ul style="list-style-type: none"> <li>Fibre-cement min 6mm thick <i>or</i></li> <li>steel sheet <i>or</i></li> <li>bushfire-resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>Fibre-cement min 9 mm thick <i>or</i></li> <li>steel sheet <i>or</i></li> <li>a system complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>A system complying with AS1530.8.2 when tested from outside, <i>or</i></li> <li>A system with an FRL of 30/30/30 or -/30/30 when tested from outside</li> </ul>
		Brick	NR	NR	NR	NR	NR	NR
	Framing members	NR	NR	NR	NR	NR	NR	NR
Floors (bearers, joists, flooring)	Enclosed+	NR	NR	NR	NR	NR (includes mesh walls)	NR	NR
	Unenclosed	NR	NR	NR	NR	<ul style="list-style-type: none"> <li>Flooring materials less than 400 mm a) non-combustible b) bushfire-resisting timber, <i>or</i> c) particleboard or plywood flooring the underside lined with sarking or mineral wool insulation</li> <li>Flooring material greater than or equal to 400 mm – NR</li> </ul>	<ul style="list-style-type: none"> <li>Flooring material a) non-combustible, <i>or</i> b) Timber flooring members must have the underside lined with a non-combustible materials (eg fibre cement or metal sheet), <i>or</i> c) complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>FRL of at least 30/30/30 and non-combustible surface material, <i>or</i></li> <li>Underside of combustible floor system protected with a 30 min resistant to incipient spread of fire system <i>or</i></li> <li>Complying with AS1530.8.2 when tested from the outside</li> </ul>
Sub-floor (posts, stumps, columns, etc)	Enclosed+	NR	NR	NR	NR	NR	NR	NR
	Unenclosed	NR	NR	NR	NR	<ul style="list-style-type: none"> <li>Non-combustible material <i>or</i></li> <li>Bushfire-resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>Non-combustible material, <i>or</i></li> <li>Complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>FRL of at least 30/-/- and non-combustible, <i>or</i></li> <li>Complying with AS1530.8.2</li> </ul>
Decks, steps, ramps and landings	Enclosed+	NR	<ul style="list-style-type: none"> <li>Wall enclosing sub-floor deck space first 400 mm from a horizontal surface is to be the same as for walls above</li> <li>Supports – NR</li> <li>Framing – NR</li> <li>Decking – less than 300 mm from glazed element is to be a) Non-combustible b) Bushfire resisting timber c) Timber species from E1</li> </ul>	<ul style="list-style-type: none"> <li>Walls enclosing subfloor deck space:- o Non-combustible o Bushfire resisting timber o Mesh</li> <li>Supports – NR</li> <li>Framing – NR</li> <li>Decking to be a) Non-combustible b) Bushfire resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>Walls enclosing subfloor deck space:- o Comply with wall requirements o Mesh</li> <li>Supports – NR</li> <li>Framing – NR</li> <li>Decking to be o Non-combustible o Complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>Walls enclosing subfloor deck space:- o Comply with wall requirements o Mesh</li> <li>Supports – NR</li> <li>Framing – NR</li> <li>Decking to have no gaps and be o Non-combustible, <i>or</i> o Fibre cement sheet, <i>or</i> o Complying with AS1530.8.2</li> </ul>		
	Unenclosed	NR	<ul style="list-style-type: none"> <li>Supports – NR</li> <li>Framing – NR</li> <li>Decking – less than 300 mm from glazed elements is to be a) Non-combustible b) Bushfire resisting timber c) Timber species from E1</li> </ul>	<ul style="list-style-type: none"> <li>Supports – a) Non-combustible b) Bushfire resisting timber</li> <li>Framing – a) Non-combustible b) Bushfire resisting timber</li> <li>Decking - a) Non-combustible b) Bushfire resisting timber</li> </ul>	<ul style="list-style-type: none"> <li>Supports – a) Non-combustible b) Complying with AS1530.8.1</li> <li>Framing – a) Non-combustible b) Complying with AS1530.8.1</li> <li>Decking - a) Non-combustible b) Complying with AS1530.8.1</li> </ul>	<ul style="list-style-type: none"> <li>Supports – a) Non-combustible b) Complying with AS1530.8.2</li> <li>Framing – a) Non-combustible b) Complying with AS1530.8.2</li> <li>Decking - a) Non-combustible, <i>or</i> b) Fibre cement sheets, <i>or</i> c) Complying with AS1530.8.2</li> </ul>		
Balustrades, handrails		NR	NR	NR	NR	<p>Greater than 125 mm from glazing or combustible wall or 0 mm from non-combustible wall – NR</p> <p>Less than or equal to 125 mm from glazing or combustible wall to be non-combustible or bushfire resisting timber</p>	<p>Greater than 125 mm from glazing or combustible wall or 0 mm from non-combustible wall – NR</p> <p>Less than or equal to 125 mm from glazing or combustible wall to be non-combustible</p>	<p>Greater than 125 mm from glazing or combustible wall or 0 mm from non-combustible wall – NR</p> <p>Less than or equal to 125 mm from glazing or combustible wall to be non-combustible</p>

NR – No requirement.

+ Wall enclosing sub-floor space to be of the same construction as for external walls.

Note: Construction requirements required for a higher BAL can be used for a lower BAL e.g. BAL-40 requirements can be used in BAL-19.

Building with Timber – Construction requirements for Bushfire Attack Levels as per AS3959-2009 *Construction of buildings in bushfire prone areas*  
(This summary of timber requirements, extracted from AS3959-2009, does not cover all aspects of AS3959 which should be referred to when designing and specifying to the standard.)

For further information in Victoria contact: Wood Products Victoria, 03 9611 9044  
or visit <http://www.timber.org.au> and look under Design& Construction / Bushfire Performance

Wood Products Victoria Ltd