TECHNICAL NOTE

Construction in Bushfire Prone Areas - Roofing

BAL-12.5 is primarily concerned with the protection from ember attack and radiant heat up to and including 12.5 kW/m² where the site is less than 100m from the source of bushfire attack.
BAL-19 is primarily concerned with the protection from ember attack and radiant heat greater than 12.5 kW/m² up to and including 19 kW/m².
BAL-29 is primarily concerned with the protection from ember attack and radiant heat greater than 19 kW/ m² up to and including 29 kW/m².
BAL-40 is primarily concerned with the protection from ember attack and radiant heat greater than 29 kW/ m² up to and including 40 kW/m².

Construction details comply with AS 3959-2018 sections 5.6, 6.6, 7.6 and 8.6 for Roofs

Sections:

BAL-12.5	5.6.1 a), b), c).
BAL-19	6.6.1 a), b), c).
BAL-29	7.6.1 a), b), c), d).
BAL-40	8.6.1 a), b), c), d), e).

General

Gerard tiles in satin and textured finishes are non-combustible.

- Tested to AS 1530.3 which meets the Building Code of Australia as being non-combustible.
- The roof junctions should be sealed, to prevent openings greater than 3mm.
- Roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made from non-combustible material or a mesh or perforated sheet with a maximum aperture of 2mm, made of corrosion resistant steel or aluminium.
- Pipe or conduit that penetrates the roof shall be non-combustible.
- Evaporative coolers are not to be installed.

Sarking

- Should have a flammability index of no more than 5. (AS 1530.2).
- Sarking should be installed on top of the roof framing to prevent openings greater than 3mm, roof battens are to be fixed above the sarking except for the eave where it is installed over the eave batten.
- Cover the entire roof framing including ridges and hips.
- Extend into gutters and valleys, sarking should be laid up the valley area, under where the valley tray will sit.

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- Should be installed so that there are no gaps that would allow the entry of embers where the sarking meets fascia, gutters, valleys and walls.

Minimum Fastening Requirements – Wind Regions A & B

Profile	Fastener Type	Quantity	Wind Class	Substrate (Min Requirements)
Shake Milano Senator Classic Heritage Rockport Antica Tudor	50mm x 2.8mm galvanised nails	5 per tile	Up to and including N3	50x40mm Timber Battens
		7 per tile	Up to and including N4	50x40mm Timber Battens
	10G x 40mm hot dip galvanised hex head steel screws	5 per tile	Up to and including N6 **Note, recommended Batten Fasteners suitable to up N4. Above N4, load requirements to be calculated per AS 1684.2	50x40mm F5 graded seasoned softwood timber battens
	Batten Fasteners: 14G x 90mm Type 17 bugle head batten screw**	1 per rafter		
	9G x 40mm hot dip galvanised hex head steel screws	4 per tile	Up to and including N3	0.55mm G550 Steel Battens
Calibre CF Shake CF Shingle CF Slate	9G x 40mm hot dip galvanised hex head steel screws	5 per tile	Up to and including N4	15mm F11 grade structural plywood or 50x40mm Timber Battens*
	12G x 25mm hot dip galvanised hex head steel screws	5 per tile	Up to and including N6 **Note, recommended Plywood Fasteners suitable to up N4. Above N4, load requirements to be calculated per AS 1684.2	15mm F11 grade structural plywood or 50x40mm F5 graded seasoned softwood timber battens*
	Plywood Fasteners: 10G x 50mm Countersunk self drilling timber screws**	at 200mm spacings		

*50x40mm Timber Battens suitable for CF Shake and CF Shingle only

**Minimum fixing requirements per AS 1684.2.

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TECHNICAL NOTE

Minimum Fastening Requirements – Wind Regions C & D

Profile	Fastener Type	Quantity	Wind Class	Substrate (Min Requirements)
Shake Milano Senator Classic Heritage Rockport Antica Tudor	Tile Fastening: 2.8 x 50mm galvanised nails	8 nails horizontally through the nose + 4 vertically through the head	Up to and including C2	50x40mm F5 graded seasoned softwood timber battens at 900mm rafter spans
	Additional Eaves Fastening: 12G x 50mm Type 17 hex head screw with seal	8 vertically across the front of the first course at the eaves		
	Batten Fasteners: 14G x 100mm Type 17 bugle head batten screw*	1 per rafter		
	Alternative Tile Fastening: 9G x 38mm hex head needlepoint screws	5 screws horizontally through the nose	Up to and including C2	50x40mm F5 graded seasoned softwood timber battens at 900mm rafter spans
Calibre CF Shake CF Shingle CF Slate	Tile Fastening: 12G x 25mm hot dip galvanised hex head steel screws	6 per tile	Up to and including C2	15mm F11 grade structural plywood
	Plywood Fasteners: 10G x 50mm Countersunk self drilling timber screws*	at 200mm spacings		

*Minimum fixing requirements per AS 1684.3

Tile installation

- Tiles should be turned up 40 mm against ridge, hip, gable battens and walls/roof junctions.
- Tiles should be turned down into valleys so that they finish within 5mm of the valley tray and the turn down is pulled hard against turn back of the top of the valley tray.

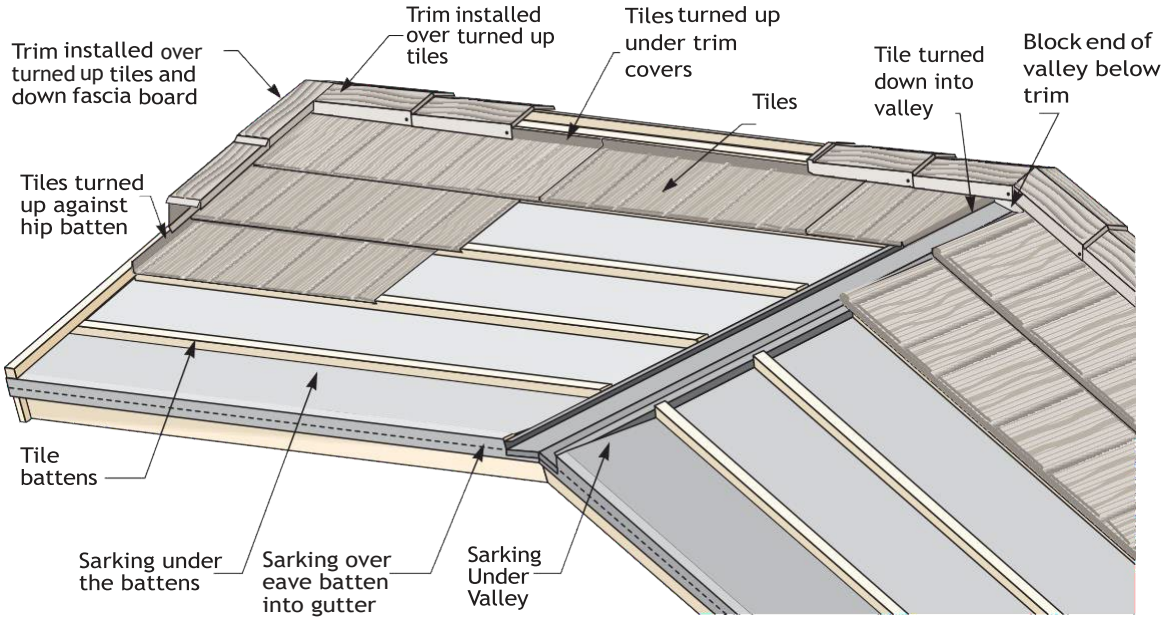
Roof accessories installation

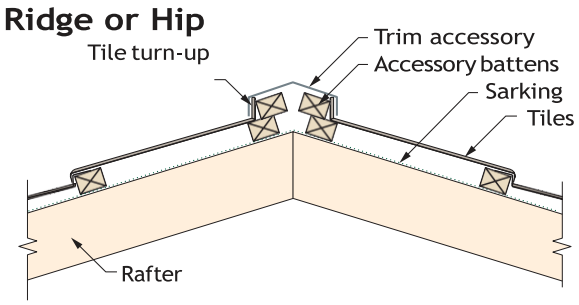
- Roof accessories (trims and flashings) should be installed tightly over the turned-up tiles and fastened in place as specified by Gerard.
- The top of the valley, where it intersects with the ridge, should have a plate installed to close any gap at the end of the valley.

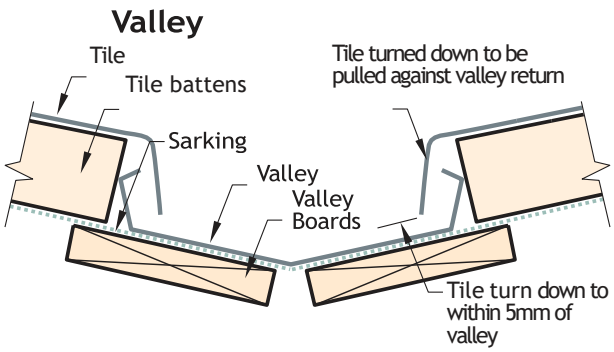
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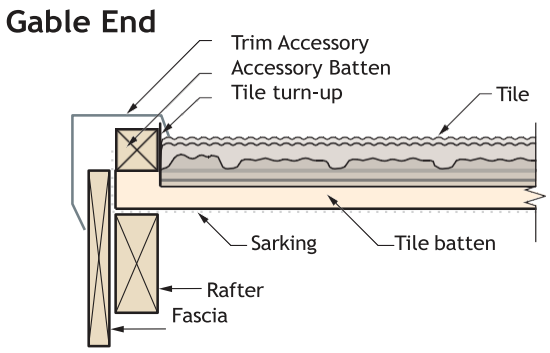
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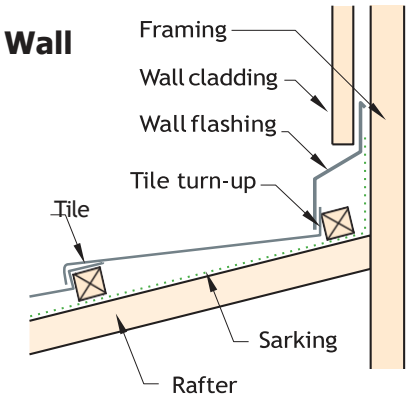
Standard fastening profile detail examples











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TECHNICAL NOTE

Disclaimer

Gerard disclaims all liability for any loss or damage suffered by any person arising out of or in connection with any use of or reliance on the information contained in this information sheet. This information sheet provides details about the installation and performance of a completed roof system using AS 3959-2018 as the basis for design. This information covers bush fires in the BAL-12.5 to BAL-40 zones. It is important to be aware that compliance with this document does not guarantee that a building or its occupants will survive a bush fire.

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