Harvey Roofing Products
A DIVISION OF MACSTEEL

HARVEYTILE

Installation Manual

January 2023

Beware of Imitations. Look for the Harveytile Quality Stamp.

www.harveyroofingproducts.co.za
Tel: +27 11 741 5600
info@harveyroofingproducts.co.za

If it doesn't say Harveytile, it's not a Harveytile

Please note: Colours on screen and print may differ from the actual roof tile colour.

A DIVISION OF MACSTEEL

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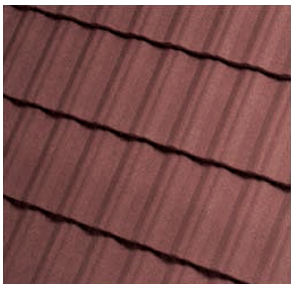
Product Range

Harvey Elite Tile



Tile Specification (Approx.)

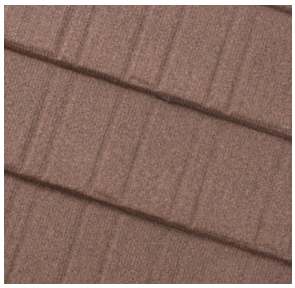
Overall Length:	1675 mm
Cover:	1600 mm
Overall Width:	397 mm
Cover:	369 mm
Mass per tile:	3,9 kg
Mass per sq. metre:	6,6 kg
No. of tiles per sq. metre:	1,69

Harvey Shake Tile

Tile Specification

Overall Length:	1675 mm
Cover:	1 625 mm
Overall Width:	395 mm
Cover:	350 mm
Mass per tile:	4,2 kg
Mass per sq. metre:	6,9 kg
No. of tiles per sq. metre:	1,76

Harvey Thatch Tile



Tile Specification

Overall Length:	1675 mm
Cover:	1 625 mm
Overall Width:	395 mm
Cover:	350 mm
Mass per tile:	4,2 kg
Mass per sq. metre:	6,9 kg
No. of tiles per sq. metre:	1,76

Colours on screen and print may differ from the actual roof tile colour. Information may change without prior notice. Please confirm current specification for the latest information.

Harvey Solar Bracket

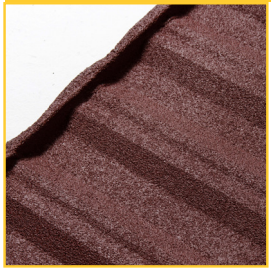
Bracket Specification

The Harvey Solar bracket is suitable for the application of solar panels and geysers. Manufactured from high tensile steel, there is no need to pierce the Harvey Roof Tile and risk a leaking roof. The Harvey Solar Bracket is easily fitted onto the timber or steel batten.

Uniform Wind Uplift: 2Kn/m2

Colour Range

STANDARD ACRYLIC COLOUR RANGE

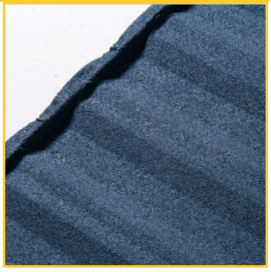


Burgundy

Bronze

Green

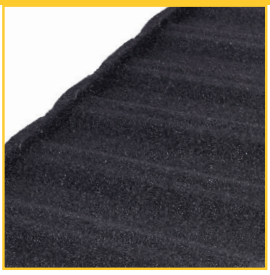
Terracotta



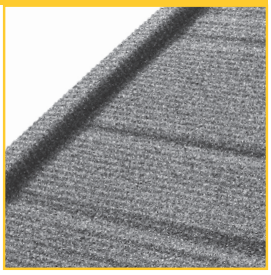
Dark Blue

STONECOAT

Thatch



Midnight Black



Greystone

NON-STANDARD COLOURS

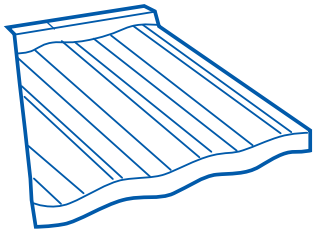
Brick

Emerald Green

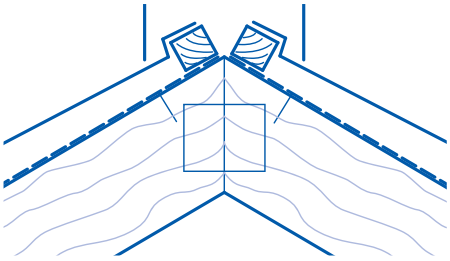
(Available on request, subject to minimum order)

Timber requirements

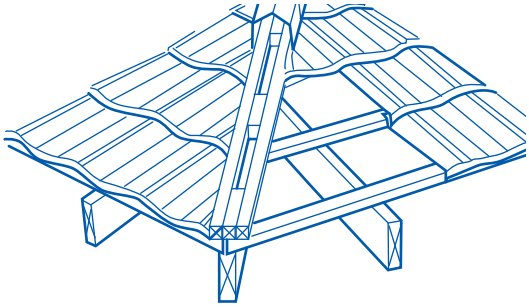
Timber specifications are calculated on the basis of using graded SABS soft woods. Battens must be spaced according to specification in this manual.
Rafters spaced at the following maximum centres:
Using 38 x 38 mm battens - 1.1m centres
Using 38 x 50 mm battens - 1.2m centres
Using 50 x 50 mm battens - 1.3m centres



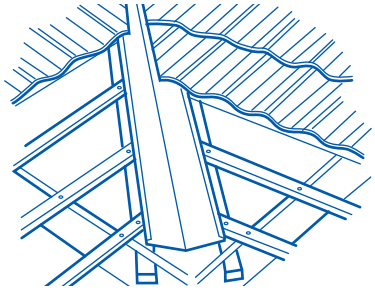
Tiles
Each tile is fastened using 2 serrated nails driven through the rear return flange of the tile and 4 through the front edge of the tile into the battens.



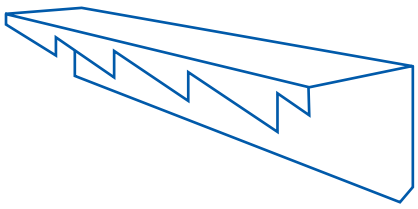
Ridges
When angle ridges are used, two tile battens are fitted one on either side at the apex of the truss. For square ridge caps, one tile batten is fitted on the apex of the ridge. The ridge caps are fitted over these battens and nailed through the sides of the ridge caps into the tile upturn and face of the battens, using 4 serrated nails on each side.



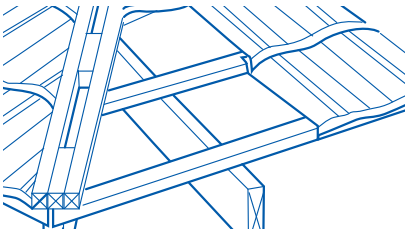
Hips
Hip battens are fitted on the hip line to accommodate either angle or square hip caps - as described for the ridge detail. Tiles are cut and bent up against the battens. The hip caps are fitted over the battens and tile upturn and nailed through the side of the hip caps into the face of the batten using 2 nails on each side.



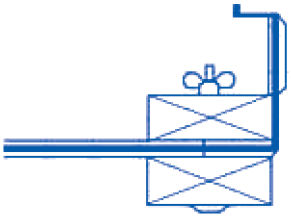
Valley
Galvanised steel valley linings are supported by 38mm x 76mm timber bearers and are then installed flush with rafters. Adjacent tiles to be measured and cut, allowing sufficient downturn into the valley.



Gable end
Gables are fitted with a continuous serrated barge board cover to mesh with the tile profile. The cover is fastened along the barge board length using 3 nails.



Eaves
The bottom course of tiles to be secured with 4 nails driven vertically through the weather surface of the tile into the last batten.

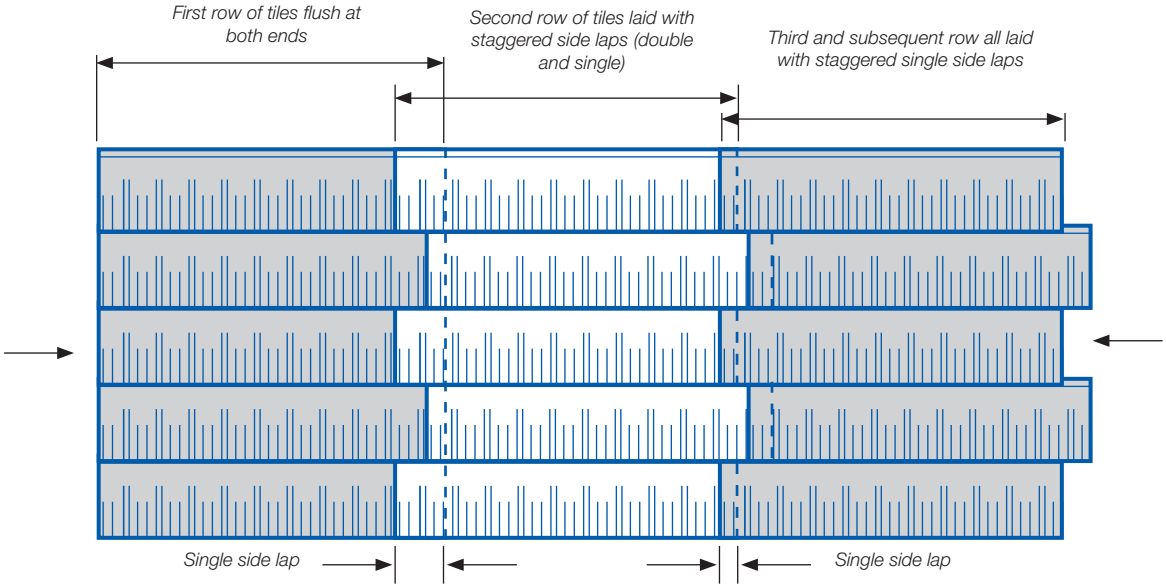


Quarter tile at ridge
When a short course of tiles is required at the ridge, either the tile or a cover flashing is cut and bent to suit the shortened dimension. The back of the tile/cover flashing is bent up by 25mm to fit against the ridge and batten.

Tiling in general

The tiles can be side-lapped either right over left or left over right.
The following is recommended:
1. Laps must face away from valleys or rainwater pipes discharging onto the roofs.
2. Where possible, tiles are to be laid with laps facing away from normal line of sight. Tiling should be started from the bottom of the roof, except on steep pitches where it is advisable to start tiling at the apex.

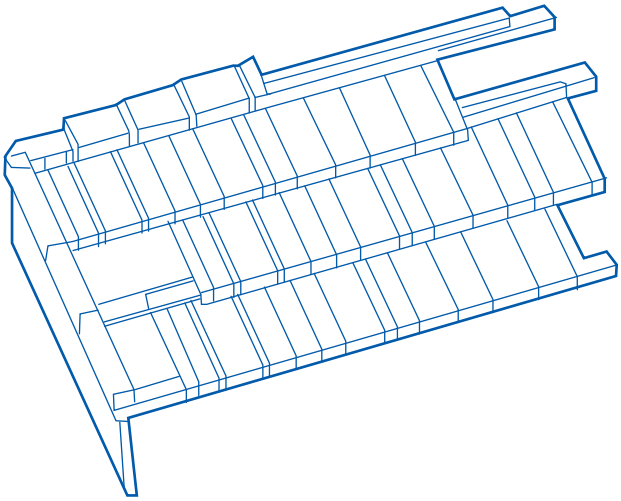
Staggering of tiles
(Excluding Shaketile) In order to break up the line of joins visible on the roof and to improve the aesthetic appearance it is recommended that tiles have a staggered pattern when installed. The stagger is obtained by laying every second tile in alternate courses with a double side lap when overlapping the first row of tiles. The remainder of the tiles are then laid with the usual single side lap.



Note: Tiles may be lapped from left to right or from right to left as long as the open side of the joints always face the same way.


Double side lap


Single side lap



Layout pattern: Shaketile
The detail on the left shows a typical random pattern of the Shaketile. This random laying pattern is necessary to recreate the look of natural timber shakes

General fixing procedures

Roof Preparation
Harveytiles are normally used with standard 114 x 38mm timber trusses in conjunction with 38 x 38mm battens. To save cutting and waste of tiles, rafter and batten lengths should be designed to suit an exact number of full tile courses.

Truss Configuration
Consult Harvey Roofing Products or a reputable manufacturer for optimum truss designs. For normal applications, using a 38 x 38mm batten, maximum truss spacing of 1,1m is permitted.

Batten Spacing - Elitetile and *Shaketile
Note: the correct batten spacing is critical for a leak proof roof and must be as shown.

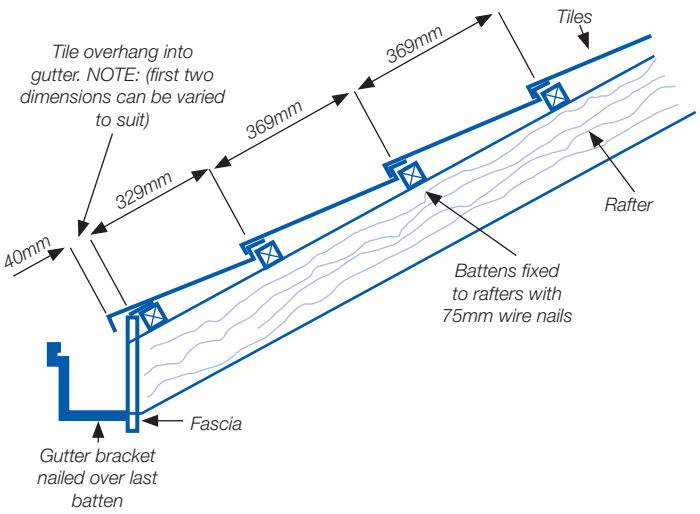
Pitch
The tiles can be used without underlay on roof pitches between 15° and 45°, from 10° to 15° with underlay.

Nailing Of Tiles
To prevent leaks, tiles must never be nailed through the top weather surface, except at eaves. Tiles are secured with 40mm - 45mm serrated galvanised clout nails as shown. However, always use a ball headed hammer.

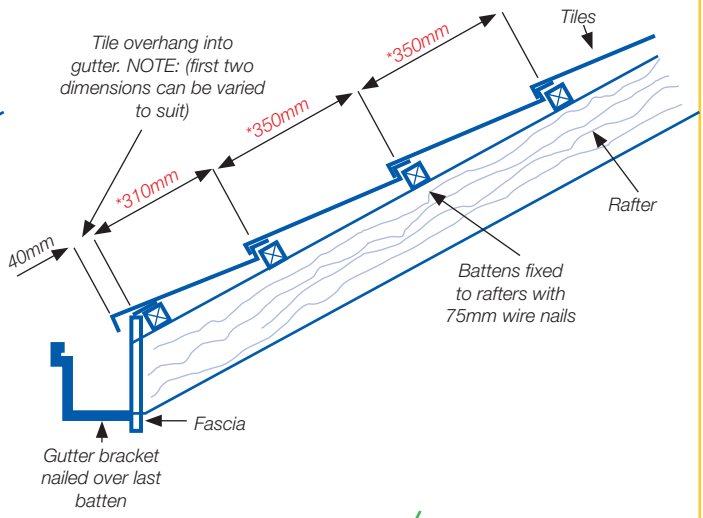
Touching Up Nail Heads
All exposed nail heads must be spotted with touch-up paint.

Cut Edges
Any cut edges must be coated with touch-up paint.

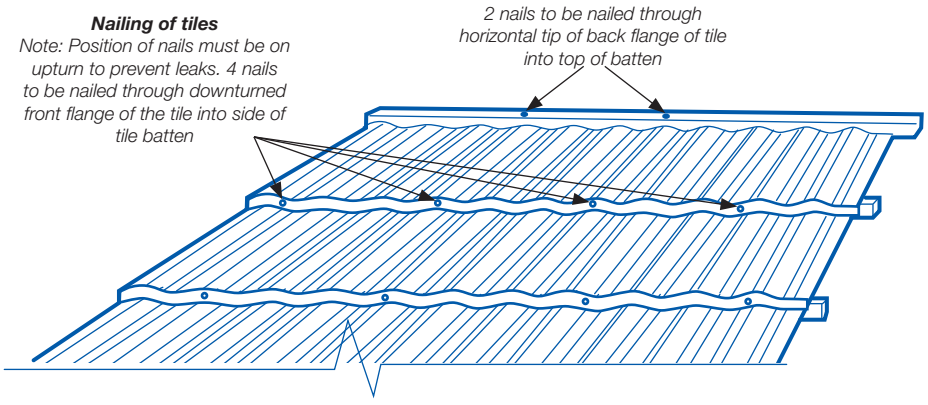
Batten Spacing: Elitetile

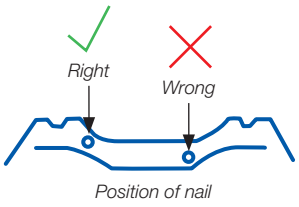


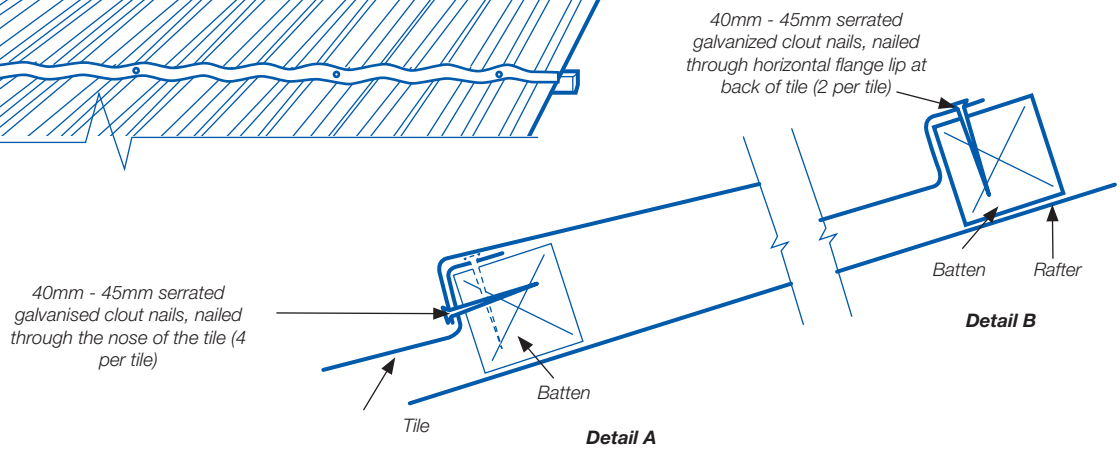
Batten Spacing: Shaketile



Nailing of tiles
Note: Position of nails must be on upturn to prevent leaks. 4 nails to be nailed through downturned front flange of the tile into side of tile batten

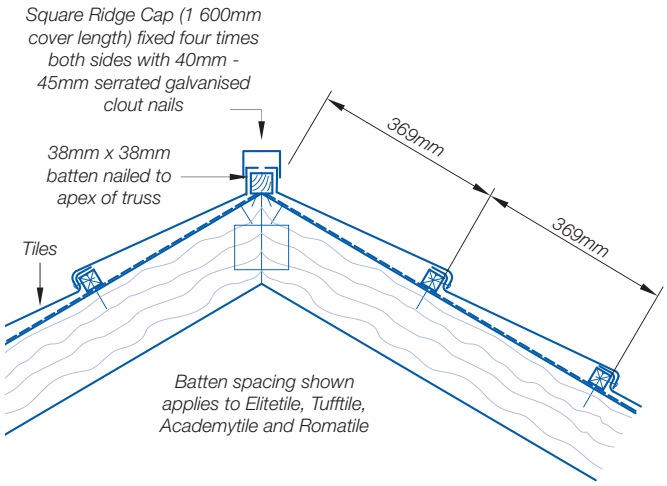




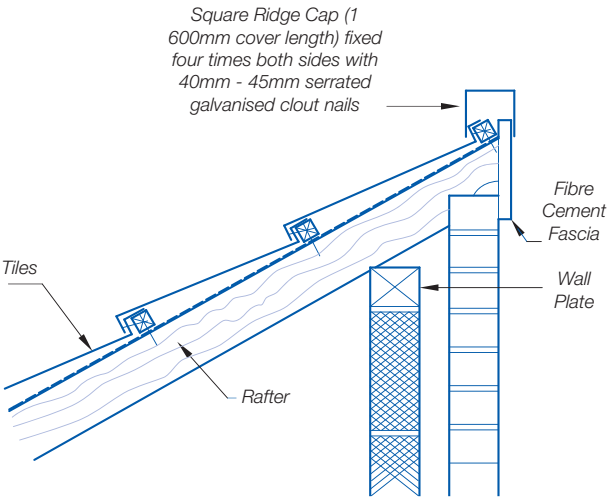


Ridge details

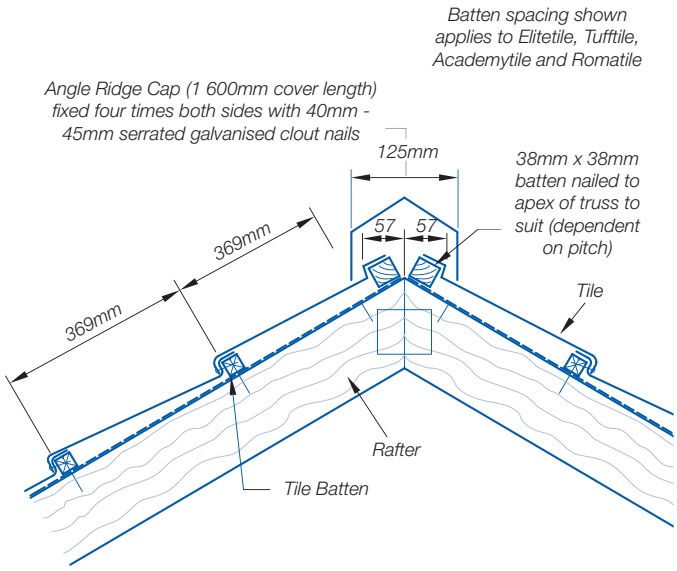
Square Ridge Detail



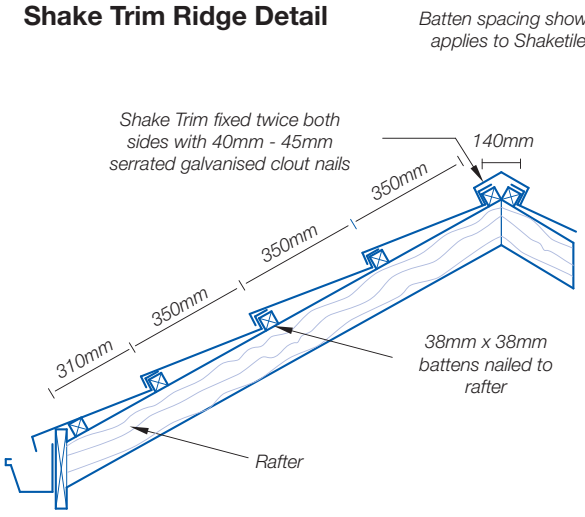
Mono Ridge Detail



Angle Ridge Detail

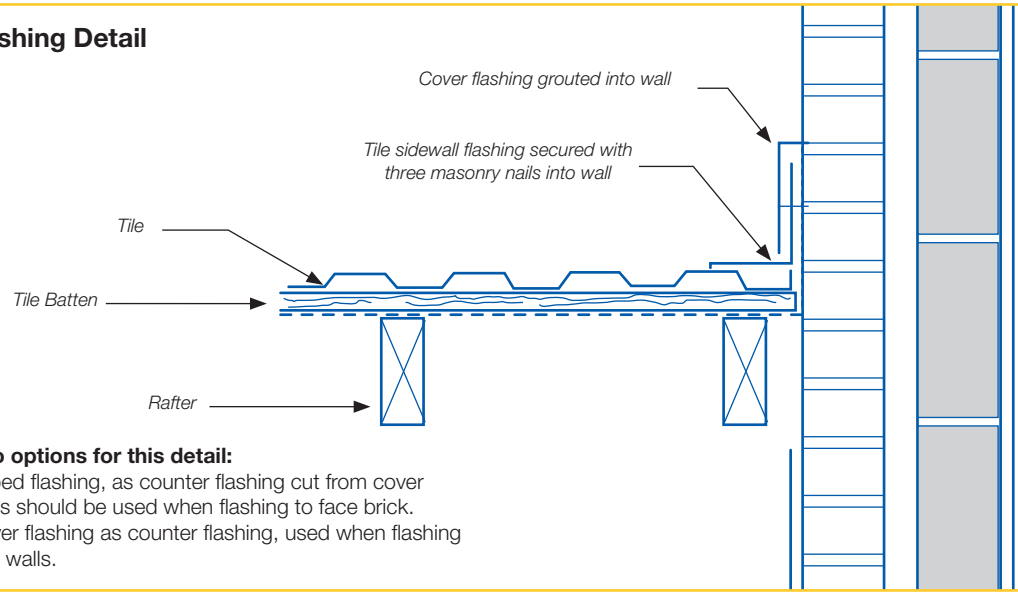


Shake Trim Ridge Detail



Flashing details

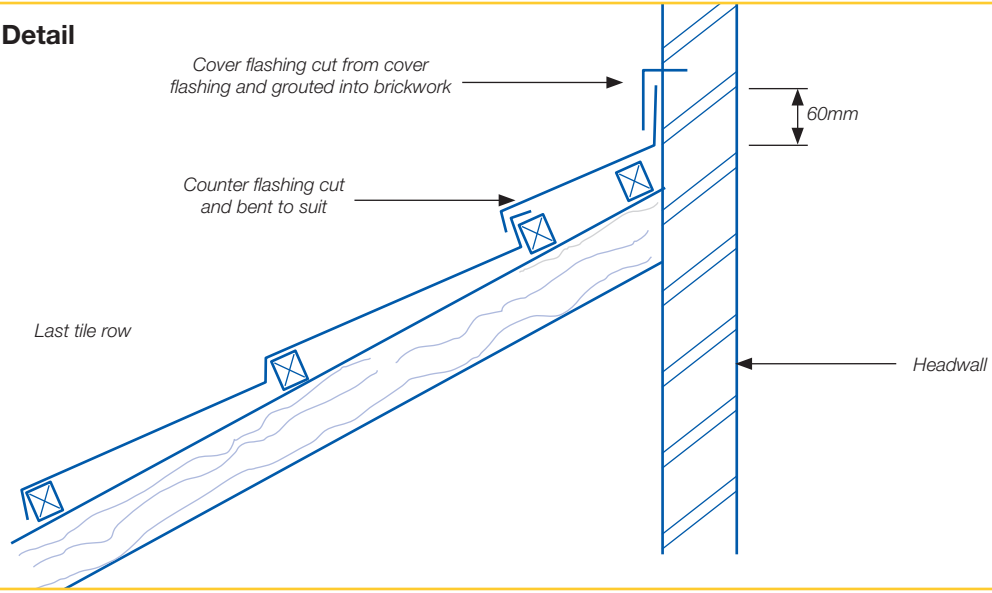
Sidewall Flashing Detail



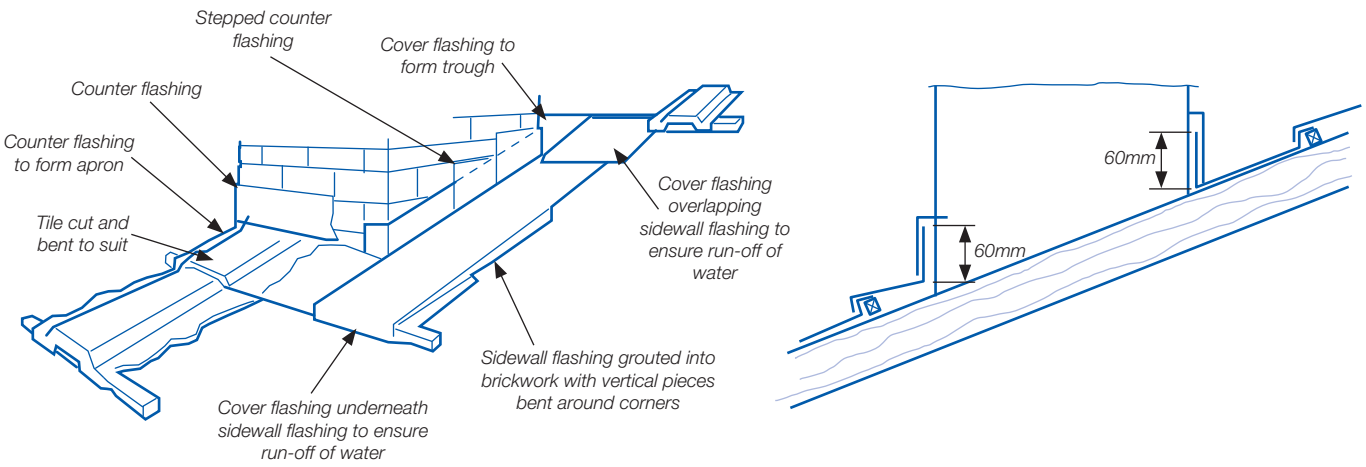
There are two options for this detail:

1. Using stepped flashing, as counter flashing cut from cover flashing. This should be used when flashing to face brick.
2. Straight cover flashing as counter flashing, used when flashing to plastered walls.

Headwall Flashing Detail



Chimney Flashing Detail

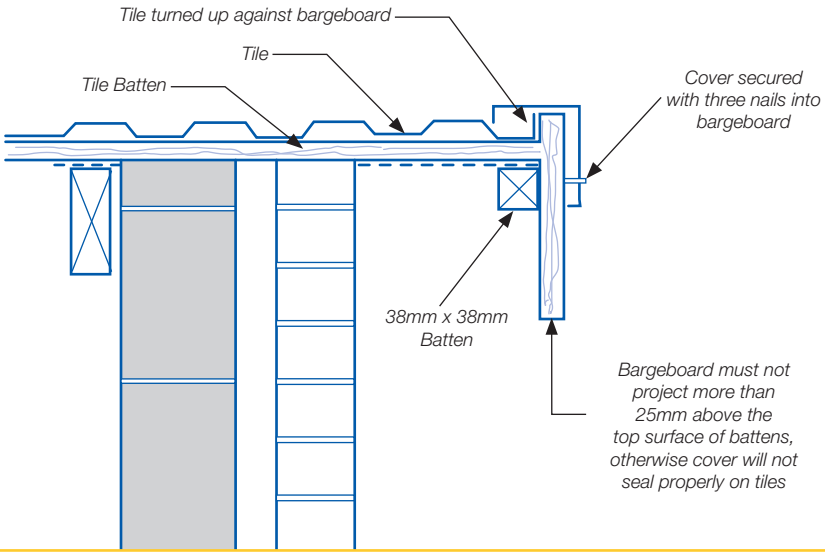


Gable end details

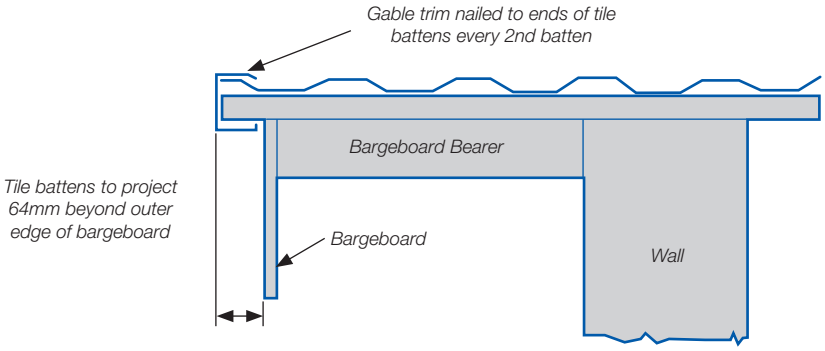
Bargeboard Cover

This optional fitting, against bargeboard besides providing a neat finish, protects the end of the battens from water running between the ends of the tiles and the bargeboard.

The bargeboard cover must be fixed flush with the top of the tile and fibre cement bargeboard.



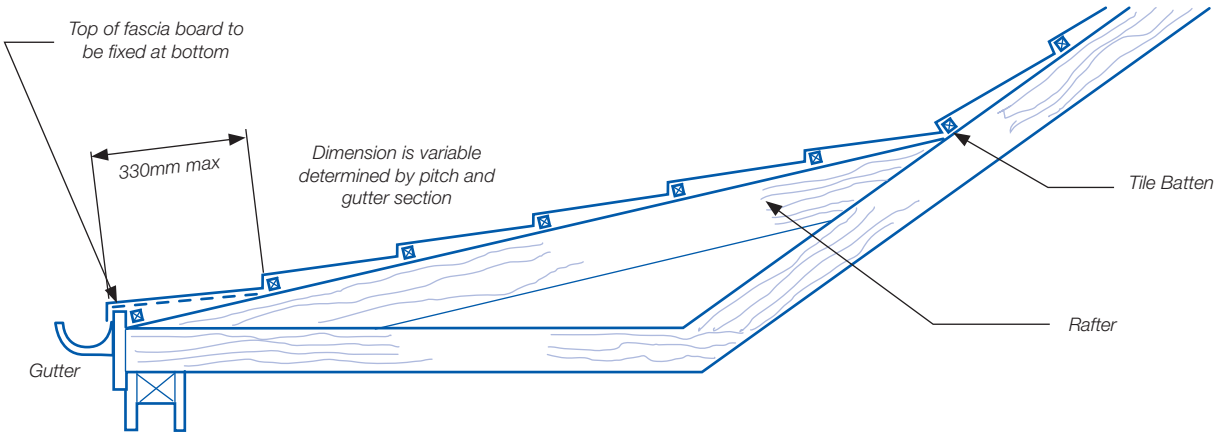
Gable Trim



Note:

1. Standard overhang at Gable end is 300mm.
2. Bargeboard cover to meet tile so that water flow is channeled away from bargeboard.
3. Bargeboard cover can be vertically secured by pop-rivetting or by using self-tapping screws.
4. Touching up with touch-up paint is mandatory.
5. The Gable Trim is an economical alternative to the standard bargeboard cover.

Break in Roof Pitch Detail

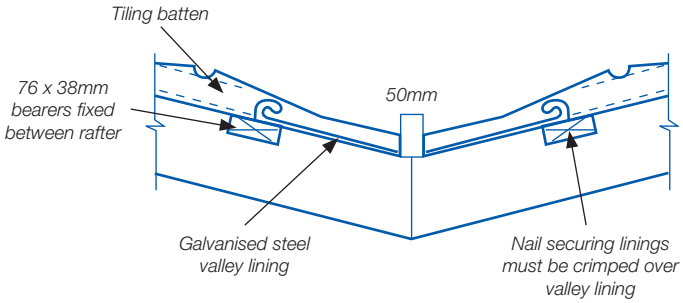


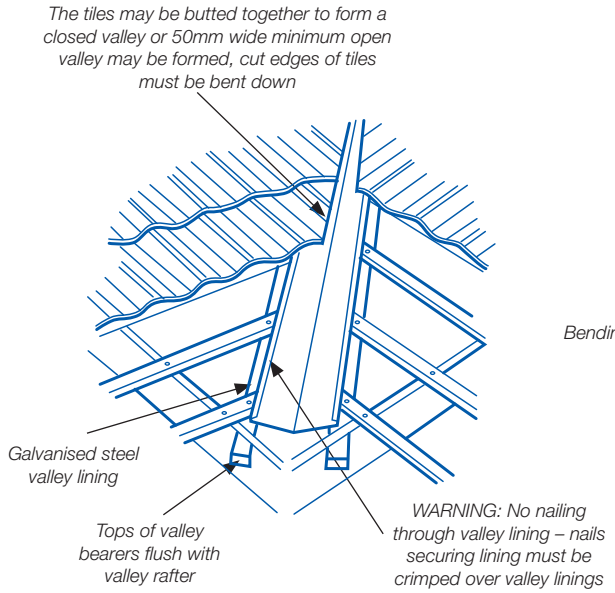
Valley details

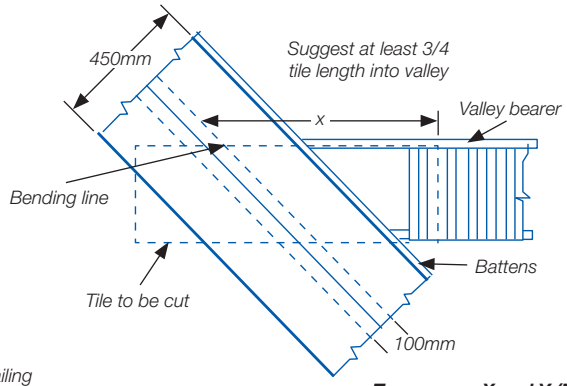
Note:
1. Care must be taken not to nail through the valley lining.
2. An extra precaution is taken by bending the edges of the cut tiles down into the valley.

Bending and Cutting Equipment
The following is a list of tools that would provide the roofer with a complete tool kit:
- Claw and Ball Hammer
- Builder's Line Tiling batten
- Measuring Tape
- Pop Rivet Gun
- Nail Pouch
- Chalk Line
- Saw
- Metal Shears or Tin Snips
- Hand Benders
- Angle Grinder

Cutting Tools
Angle Grinder: *This is the most common method of cutting tiles.*
Tin Snips: *Ideal for cutting shorter lengths such as detailing at junctions.*
Full tile benders: *Are available for bending tiles.*



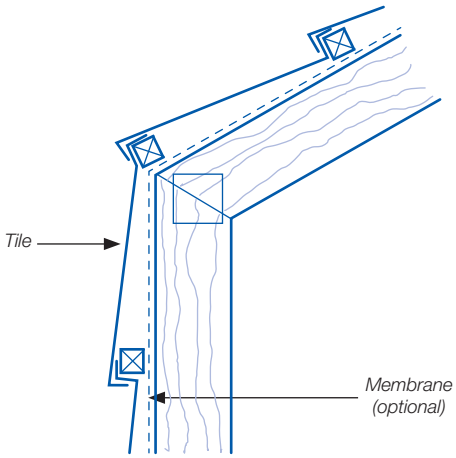




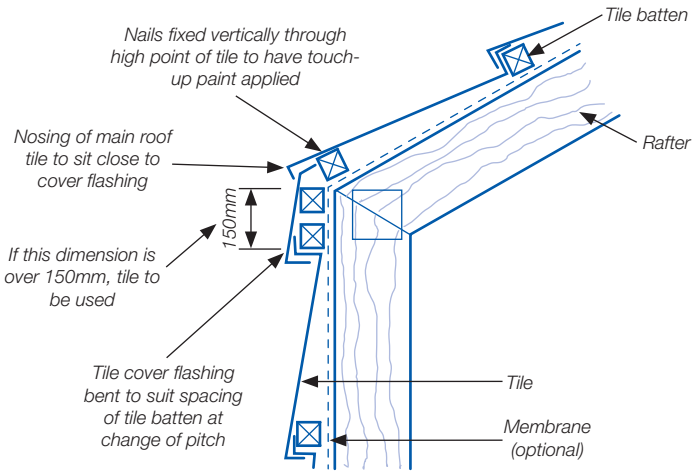
To measure X and Y (Bending Line)
1. *Strike chalk line 50mm on either side of centre line of valley lining*
2. *Measure from last flute of last complete tile to this chalk line to obtain X and Y dimensions*

Mansard details

Type A

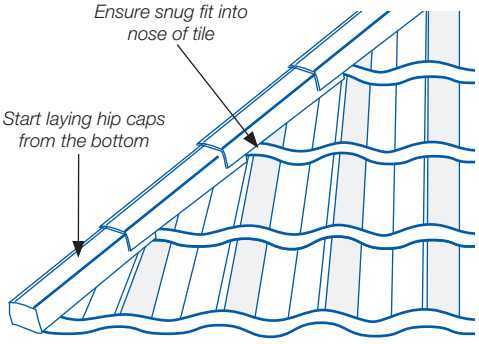


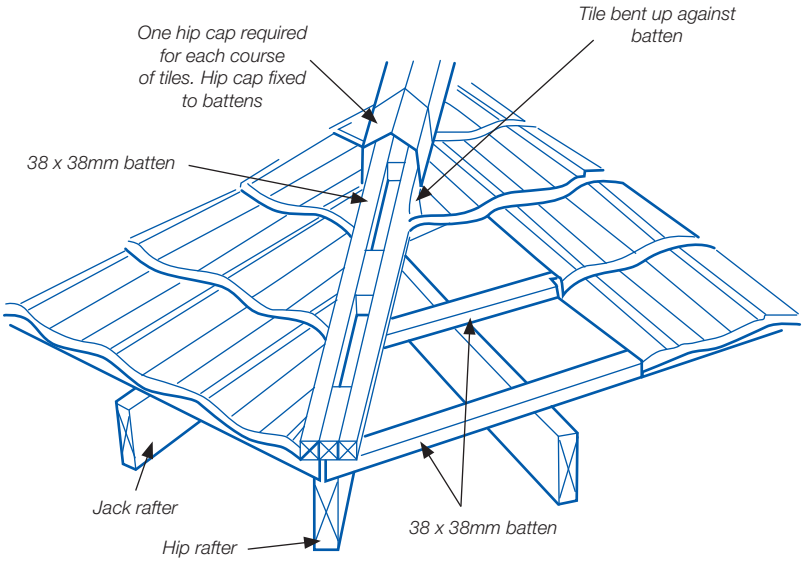
Type B



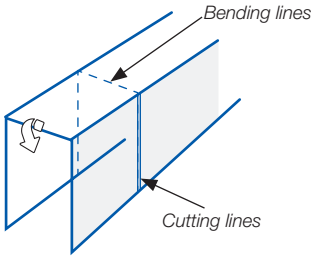
Hip details

1. Hip caps are fitted starting from the bottom of the hip.
2. Hip caps must be laid with the back (deepest end) of the cap fitted against the front end of the tiles (the nose) in the course above.
3. Caps are tapered to ensure a snug fit of 38 x 38mm batten



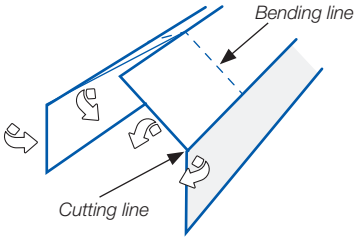


Square Hip Cap

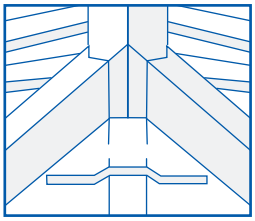


Bend hip cap end into hip cap

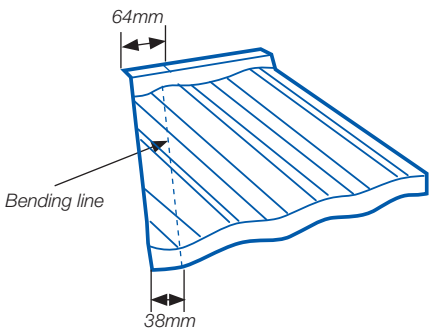
Angle Hip Cap

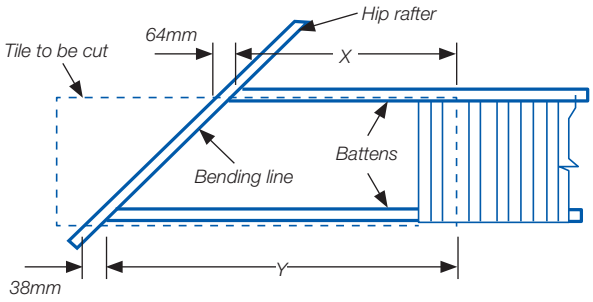


Fix hip caps, then cut and shape the ridge cap for a waterproof finish

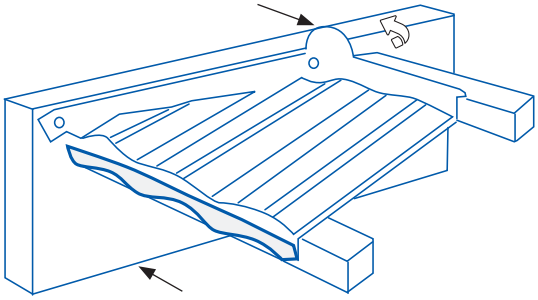


Cutting tile flanges before bending up





Tiles at hip must be cut to allow for a side turn up, tapering from 64mm at back to 38mm at front



Bent-up flange of cut tile to be nailed to 38 x 38 nailing strip if angle hip caps are used (Nail directly to hip rafter if square hip caps are used as shown in diagram)

Estimating data

The following is based on standard information.
All roofs vary so clients must take special care whilst calculating quantities.

Tile Calculator for Elite

Rafter Length		2 583	2 952	3 321	3 690	4 059	4 428	4 797	5 166	5 535	5 904	6 273	6 642	7 011	7 380
		7	8	9	10	11	12	13	14	15	16	17	18	19	20
3 208	2	14	16	18	20	22	24	26	28	30	32	34	36	38	40
4 812	3	21	24	27	30	33	36	39	42	45	48	51	54	57	60
6 416	4	28	32	36	40	44	48	52	56	60	64	68	72	76	80
8 020	5	35	40	45	50	55	60	65	70	75	80	85	90	95	100
9 624	6	42	48	54	60	66	72	78	84	90	96	102	108	114	120
11 228	7	49	56	63	70	77	84	1	98	10	112	9119	126	133	140
12 832	8	56	64	72	80	88	96	104	112	120	128	136	144	152	160
14 436	9	63	72	81	90	99	108	117	126	135	144	153	162	171	180
16 040	10	70	80	90	100	110	120	130	140	150	160	170	180	190	200
17 644	11	73	88	99	110	121	132	143	154	165	176	187	198	209	220

Eaves Length (m)

Tile Calculator for Shake Tile and Thatch Tiles

Rafter Length		2 450	2 800	3 150	3 500	3 850	4 200	4 550	4 900	5 250	5 600	5 950	6 300	6 650	7 000
		7	8	9	10	11	12	13	14	15	16	17	18	19	20
3 240	2	14	16	18	20	22	24	26	28	30	32	34	36	38	40
4 860	3	21	24	27	30	33	36	39	42	45	48	51	54	57	60
6 480	4	28	32	36	40	44	48	52	56	60	64	68	72	76	80
8 100	5	35	40	45	50	55	60	65	70	75	80	85	90	95	100
9 720	6	42	48	54	60	66	72	78	84	90	96	102	108	114	120
11 340	7	49	56	63	70	77	84	1	98	10	112	9119	126	133	140
12 960	8	56	64	72	80	88	96	104	112	120	128	136	144	152	160
14 580	9	63	72	81	90	99	108	117	126	135	144	153	162	171	180
16 200	10	70	80	90	100	110	120	130	140	150	160	170	180	190	200
17 820	11	73	88	99	110	121	132	143	154	165	176	187	198	209	220

Eaves Length (m)

Useful Constant Table

	Ridge to Gutter	Hip Length Std/Valley Length
15*	1 042	1 445
20*	1 064	1 460
25*	1 103	1 488
30*	1155	1 528
35*	1221	1 578
40*	1 305	1 644
45*	1414	1 732
50*	1 556	1 850
55*	1 643	2 009
	Batten Centres	**Tile m²**
Elite	369 c/c	1,7
Shaketile	350 c/c	1,76

There are two common ways of estimating tiles and accessories for a building. Type “A” is the rafter length method and Type “B” is the roof area method.

a) First determine rafter length:
Span + 2 = 3 000
3 000 x 1 155 (constant for 30°)
= 3 465 m + tile batten centre
= number of courses of tiles from ridge to gutter
ie. 3 465 + 369 (Elite) = 9.39 therefore 10 rows of tiles

Now take overall length and + tile cover
12 000 + 1.6 = 7.5 tiles (1 side calc.)

Conclusion: therefore 7.5 x 10 rows = 75 tiles x 2 for both sides.
Therefore 75 x 2 = 150 tiles. Rake and waste as well as ridges and hips must now be calculated.

Hips Calculation
Take 1/2 span of overall and multiply by hip constant for 30°
(Useful Constant Table)

3 000 x 1 528 = 4 584 L/m
There are two such hips therefore total hip length is
4 584 x 2 = 9 168

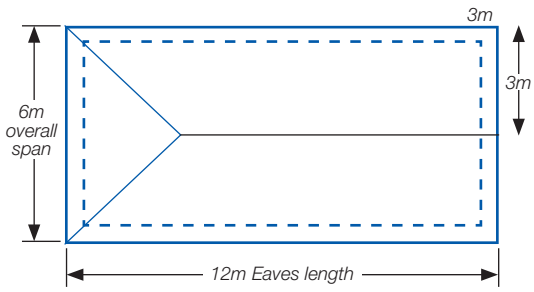
This figure can be divided by the relevant cover of the accessory required ie. Hip Caps or Ridges.

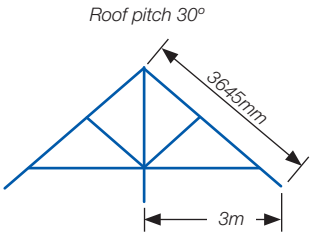
Hips Rake and Waste
Take the total hip length and multiply by .3 and then by 2 (for both sides of hip or valley cut)
4 584 x 0.3 = 1 375m
1 375m^2 x 2 = 2.75m of extra tiles required
Therefore 2.75 x 1.72 = 4.73 tiles rounded off = 5 tiles. Therefore
5 tiles required per hip x 2 hips. 10 tiles for cutting are required.

Valleys
Calculate your valleys with the same formula as shown for hip and hips rake and waste.

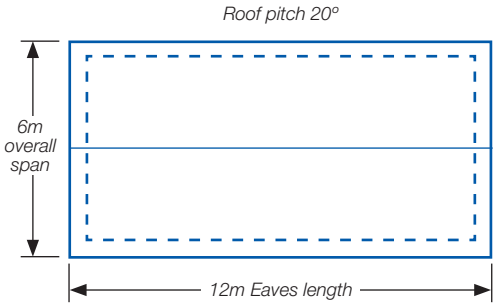
Ridges
Scale off plan and take total length of ridge and divide by appropriate ridge cover to determine quantity required.

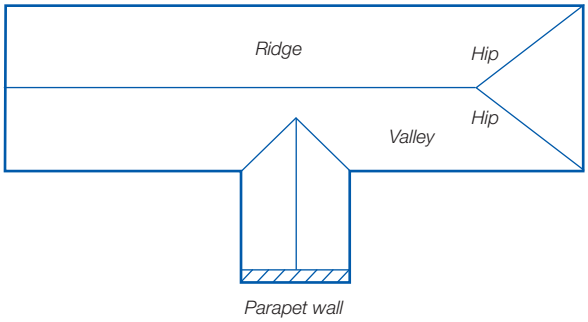
Type A

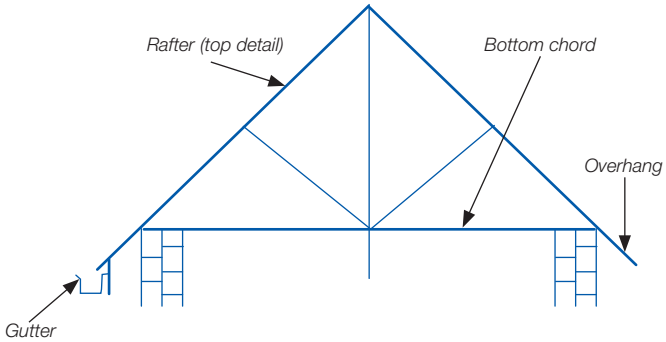




Type B







Calculate flat area including overhang
12 000 x 6 000 = 72m
therefore 72m’ x relevant roof pitch factor
(Useful Constant Table)
= total roof area 72m’ x 1 064 = 76.60

Now multiply total roof area by the required tiles per m
i.e. Elite: 76.60 x 1.72 = 131.76 tiles
therefore 132 tiles required.

Accessories as well as rake cut and waste as per Type “A”. For accuracy, method “A” is preferred, however for quick estimation Type “B” can be used.

Clients are reminded to contact Harvey Roofing Products should they need further estimating assistance.

Re-roofing

Harvey Roofing Products have designed their profiles to the highest technological global standards, ensuring strength, durability, good looks and easy handling. With the tile mass being so much lighter than conventional tiles, in flexibility and manoeuvring, working with our tiles is so much easier, not to mention the time and materials that are saved in the process.

These features make our tiles ideal for re-roofing and being so light there is no need to reinforce the timber structure.

In addition, because the tiles are fitted on top of the existing roof, there is no inconvenience to the occupants. The unique overlapping resistant to the elements and impenetrable to burglars.

Re-roofing with our tiles gives your roof added insulation which will keep your building cooler in summer and warmer in winter. Sound and acoustics levels will also be improved.

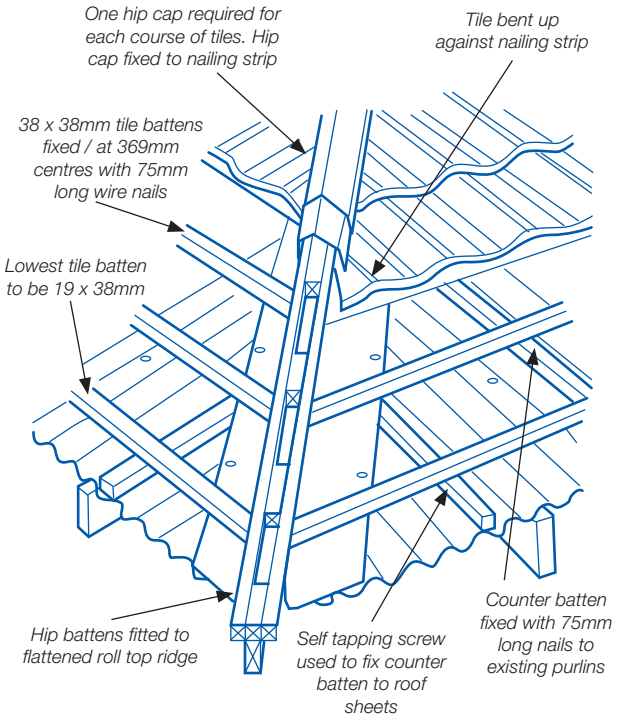
The Harvey Roofing Products re-roofing system is maintenance free, which means you do not have the inconvenience of fixing leaks, replacing broken tiles or repainting every few years. Harvey Roofing Products has a nationwide network of licensed contractors who guarantee their workmanship.

Pitch

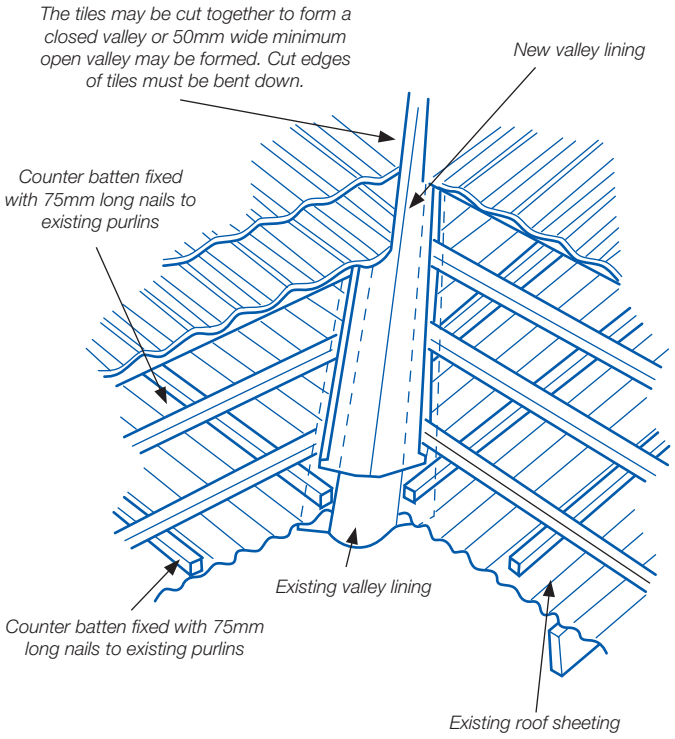
Preparation for laying of the tiles on top of existing corrugated steel roof covering.

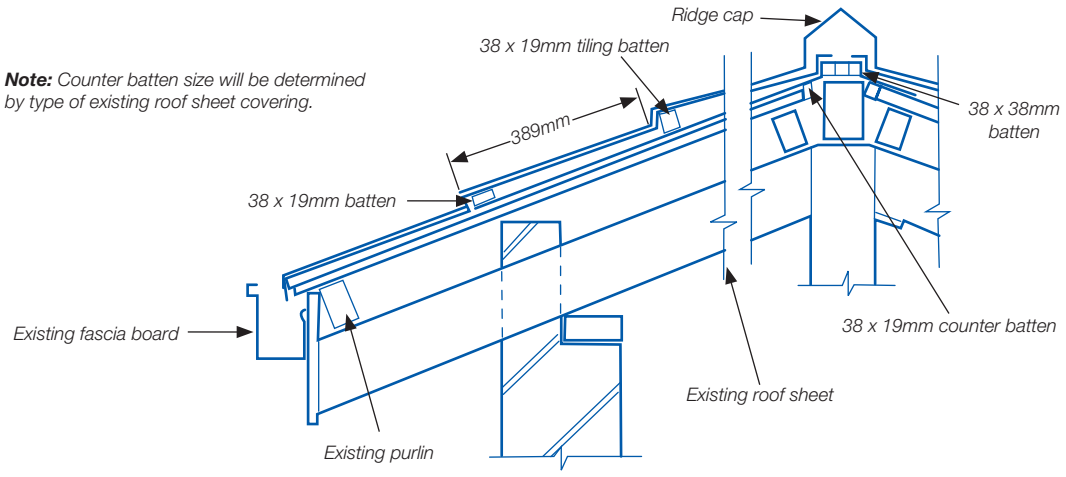
1. Counter battens of 38 x 19mm cross section are laid in the flutes of the existing corrugated steel roof sheets from eaves to ridge at maximum centres of 1.1m. These counter-battens are nailed through the roof sheeting to the existing timber purlins with 75mm wire nails.
2. Tiling battens of 38 x 38mm are fixed to the counter-battens at 369mm centres, with 75mm wire nails. The lowest batten is 38 x19mm.

Re-Roof Hip Detail



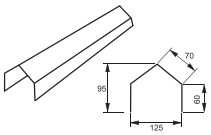
Re-Roof Valley Detail





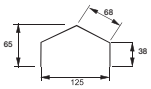
Accessories

1 Angle Ridge



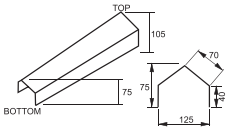
Fixed to double batten at apex
Length: 1720mm (cover 1600)
Width: 125mm tapered lengthwise
Height: 95mm
Mass: 2.5kg

2 Angle Ridge End Cap



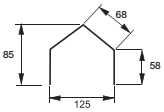
Fixed to end of Angle Ridge
Width: 125mm
Height: 90mm

3 Angle Hip Cap



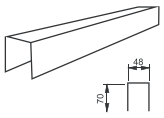
Fixed to double batten at hip battens
Length: 580mm (cover 1 per tile course)
Width: 125mm tapered down to 123mm
Height: 75mm tapered up to 105mm
Mass: 0.8kg

4 Angle Hip End Cap



Fixed to end of Angle Hip
Width: 125mm
Height: 70mm

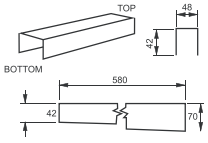
5 Square Ridge



Fixed to double batten at apex

Length:	1720mm (cover 1600mm)
Width:	48mm tapered lengthwise
Height:	70mm
Mass:	1.8kg

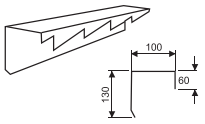
6 Square Hip Cap



Fixed to single hip batten

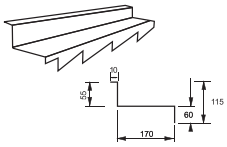
Length:	580mm (cover 1 per tile course)
Width:	48mm tapered down to 45mm
Height:	42mm tapered up
Mass:	0.5kg

7 Bargeboard Cover



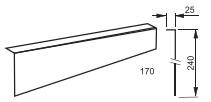
Left and right hand serrated. Fixed to barge boards at gable ends. Sketch shows right handed barge board cover.
Length: 1550mm Height: 130mm
Cover 4 tile courses
Mass: 2.3kg

8 Sidewall Flashing



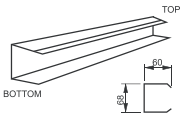
Left and right hand serrated.
Sketch shows right handed sidewall.
Length: 1550mm Height: 115mm
Cover 4 tile courses
Width: 170mm Upper Lip: 10mm

9 Cover Flashing



For use at headwall and sidewall flashing as well as for short courses at ridge.
Length: 1720mm Width: 240mm
Upper Lip: 25mm Cover: 1600mm
Mass: 2.5 kg

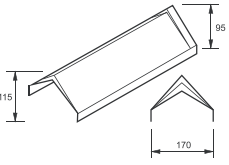
10 Gable Trim



Fixed to gable ends

Length:	1720mm (cover 1600mm)
Width:	60mm
Height:	68mm tapered up
Mass:	1.8kg

11 Shake Trim



Length:	395mm
Width:	170mm
Cover:	370mm
Mass:	0.6kg

Harvey Roofing Products
A DIVISION OF MACSTEEL

The Harvey Quality Stamp

We take great care to ensure that every Harveytile is manufactured to the most stringent quality standards. As a division of Africa's leading steel supplier, Macsteel, we have access to the best steel. We prepare and press the steel to the finest tolerances, coat the tile with the finest paints and binding materials, cover the tile with only the best surfaces and finally the tile with the best looks... And if you need rust protection, add the best rust protection coating when required. All this whilst inspecting the tile every step of the process.

Once complete, we take care to quality check every tile so as to ensure that it meets our exacting quality standards. Only then do we place our Harvey Quality Stamp on each tile.

This means you can rest assured that if the tile carries the Harveytile Quality Stamp, that it's a Harveytile manufactured to the most exacting standards. If it doesn't say Harveytile, It's not a Harveytile... look for the Harveytile Quality Stamp.

www.harveyroofingproducts.co.za
Tel: +27 11 741 5600 • info@harveyroofingproducts.co.za