



Harvey Roofing Products

HARVEYTILE INSTALLATION MANUAL

Make the right choice from the start



MACSTEEL

The tile on Top is a Harveytile

Tel: +27 11 741 5600 | Fax: +27 11 813 3639 | www.harveyroofingproducts.co.za | www.macsteel.co.za

MACSTEEL Africa's leading steel supplier

PRODUCT RANGE

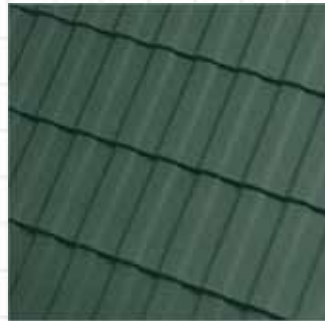
Elitetile



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

Tufftile



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

HarveyThatch & Shaketile



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: 1,69

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TIMBER REQUIREMENTS

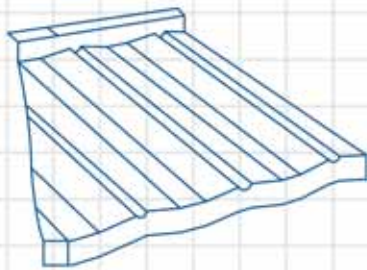
Timber specifications are calculated on the basis of using graded SABS soft woods. Battens must be spaced according to specification in this manual.

Rafters spaced at the following maximum centres

Using 38 x 38 mm battens - 1.1m centres

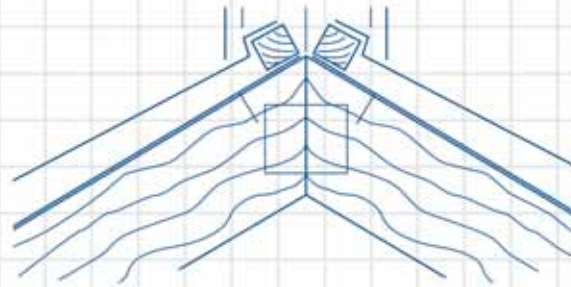
Using 38 x 50 mm battens - 1.2m centres

Using 50 x 50 mm battens - 1.3m centres



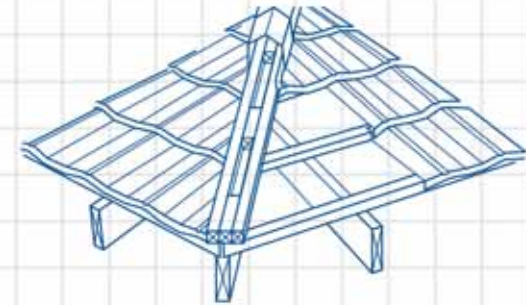
Tiles

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.



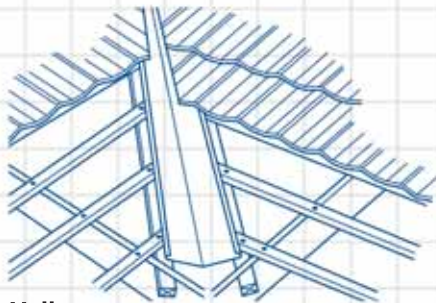
Ridges

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.



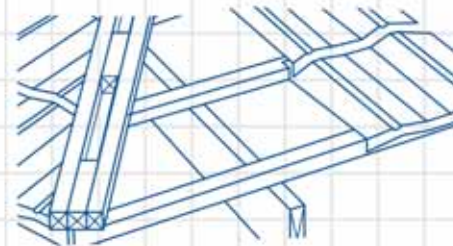
Valley

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.



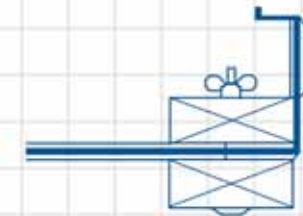
Gable end

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

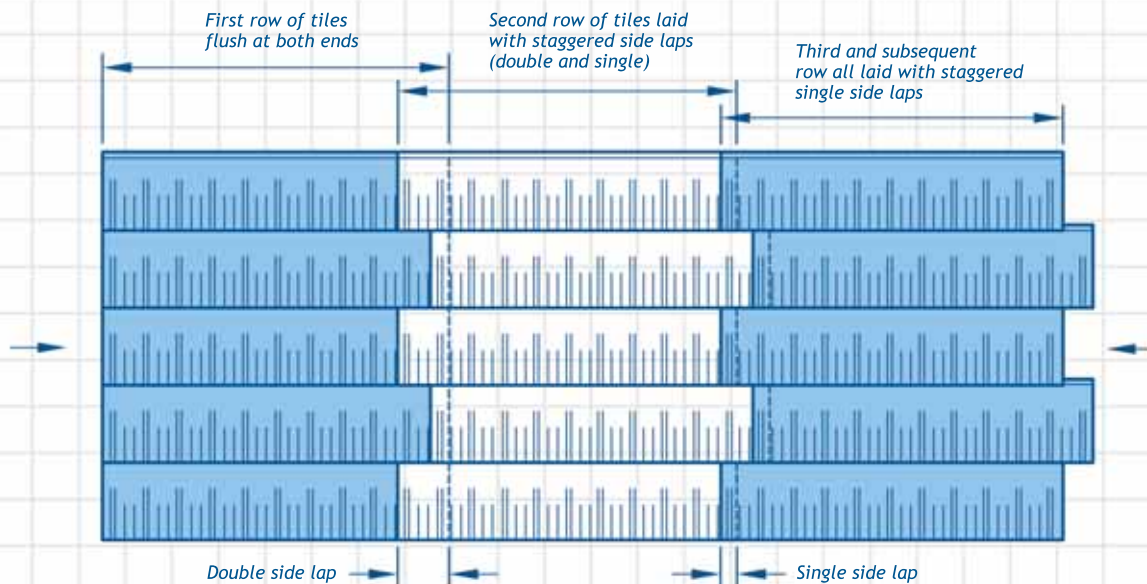
The tiles can be side-lapped either right over left or left over right.

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

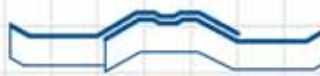
(Excluding Shakatile) In order to break up the line of joins visible on the roof and to improve the aesthetic appearance it is recommended that tiles have a staggered pattern when installed. The stagger is obtained by laying every second tile in alternate courses with a double side lap when overlapping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



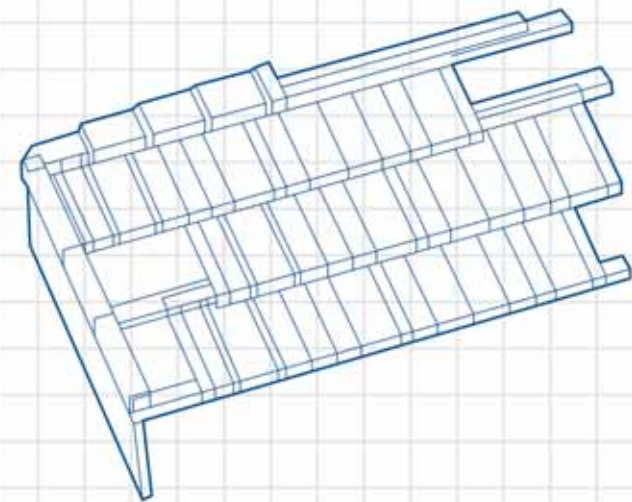
NOTE: Tiles may be lapped from left to right or from right to left as long as the open side of joints always face the same way



Double side lap



Single side lap



Layout pattern: Shakatile

The detail below shows a typical random pattern of the Shakatile. This random laying pattern is necessary to recreate the look of natural timber shakes.

GENERAL FIXING PROCEDURES

Roof Preparation

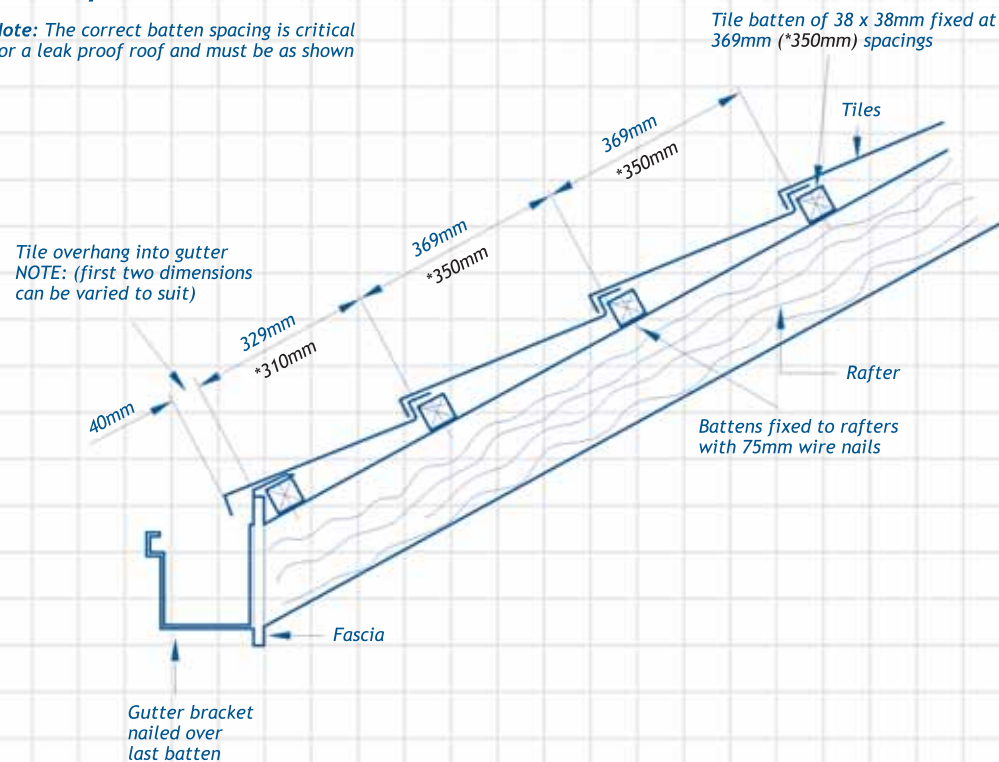
Harveytiles are normally used with standard 114 x 38mm timber trusses in conjunction with 38 x 38mm battens. To save cutting and waste of tiles, rafter and batten lengths should be designed to suit an exact number of full tile courses.

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 - Elitile, Tufftile, Academytile and *Shaketile

Note: The correct batten spacing is critical for a leak proof roof and must be as shown



Pitch

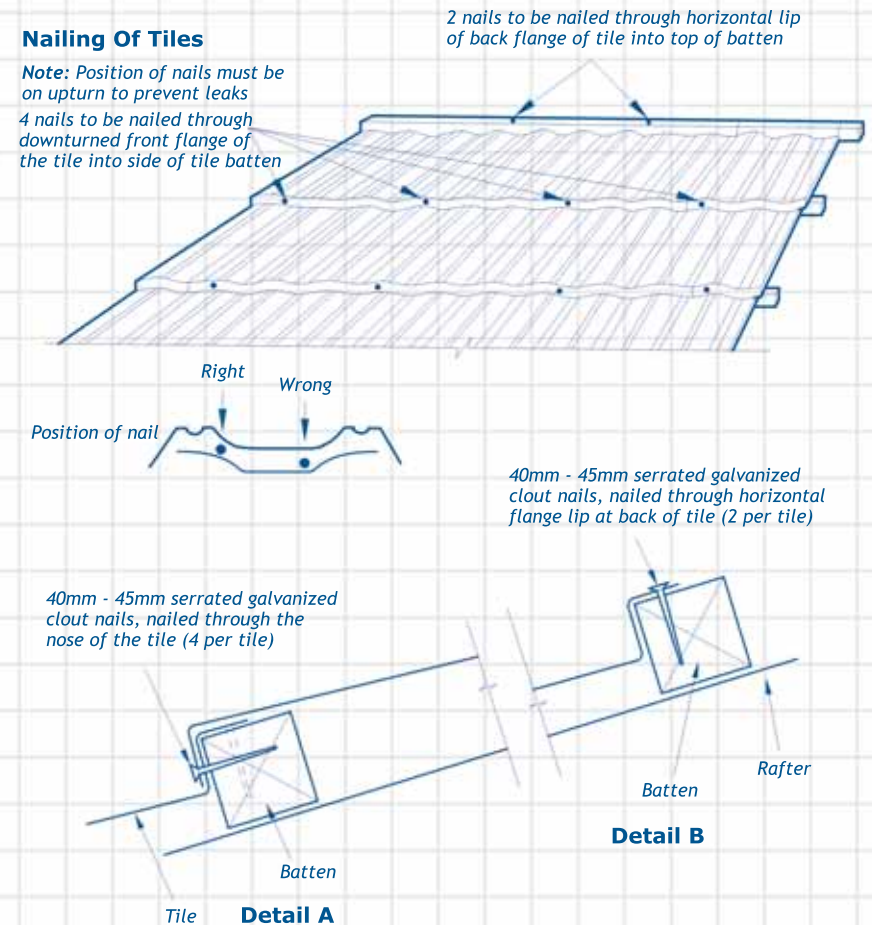
The tiles can be used without underlay on roof pitches between 15° and 45°, from 10° to 15° with underlay.

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 galvanized clout nails as shown.

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



Touching Up Nail Heads

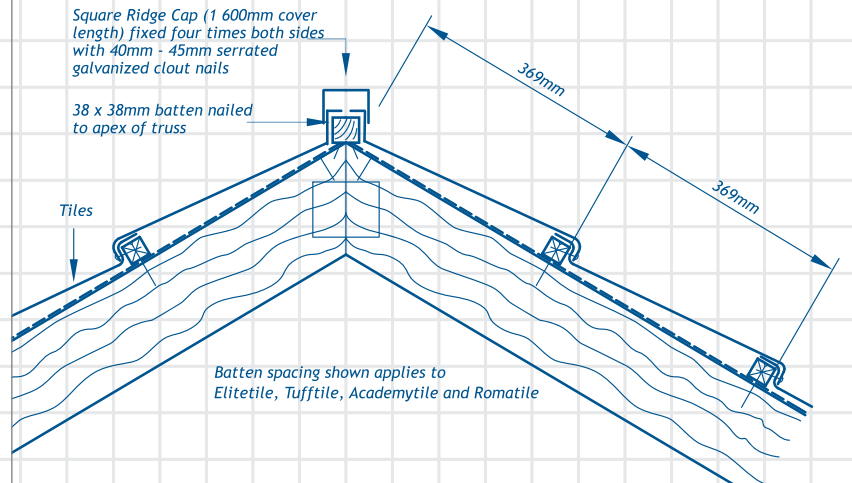
All exposed nail heads must be spotted with touch-up paint.

Cut Edges

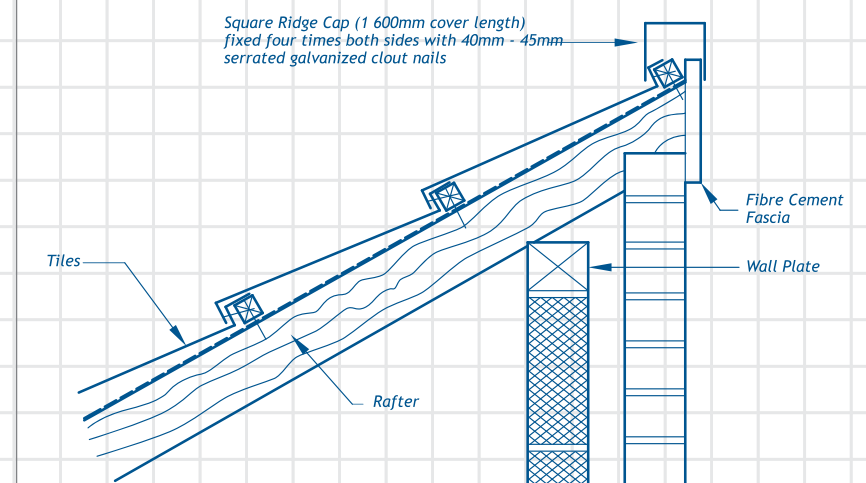
Any cut edges must be coated with touch-up paint.

RIDGE DETAILS

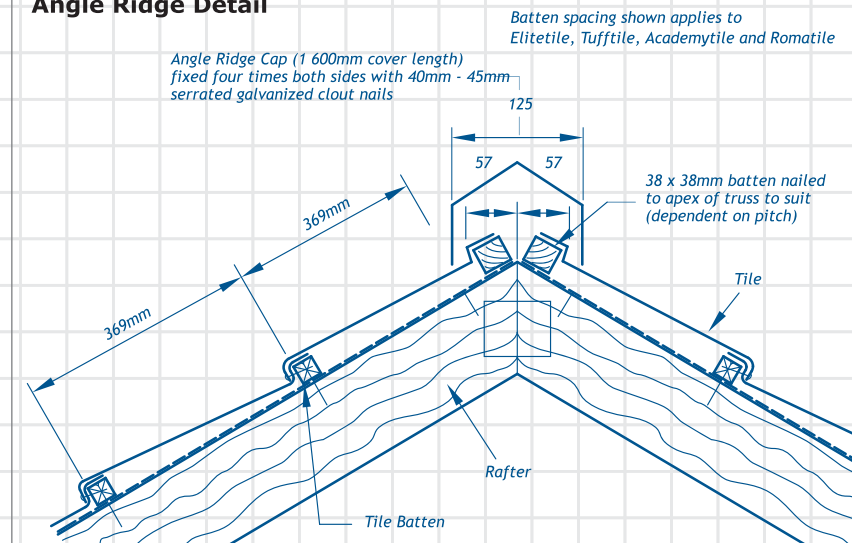
Square Ridge Detail



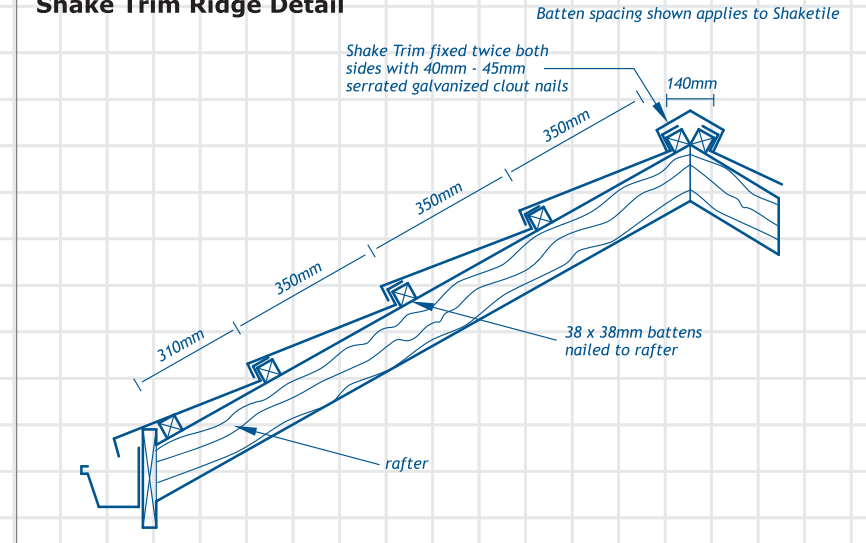
Mono Ridge Detail



Angle Ridge Detail

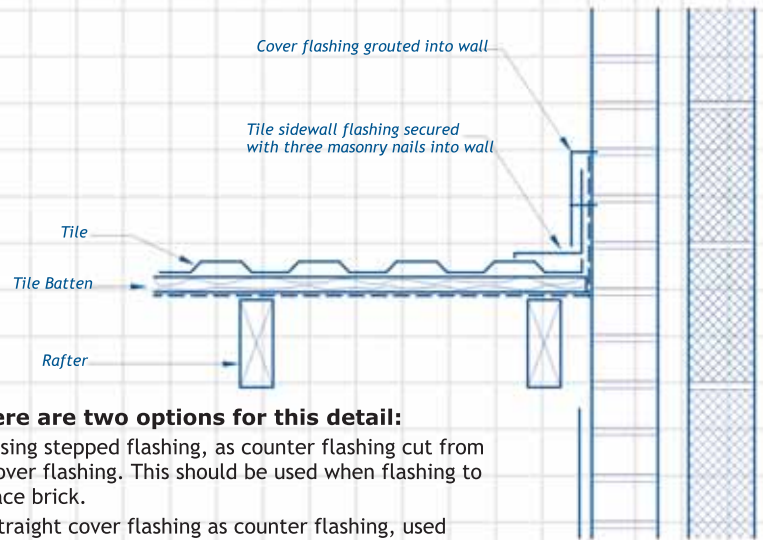


Shake Trim Ridge Detail



FLASHING DETAILS

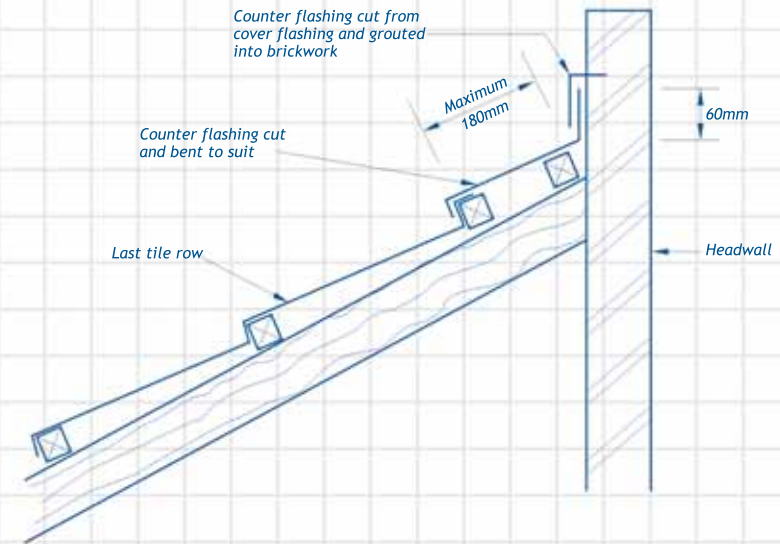
Sidewall Flashing Detail



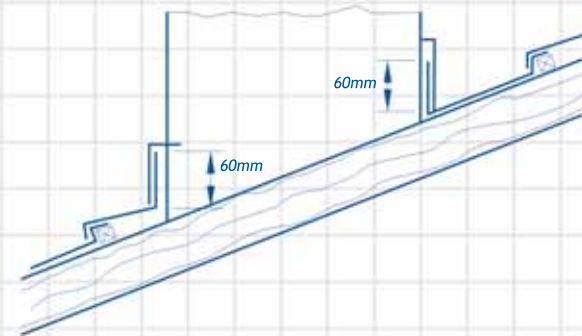
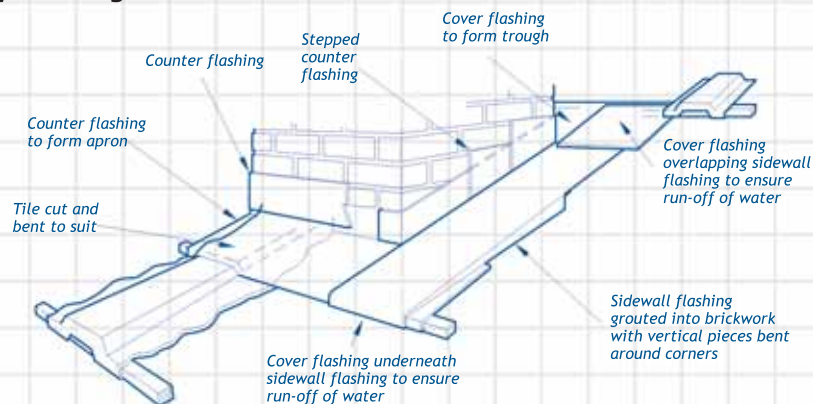
There are two options for this detail:

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

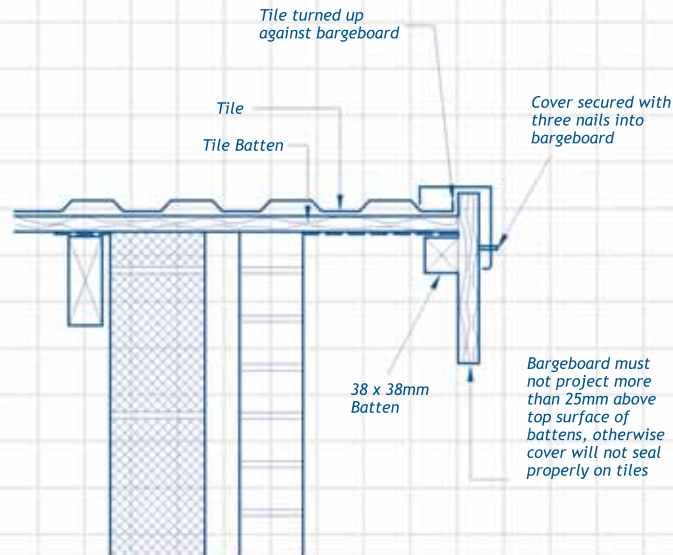


GABLE END DETAILS

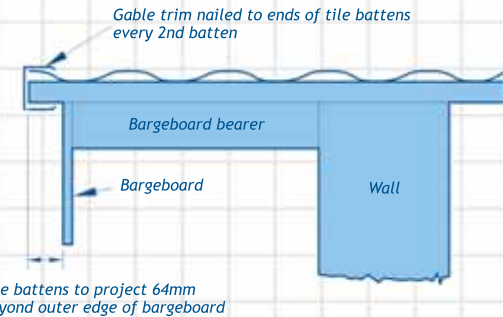
Bargeboard Cover

This optional fitting, besides providing a neat finish, protects the end of the battens from water running between the ends of the tiles and the bargeboard. Left and right hand applications are available.

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



Gable Trim

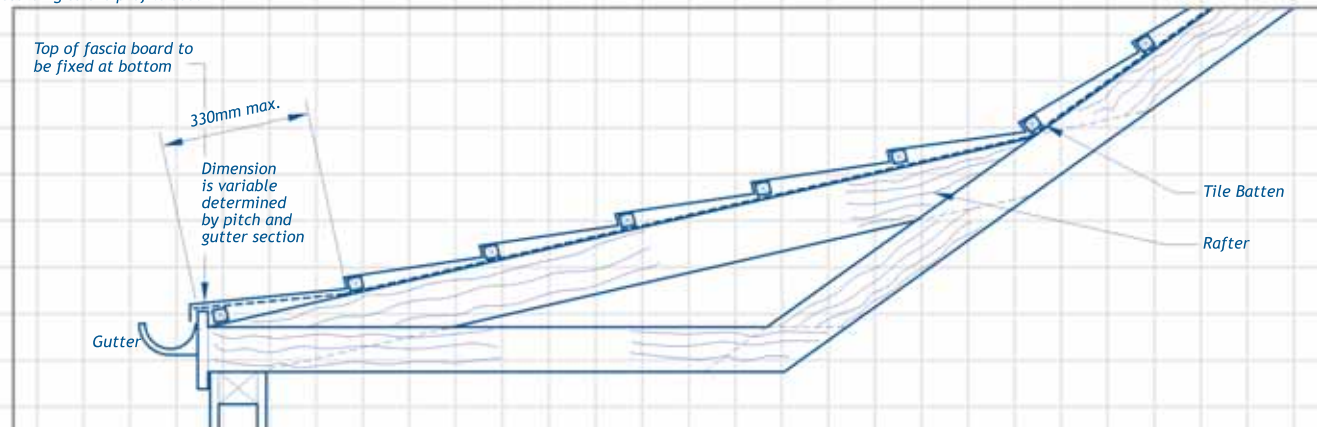


Note:

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

Break in Roof Pitch Detail

Batten spacing measured according to the profile used



VALLEY DETAILS

MANSARD DETAILS

Note: These drawings just show battens, valleys and tiles

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:

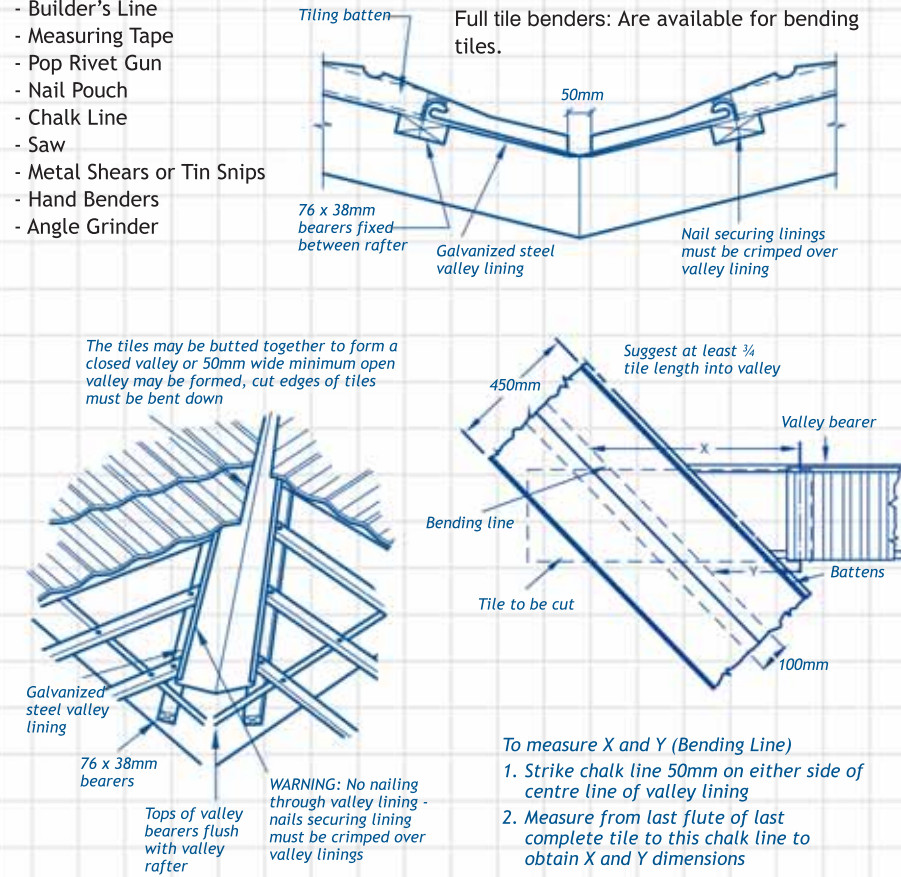
- Claw and Ball Hammer
- Builder's Line
- Measuring Tape
- Pop Rivet Gun
- Nail Pouch
- Chalk Line
- Saw
- Metal Shears or Tin Snips
- Hand Benders
- Angle Grinder

Cutting Tools

Angle Grinder: This is the most common method of cutting tiles.

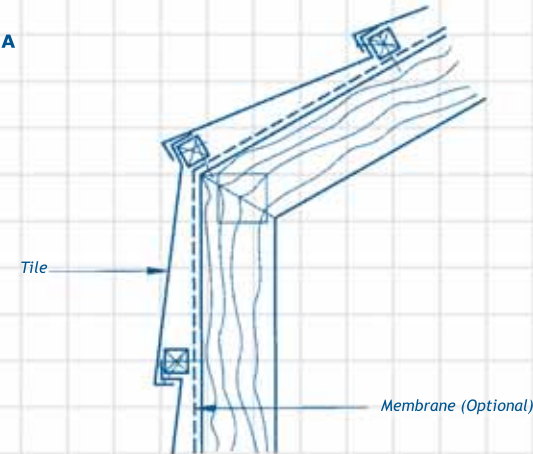
Tin Snips: Ideal for cutting shorter lengths such as detailing at junctions.

Full tile benders: Are available for bending tiles.

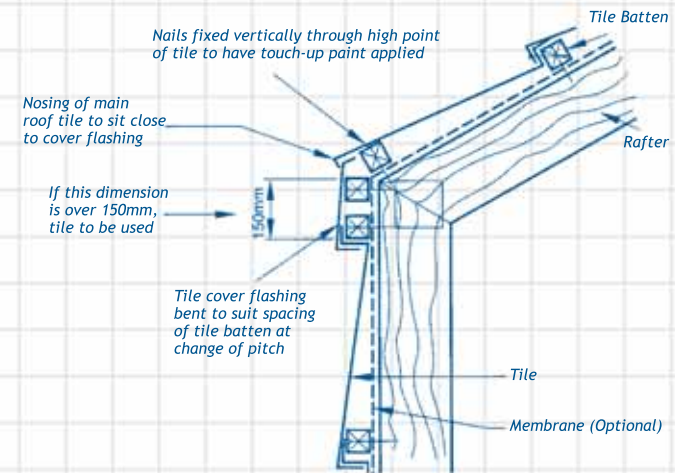


Batten Spacing Measured According To Tile Profile Used

Type A

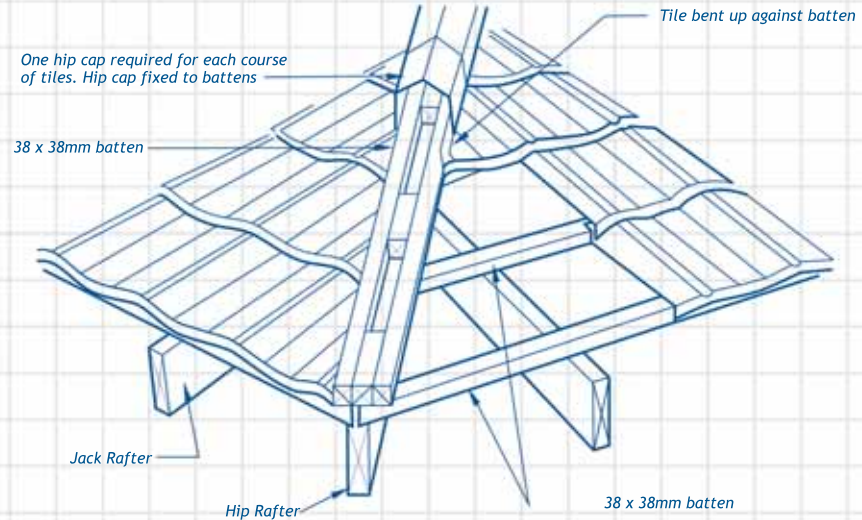
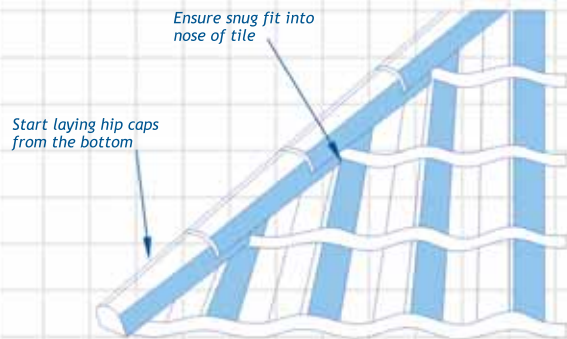


Type B

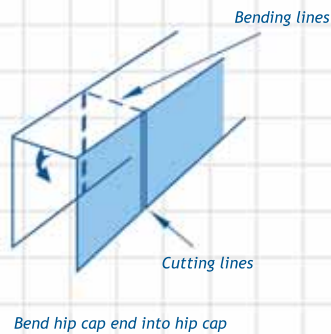


HIP DETAILS

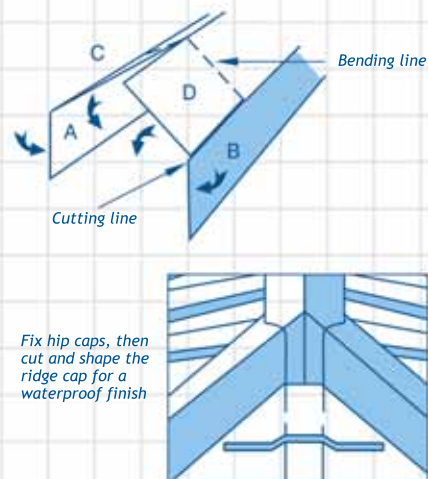
1. Hip caps are fitted starting from the bottom of the hip.
2. Hip caps must be laid with the back (deepest end) of the cap fitted against the front end of the tiles (the nose) in the course above.
3. Caps are tapered to ensure a snug fit of



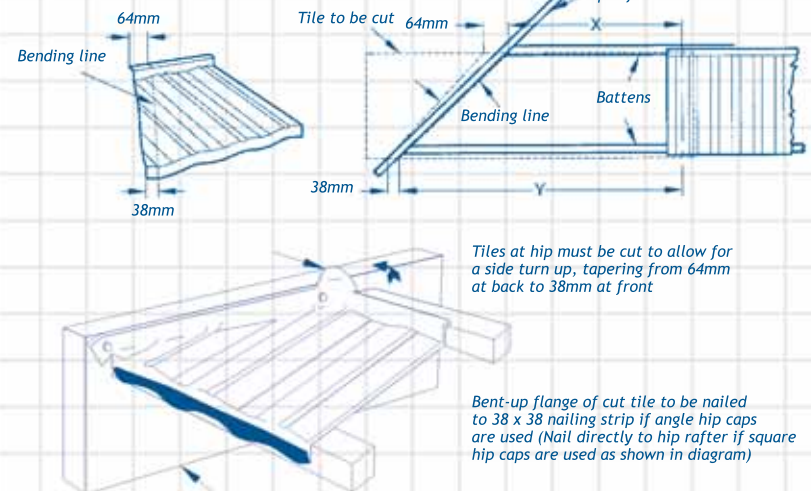
Square Hip Cap



Angle Hip Cap



Cutting tile flanges before bending up



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 and Tuff Tiles

Eaves Length (m)	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	91	98	105	112	119	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

Tile Calculator for Sharktile and Thatch Tiles

Eaves Length (m)	Rafter Length	2 450	2 800	3 150	3 500	3 850	4 200	4 550	4 900	5 250	5 600	6 950	6 300	6 650	7 000
		7	8	9	10	11	12	13	14	15	16	17	18	19	20
3 240															
4 860	2	14	16	18	20	22	24	26	28	30	32	34	36	38	40
6 480	3	21	24	27	30	33	36	39	42	45	48	51	54	57	60
8 100	4	28	32	36	40	44	48	52	56	60	64	68	72	76	80
9 720	5	35	40	45	50	55	60	65	70	75	80	85	90	95	100
11 340	6	42	48	54	60	66	72	78	84	90	96	102	108	114	120
12 960	7	49	56	63	70	77	84	91	98	105	112	119	126	133	140
14 580	8	56	64	72	80	88	96	104	112	120	128	136	144	152	160
16 200	9	63	72	81	90	99	108	117	126	135	144	153	162	171	180
17 820	10	70	80	90	100	110	120	130	140	150	160	170	180	190	200
	11	73	88	99	110	121	132	143	154	165	176	187	198	209	220

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*	1 155	1 528
35*	1 221	1 578
40*	1 305	1 644
45*	1 414	1 732
50*	1 556	1 850
55*	1 643	2 009
Batten Centres		Tile m ²
Elite	369 c/c	1,7
Tuff	369 c/c	1,7
Roma	369 c/c	1,7
Academy	369 c/c	1,66
Shaktile	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:

$$\text{Span} \div 2 = 3\,000$$

$$3\,000 \times 1\,155 \text{ (constant for } 30^\circ \text{)}$$

$$= 3\,465 \text{ m} \div \text{tile batt centre}$$

$$= \text{number of courses of tiles from ridge to gutter}$$

$$\text{ie. } 3\,465 \div 369 \text{ (Elite)} = 9.39 \text{ therefore 10 rows of tiles}$$

Now take overall length and \div tile cover

$$12\,000 \div 1.6 = 7.5 \text{ tiles (1 side calc.)}$$

Conclusion: therefore 7.5×10 rows = 75 tiles $\times 2$ for both sides. Therefore $75 \times 2 = 150$ 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)

$$3\,000 \times 1\,528 = 4\,584 \text{ L/m}$$

There are two such hips therefore total hip length is

$$4\,584 \times 2 = 9\,168$$

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)

$$4\,584 \times 0.3 = 1\,375 \text{m}$$

$$1\,375 \text{m} \times 2 = 2.75 \text{m of extra tiles required}$$

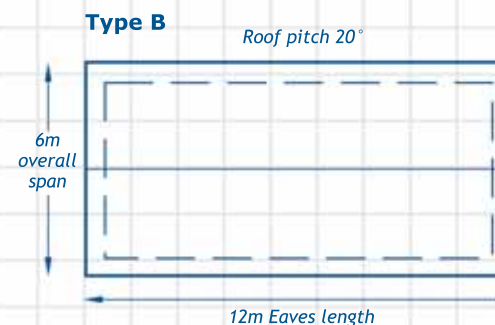
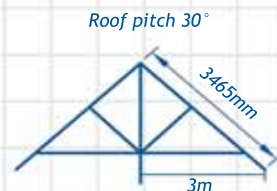
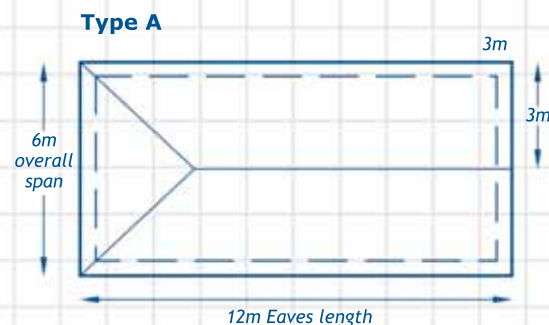
Therefore $2.75 \times 1.72 = 4.73$ tiles rounded off = 5 tiles. Therefore 5 tiles required per hip $\times 2$ hips. 10 tiles for cutting are required.

Valleys

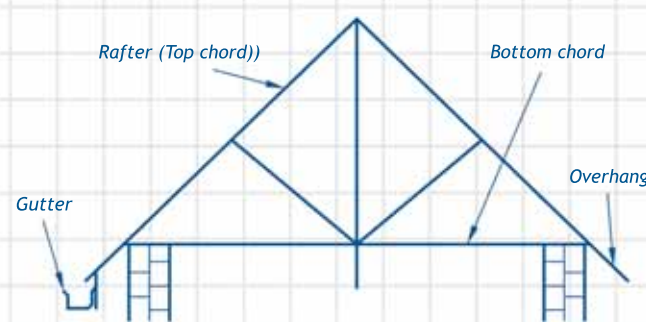
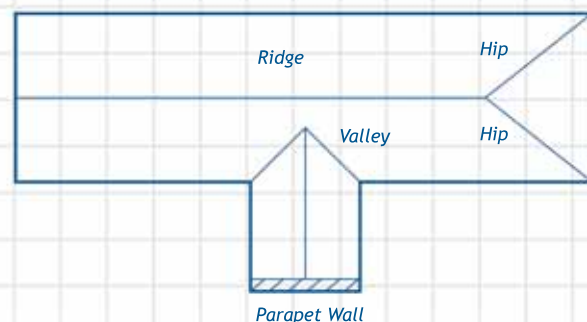
Calculate your valleys with the same formula as shown for hip and hips rake and waste.

Ridges

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



Roof pitch 20°



Calculate flat area including overhang

$$12\,000 \times 6\,000 = 72\text{m}^2$$

therefore $72\text{m}^2 \times \text{relevant roof pitch factor}$

(Useful Constant Table)

$$= \text{total roof area } 72\text{m}^2 \times 1.064 = 76.60$$

Now multiply total roof area by the required tiles per m^2

i.e. Elite: $76.60 \times 1.72 = 131.76$ 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

design and fixing result in a finished product which is both weather 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.

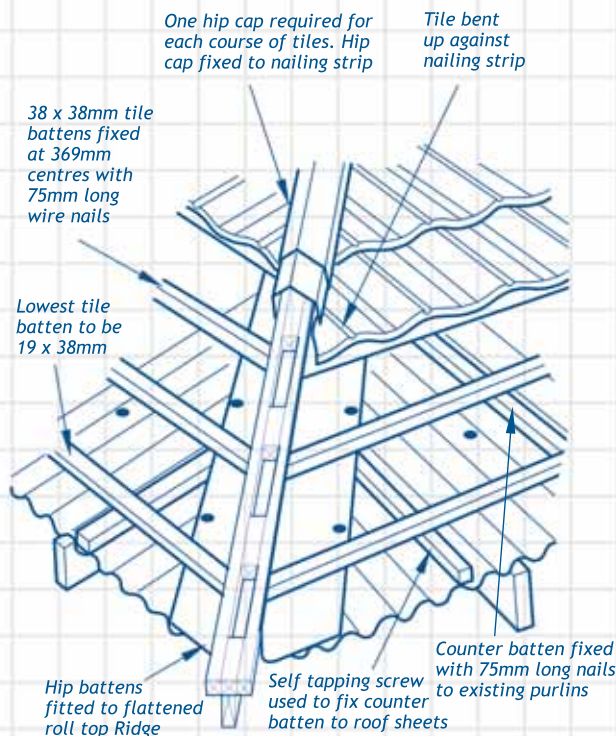
Pitch

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

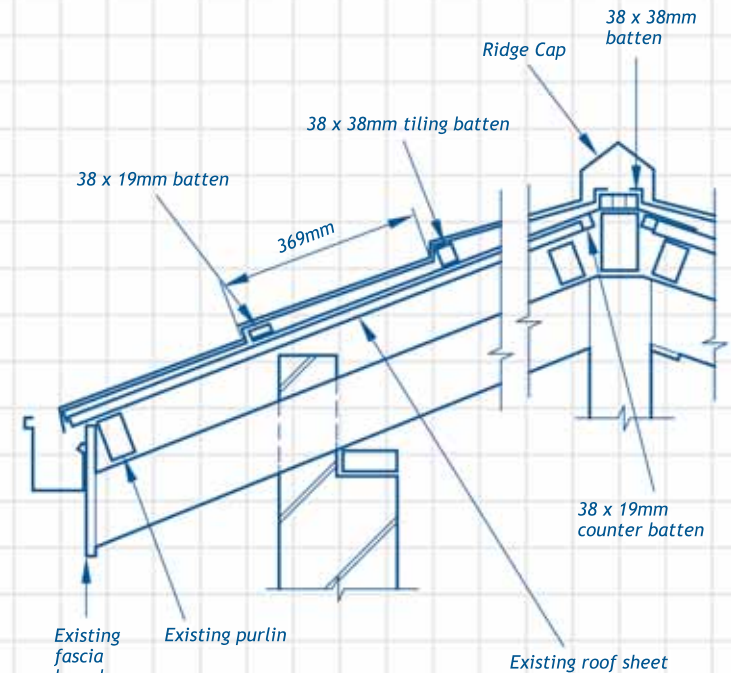
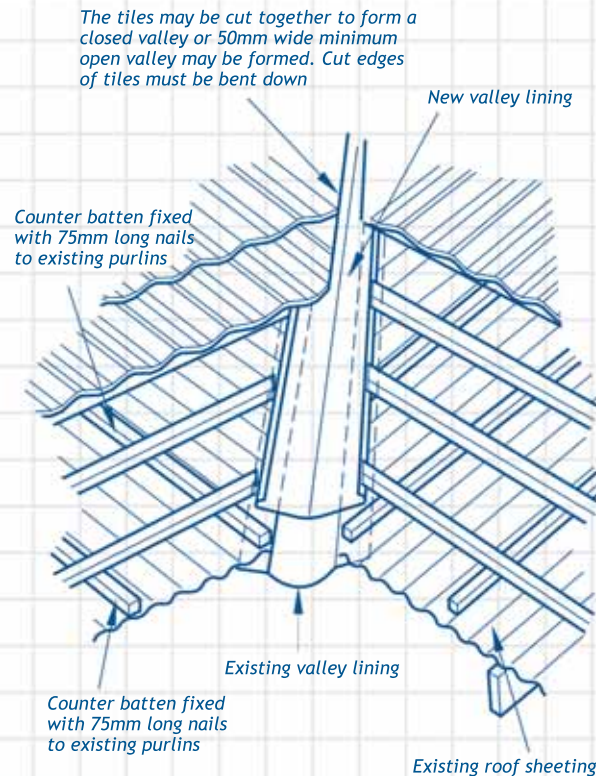
1. Counter battens of 38 x 19mm cross section are laid in the flutes of the existing corrugated steel roof sheets from eaves to ridge at maximum centres of 1.1m. These counterbattens are nailed through the roof sheeting to the existing timber purlins with 75mm wire nails.
2. Tiling battens of 38 x 38mm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

Note: Counter batten size will be determined by type of existing roof sheet covering.

Re-Roof Hip Detail



Re-Roof Valley Detail



COLOUR RANGE

Standard Acrylic colour range



Dark Blue



Terracotta



Green



Burgundy



Black

Colours shown may vary from the true colour due to the printing process

Stonecoat colour range

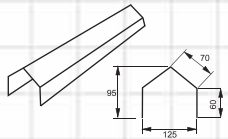


Thatch

Available on request. Minimum quantities are applicable

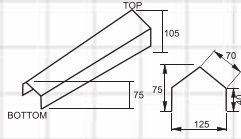
Accessories

Angle Ridge



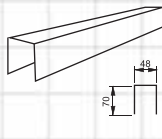
Fixed to double batten at apex
Length: 1720mm
(cover 1600mm)
Width: 125mm tapered
lengthwise
Height: 95mm
Mass: 2.5kg

Angle Hip Cap



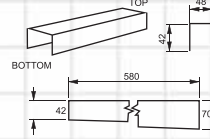
Fixed to double batten at hip battens
Length: 580mm
(cover 1 per tile course)
Width: 125mm tapered down
to 123mm
Height: 75mm tapered up to
105mm

Square Ridge



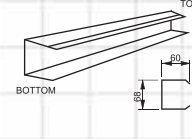
Fixed to double batten at apex
Length: 1720mm
(cover 1600mm)
Width: 48mm tapered
lengthwise
Height: 70mm
Mass: 1.8kg

Square Hip Cap



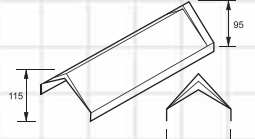
Fixed to single hip batten
Length: 580mm
(cover 1 per tile course)
Width: 48mm tapered down
to 45mm
Height: 42mm tapered up
to 70mm
Mass: 0.5kg

Gable Trim



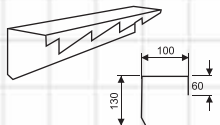
Fixed to gable ends
Length: 1720mm
(cover 1600mm)
Width: 60mm
Height: 68mm tapered up
Mass: 1.8kg

Shake Trim



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

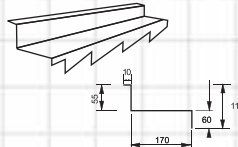
Bargeboard Cover



Left and right hand serrated. Fixed to
barge boards at gable ends. Sketch
shows right handed barge board cover.

Length: 1550mm
cover 4 tile courses
Height: 130mm
Mass: 2.3kg

Sidewall flashing



Left and right handed serrated.
Sketch shows right handed sidewall.

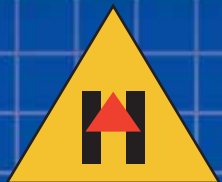
Length: 1550mm
cover 4 tile courses
Width: 170mm
Height: 115mm
Mass: 2.4kg
Upper Lip: 10mm

Cover flashing



For use at headwall and sidewall flashing
as well as for short courses at ridge.

Length: 1720mm
Cover: 1600mm
Width: 240mm
Upper Lip: 25mm
Mass: 2.5kg



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