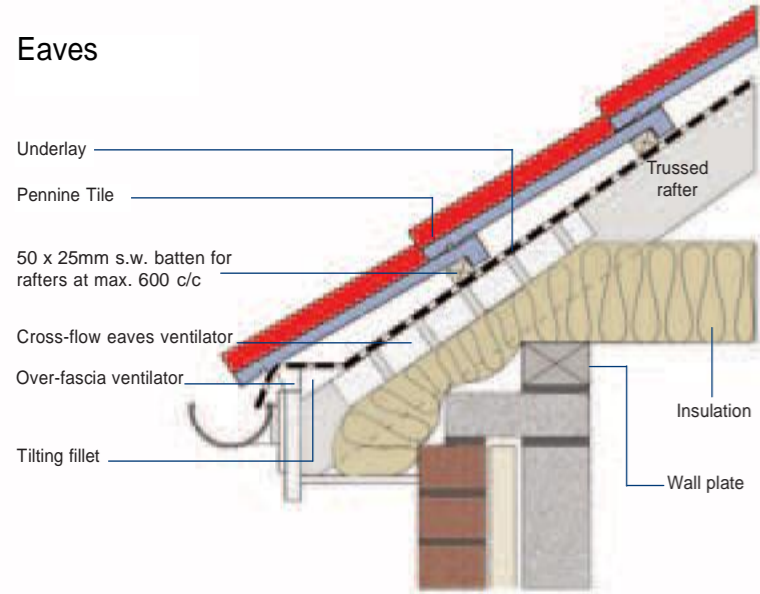


# Typical Details

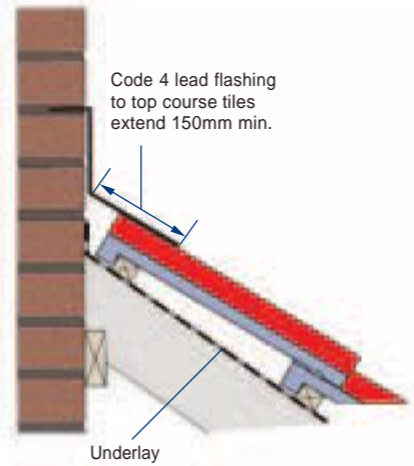


# Pennine Tile

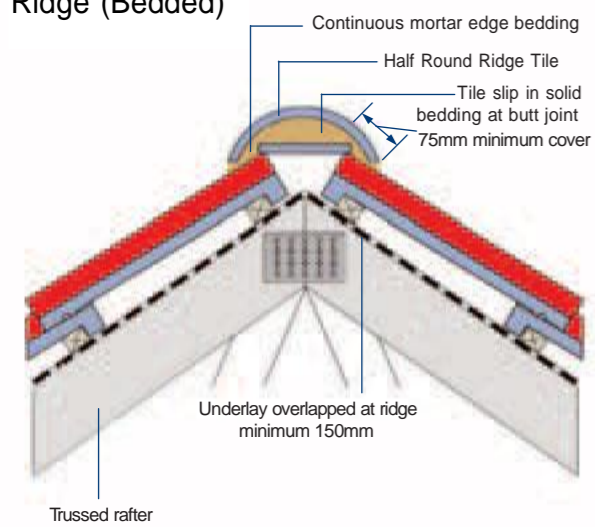
## Eaves



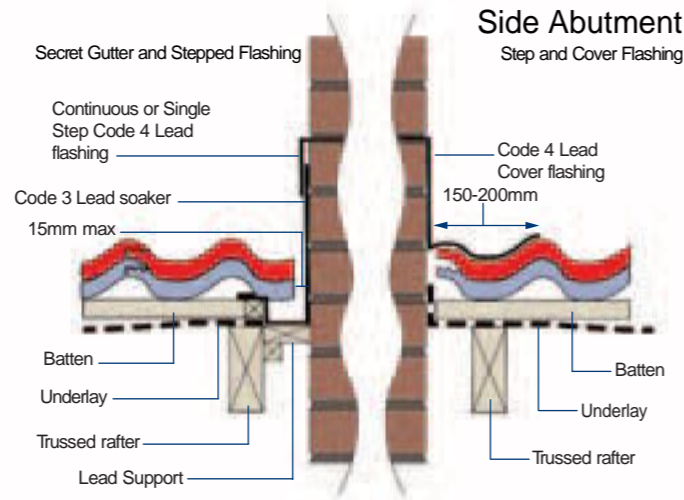
## Top edge abutment



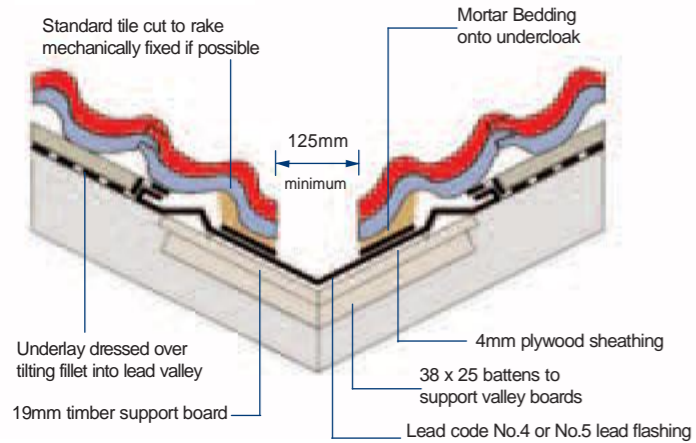
## Ridge (Bedded)



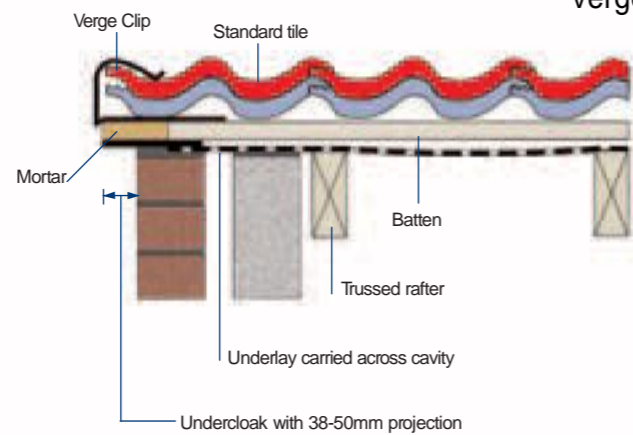
## Side Abutment



## Lead Valley



## Verge



The Pennine is a standard profile roof tile with a subtle 'soft' roll design. It creates a gently undulating roof with the security provided by its interlocking design.

### Features and Benefits



Robust smooth flowing double pan tile design.

Suitable for all styles of roof.

### Tile Specification

The roof is to be covered with 418mm x 330mm Pennine Tiles laid straight bonded to a gauge of 343mm with a headlap of 75mm and fixed with 40mm x 3.35mm Aluminium alloy nails. Smooth or annular ring shank as fixing specification or clipped where necessary.

Technical Data	
Compliance	Manufactured in accordance with the requirements of BS EN 490 "Concrete Roof Tiles and Fittings-Product Specifications" and BS EN 491 "Concrete Roof Tiles and Fittings-Test Methods"
Manufacture	Produced by high pressure extrusion and compaction
Fire	Non-combustible when tested to BS476: Part 3:1975 (spread of flame and fire penetration). SAA Classification
Guarantee	Tiles are guaranteed for a period of 60 years from the date of supply (subject to the normal terms of guarantee)
Maximum Pitch	60° (Subject to fixing specification)
Minimum Pitch	22.5° (75mm Headlap) Smooth finish 30° (75mm Headlap) Granular finish
Headlap (minimum)	75mm
Gauge (maximum)	343mm
Covering Width	298mm
Covering Capacity (net)	75mm Headlap - 9.8 Tiles/m <sup>2</sup> 100mm Headlap - 10.6 Tiles/m <sup>2</sup>
Weight of Tiling	75mm Headlap - 48kg/m <sup>2</sup> (approx) 100mm Headlap - 51kg/m <sup>2</sup> (approx)
Weight per 1000 Tiles	4.8 tonnes (approx)
Batten Size - minimum (for rafters not exceeding 600mm c/c nailed to BS5534)	50x25mm
Battens required	75mm Headlap - 2.9m per m <sup>2</sup> 100mm Headlap - 3.1m per m <sup>2</sup>
Ridge	Universal Angle Ridge or Multi Ridge 110° capped Angle Ridge 90° Angle Ridge, Feature Ridge Tiles or Finials Dry Ridge System (ventilated or unventilated) Security Ridge Gas Vent Ridge Terminal Soil/Vent Pipe Ridge Terminal
Eave	Standard Tile
Verge	Standard Tile with 150mm wide fibre reinforced cement strip to provide 38-50mm overhang or Russell Interlocking Cloak Verge Units Russell Interlocking Dry Verge Units
Hips	Third round
Valleys	Open Metal Valley or GRP Valley Trough
Abutments	Cover flashing with Lead Soaker or cover flashing with Secret Gutter (severe exposed conditions)
Nails for Tiles	40mm x 3.35mm Aluminium Alloy Nail Smooth or annular ring shank dependant upon fixing specification

Tiles required along eaves	
Lin Metres	No. of Tiles
0.29	1
0.59	2
0.89	3
1.19	4
1.49	5
1.78	6
2.08	7
2.38	8
2.68	9
2.98	10
3.27	11
3.57	12
3.87	13
4.17	14
4.47	15
4.76	16
5.06	17
5.36	18
5.66	19
5.96	20
6.25	21
6.55	22
6.85	23
7.15	24
7.45	25
7.74	26
8.04	27
8.34	28
8.64	29
8.94	30
9.23	31
9.53	32
9.83	33
10.13	34
10.43	35
10.72	36
11.02	37
11.32	38
11.62	39
11.92	40
12.21	41
12.51	42
12.81	43
13.11	44
13.41	45
13.70	46
14.00	47
14.30	48
14.60	49
14.90	50
15.19	51
15.49	52
15.79	53
16.09	54
16.39	55
16.68	56
16.98	57
17.28	58
17.58	59
17.88	60
18.17	61
18.47	62
18.77	63
19.07	64
19.37	65
19.66	66
19.96	67
20.26	68
20.56	69
20.86	70
21.15	71
21.45	72
21.75	73
22.05	74
22.35	75

Rafter courses: 75mm Headlap	
Lin Metres	No. of Tiles
2.28	7
2.36	7
2.43	8
2.51	8
2.59	8
2.66	8
2.74	8
2.81	9
2.89	9
2.97	9
3.04	9
3.12	10
3.20	10
3.22	10
3.35	10
3.42	10
3.50	11
3.58	11
3.65	11
3.73	11
3.81	12
3.88	12
3.96	12
4.03	12
4.11	12
4.19	13
4.26	13
4.34	13
4.42	13
4.49	14
4.57	14
4.64	14
4.72	14
4.80	14
4.87	15
4.95	15
5.02	15
5.10	15
5.18	16
5.25	16
5.33	16
5.41	16
5.48	16
5.56	17
5.63	17
5.71	17
5.79	17
5.86	18
5.94	18
6.02	18
6.09	18
6.17	18
6.24	19
6.32	19
6.40	19
6.47	19
6.55	20
6.62	20
6.70	20
6.78	20
6.85	20
6.93	21
7.01	21
7.08	21
7.16	21
7.23	22
7.31	22
7.39	22
7.46	22
7.54	22
7.62	23

Rafter courses: 100mm Headlap	
Lin Metres	No. of Tiles
2.28	8
2.36	8
2.43	8
2.51	8
2.59	9
2.66	9
2.74	9
2.81	9
2.89	10
2.97	10
3.04	10
3.12	10
3.20	11
3.22	11
3.35	11
3.42	11
3.50	12
3.58	12
3.65	12
3.73	12
3.81	12
3.88	13
3.96	13
4.03	13
4.11	13
4.19	14
4.26	14
4.34	14
4.42	14
4.49	15
4.57	15
4.64	15
4.72	15
4.80	16
4.87	16
4.95	16
5.02	16
5.10	17
5.18	17
5.25	17
5.33	17
5.41	18
5.48	18
5.56	18
5.63	18
5.71	18
5.79	19
5.86	19
5.94	19
6.02	19
6.09	20
6.17	20
6.24	20
6.32	20
6.40	21
6.47	21
6.55	21
6.62	21
6.70	21
6.78	22
6.85	22
6.93	22
7.01	23
7.08	23
7.16	23
7.23	23
7.31	23
7.39	24
7.46	24
7.54	24
7.62	24

Recommended Specifications	
Underlay	<ul style="list-style-type: none"> <li>Roofing underlay to BS.5534 to be laid over rafters or rigid sarking, lapped horizontally and vertically to manufacturers recommendation and to be carried well into the gutters and secured with clout nails</li> <li>Water traps behind fascia should be avoided by provision of a proprietary underlay support or continuous tilting fillet</li> </ul>
Battens	<ul style="list-style-type: none"> <li>Approved quality softwood tiling battens to be laid maximum gauge 318mm secured to rafters with galvanised wire nails</li> <li>To be at least 1.2m in length and fixed at each rafter with minimum one nail</li> <li>To be butt jointed over rafters</li> <li>No more than one batten in four to be jointed over each rafter</li> <li>All ends must be sawn</li> </ul>
Eaves	<ul style="list-style-type: none"> <li>Standard tiles to be laid along eaves course</li> <li>Ensure fascia board height or tilting fillet is correct so the eaves course is in the same plane as main roof and discharges into centre of gutter (approx. 38-50mm)</li> <li>All tiles to be mechanically fixed</li> </ul>
Abutments	<ul style="list-style-type: none"> <li>Where tiling meets a top abutment tiles should be:                             <ol style="list-style-type: none"> <li>Laid as close to the wall as possible</li> <li>Fixed with Russell Abutment Vent System and code 4 lead flashing in accordance with L.S.A. guidelines</li> </ol> </li> </ul>
Valleys	<ul style="list-style-type: none"> <li>To be formed with a lead lining or GRP trough fully supported by valley boards</li> <li>Adjacent tiling to be cut neatly with bedded onto undercloak leaving a clear channel of not less than 150mm in accordance with L.S.A. guidelines</li> </ul>
Mortar	<ul style="list-style-type: none"> <li>Where used it should consist of 3 parts sharp sand to 1 part Portland cement or any mix that meets BS.5534 (clause 4.15)</li> </ul>
Hips	<ul style="list-style-type: none"> <li>To be covered with 120° Angle Hip Tiles</li> <li>Edge bed onto tiles with solid bedding at butt joints</li> <li>Galvanised hip iron to be fitted at foot of each hip as support</li> </ul>
Verges	<ul style="list-style-type: none"> <li>To be formed with Standard Tiles, bedded onto 150mm wide fibre reinforced strips allowing overhang of approx 38-50mm over brickwork gable/argeboard</li> <li>To be formed with Russell Interlocking Dry Verge units, fitted in accordance with instructions</li> <li>To be formed with standard or half tiles in conjunction with Russell Cloak Verge Units max. overhang not to exceed 50mm without use of soffit strap</li> </ul>
Ridge	<ul style="list-style-type: none"> <li>To be covered with Russell Universal Angle Ridge Tiles Edge bedded onto the tiles with solid bedding at butt joints. 75mm min. cover over tops course. Provision should be made for mechanical fixing of two security ridge tiles, at each gable, party wall or abutment.</li> <li>Dry Ridge - Russell Ventilated and Unventilated fitted in accordance with instructions.</li> <li>The Russell Dry Ventilated Ridge System provides the free area equivalent of a continuous 5mm gap to meet the requirements of the Building Regulations and BS 5250</li> </ul>

**Fixing Note:** We recommend that our customers complete a fixing specification form for the roof. The Russell service is free of charge and provides specification that complies with BS.5534. It ensures that all topographical features are accounted for and removes the potential for roof failure. For information go to: [www.cemex.co.uk](http://www.cemex.co.uk) and click on Russell Please see additional literature for corresponding handfittings and DryFix