

SBQ 2423

Build-up Rates for Roof Coverings

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Materials

1. Roof tiles

Size of roof tiles	= 420mm x 330mm
End laps	= 75mm
Edge laps	= 35mm
1 roof tiles	= gauge x width opening = (0.420m – 0.075m) x (0.330m – 0.0035m) = 0.345m x 0.295m = 0.101775 m²
No. of roof tiles/m²	= <u>1.00 m²</u> 0.101775 m² = <u>9.83 No.</u>

2. Timber batten

Size of roof tiles	= 420mm x 330mm
No. of roof tiles/m²	= 9.83 no.
Width opening of roof tiles	= 0.295 m
Length of batten/m²	= no. of roof tiles for 1 m² x Width opening of roof tiles = 9.83 No. x 0.295m = <u>2.90 m</u>

Quantity Of Concrete Interlocking Roof Tiles

SIZE ROOF TILE (MM)	NO. OF ROOF TILE (no)	LENGTH OF BATTEN (m)
380 X 230	16.81	3.28
420 X 280	13.48	2.90
420 X 330	9.83	2.90
430 X 380	8.16	2.82

3. Nails

Types of roof tiles	Tiles size (mm)	Weight per piece	No of tile per M2	End lap (mm)	Batten spacing (max) (mm)	Nail per m2 at every course (kg)	Batten per M2 (2" x 1") (m)
Concord 288	420 x 330	4.5kg	9.8	75	345	0.10	2.90
Mornier	420 x 330	4.2kg	9.7	75	345	0.10	2.90
Vintage	438 x 330	4.5kg	9.4	75	355	0.10	2.82
Clayon SRT/01	445 x 275	4.0kg	12.5	75	368	0.13	2.72
GCI Eagle 'S' Pantile	420 x 280	3.5kg	12.5	75	345	0.13	2.90

4. Ridge capping

Standard size = 3m length

Labour Constant

Type of works	Labour fixing or every M2	Nails for every M2
Floor & ceiling joist / runners	26.50 hours	2.12 kg
Roof trusses	35.30hours	4.24kg
Batten fascia board	35.30hours	4.24kg

Costing For Roof Covering

420mm x 330mm 'Mornier' Nordica or approved concrete interlocking roof tiles as described with 63mm galvanized nails at every each roof tiles and laid all as per manufacturer's details.

Roof tiles	= 420mm x 330mm = RM 1.38/no
Timber	= 25mm x 50mm = RM 950.00/tonne
Spacing of rafter	= 600mm

MATERIAL COST

a) Cost Of Roof Tiles

9.83 pcs x RM 1.38	= RM 13.57
Allow wastage 5%	= RM 0.68
Roofing Tile Cost per M2	=RM 13.57 + RM 14.25 = <u>RM 14.25</u>

b) Cost Of Batten

Batten	= RM 950.00 x <u>2.90m</u> 549.0m = RM 5.02
Allow wastage 10%	= RM 0.50
Cost of nails	= 2.90 m/ 1097m x 4.24Kg x RM 7.00 = RM 0.08
Cost of timber batten per M2	= RM 5.02 + RM 0.50 + RM 0.08 = <u>RM 5.60</u>

c) Ridge

1 pcs = 3M	= RM 5.80/M
3pcs x RM5.80	= <u>RM 17.40</u>

LABOUR COST

a) Cost Of Labour For Laying Roof Tiles

Roof Tiler's Wage	= RM 80.00/hours
Cost Of Roof Tiles Per Hour	= RM 10.00
Nos Of Roof Tiles Fixed Per Person Per Hour	= 95 pcs
Cost Of Labour Per Piece Of Roof Tile	= <u>RM 10.00</u> 95 pcs = RM 0.11
Nos Of Roof Tiles Per M2	= 9.83 pcs
Cost Of Labour Per Roof Square Of Roof Tiles	= 9.83pcs x RM 0.11
Labour Cost Per M2	= RM 1.08

b) Cost of labour for fixing batten

Labour constant per M3	= 35.30 hours
Daily wage of capenter	= <u>RM 80.00</u> 8 hours = RM 10.00
Labour cost per M3 of timber batten	= RM 10.00 X 35.30 hours = RM 353.00
Volume of timber per M2	= 0.05 X 0.03 X 2.90 = 0.0043
Cost Of Labour M2	= 0.0043 X RM 353
Cost Of Labour for fixing batten	= RM 1.52

UNIT COST

Cost Of M2 Of Timber Batten	= RM 5.60] ADD
Labour Cost For Fixing Batten Per M2	= RM 1.52	
Add Cost For Concrete Roofing Tiles	= RM 14.25	
Add Cost For Ridge Capping	= RM 17.40	
Cost Of Roofing Tiles Including Batten Per M2	= RM 38.77	
Quantity Of Monier Concrete Interlocking Roof Tiles	= 141m²	
Total = 141m² X RM 38.77	= RM5,466.57] ADD
Profit And Overhead 15% x RM5,466.57	= RM 819.99	
Nett Total Based On Project	-RM 6,286.50	