



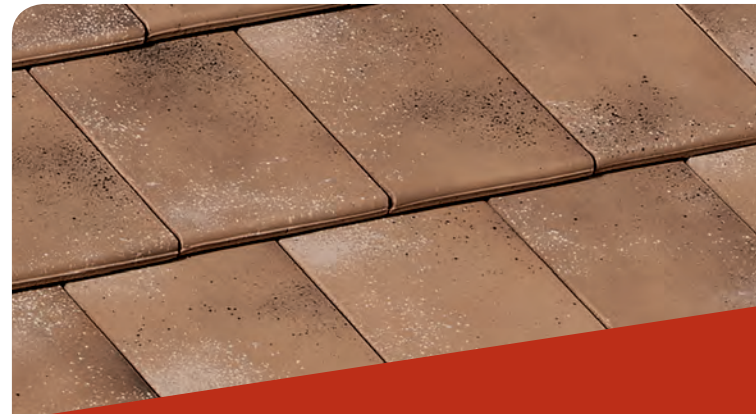
FONTENELLE®



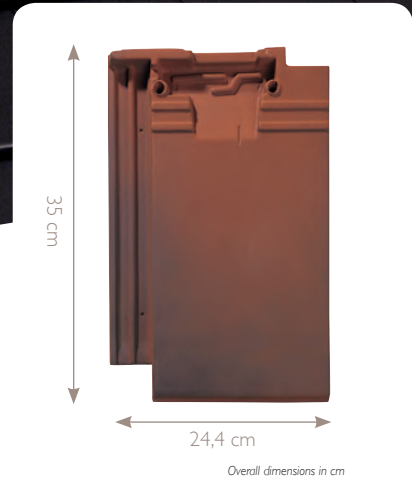
*Excellent watertightness,
variable gauge, thinnest appearance*

Flat Appearance Interlocking Tile

≈ 20/m²



FONTENELLE®



- ✓ Excellent watertightness : Monier guarantees that Fontenelle® tiles can be laid on lower slopes than those recommended by the DTU.
- ✓ Variable gauge : the Fontenelle® tile has a variable gauge of 2 cm.
- ✓ Aesthetic : The Fontenelle® tile has the thinnest appearance.

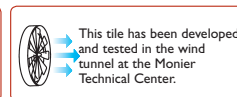
TECHNICAL CHARACTERISTICS

Type	Flat appearance interlocking clay tile
Number of tiles per m ²	19,7 to 21,2
Unit weight	≈ 2,6 kg
Weight per m ²	47,3 to 50,9 kg
Overall length	≈ 35 cm
Overall width	≈ 24,4 cm
Linear cover	≈ 20 cm
Theoretical gauge	23,5 to 25,5 cm
Longitudinal fitting tolerance	2 cm*
Transversal fitting tolerance	≈ 0,2 cm*
Linear metre of battens/m ²	4 to 4,2 ml
Laying	Laid with staggered joints right to left
Product standard	NF EN 1304
Application standard	NF P 31-203 [DTU 40.211]
Number of tiles per pallet	420
Weight per pallet	1100 kg

PRESCRIPTION RECOMMENDATION

The tile shall be made from baked clay from the Flat Gauge Interlocking Tile range, double interlocking, double overlap, with variable gauge, from 19.7 to 21.2 per m², Fontenelle® from Monier style or similar.
Its usual fitting tolerances are 2 cm lengthways, with a longitudinal interlocking of 48 mm and 0.4 cm crosswise. Laying shall be carried out with broken joints, from right to left, on batten in accordance with application standard NF P 31-203 [DTU 40-211]. Their installation shall be carried out using all parts specially designed for dry mortarless laying of ridges and edges as specified in the DTU.

GUARANTEE



CLAY TILES
Class 1 watertightness
freezing resistance trials carried out
according to NF EN 539-2
www.marque-nf.com

* Usual fitting tolerance stated apply from actual average gauges and widths checked on delivery as per DTU.

For any projects developed within the context of an HQE® approach, an Environmental and Health Declaration Sheet for this tile is available on request.

COLOR KEY



Natural Red (2N)



Antique Red (7E)



Charcoal Grey (3G)



Chaume Vieilli (1V)



Moka (9K)

The firing process of the clay may produce slight differences in colour. To obtain a roof with a homogeneous appearance, we recommend mixing tiles from different pallets.
The printing processes do not necessarily guarantee a faithful reproduction of colours. Ask to see them in situ.
These values are given for information purpose only and are likely to change.

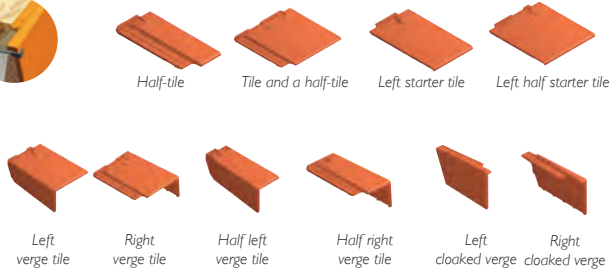
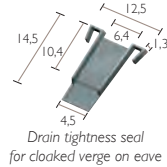
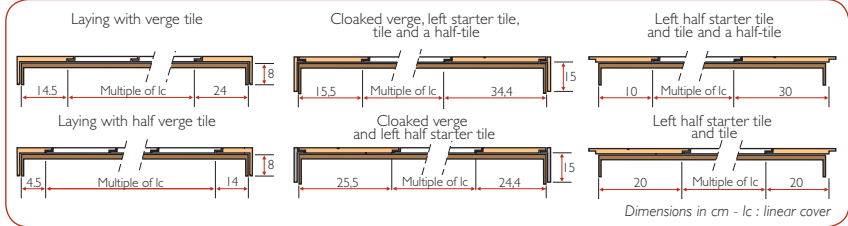
THE MAIN FEATURES

VERGES

The Fontenelle® verge accessories provide three verge finishing options:

- Cloaked verges,
- Verge tile and half verge tile,
- Starter tile and half starter tile.

Broken joints can be created by using half tiles. Monier has a unique drain tightness solution with its Fontenelle® verge tiles which do not require additional parts. However, when an installation with individual cloaked verges is favoured, Monier recommends the use of a plastic part, referred to here as a part for drain tightness seal (or otherwise known as a "flashing board"), in order to ensure the watertightness of the verges at drain level, when installing individual verges only. This part can be installed both on the left and the right and allows the water to flow to the drain.



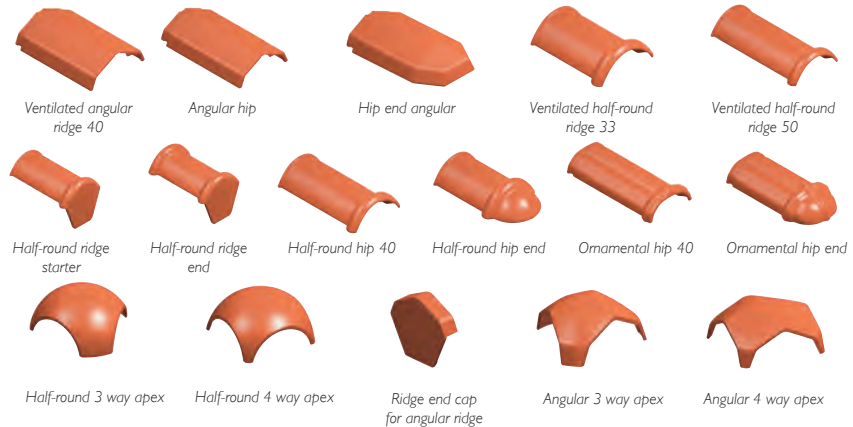
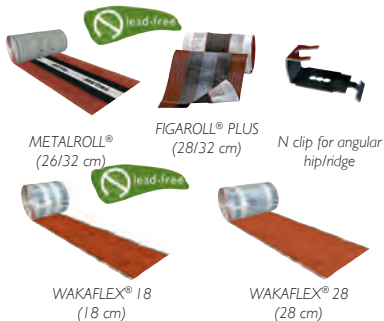
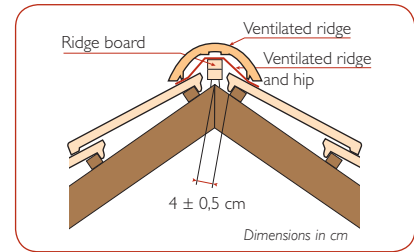
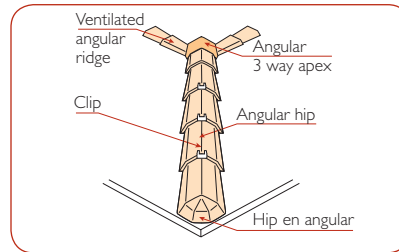
HIP / RIDGE

Monier recommends laying dry with ventilated weather stripping in a roll.

This system enables the ridge and hip to adapt to the nature movements of the roof.

The ridge courses are made by cutting the tiles closest to the ridge board. The tile and half enables to realize cuttings.

All ridges and hips must be fastened with a clip. The dry ridge/hip is quick to lay, provides good ventilation, and makes future work easier.



AERATION AND VENTILATION

The underside of the tile and their support must be ventilated. This ensures overall correct behaviour of roofing components over time.

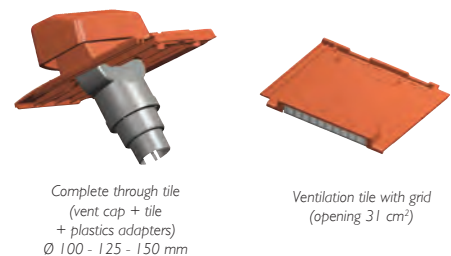
The use of ventilation tiles is recommended at the upper and lower parts of the roof. The total of ventilation openings must be distributed equally between lower part of the roof slope and near the ridge. Humid or foul air outlets from the ventilation or extraction of living areas by forced mechanical ventilation or other systems, must be routed out of attic spaces.

For further information on these two points, please refer to the DTU in force.

Preferably, exhaust tiles are to be located at the top of the slope.

Type of attic	Total ventilation section ⁽¹⁾
	$S = 0$
	$S = 0$
	$S_1 = 0$ $S_2 = 1/3\ 000$ ⁽²⁾
	$S_1 = 0$ $S_2 = 1/3\ 000$ ⁽²⁾

(1) Related to the surface area projected horizontally
 (2) Except for Spirtech® type breathing roof underlays.



The design of the FONTENELLE® tile ensures a bottom ventilation of 83 cm²/ml.

Note :
 for better performance, the through tiles must be laid as much as possible near ridges.
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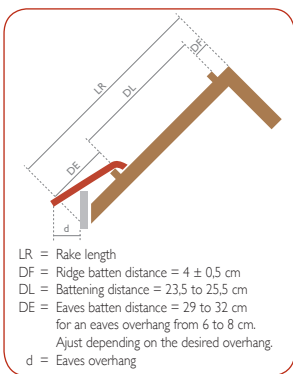
THE MAIN FEATURES

VALLEY AND EAVES

All tiles on the eaves must be fastened.
Please refer to the DTU in force:
• Europanneton® D3P Inox
Monier proposes a range of preformed valleys.

Laying of a ventilated eaves batten (ventilation 200 cm²/m) on the tilt batten guarantees linear ventilation in the lower section in accordance with the DTU's recommendations.

The dimension DE mentioned by Monier is given as an example. This dimension will vary according to several parameters : cant height, gauge, roof pitch and overhang d, and may be adjusted to achieve the required overlap. The interlocking part (water flow) must to be taken into account when defining dimensions DE and d.



UNDER-ROOF



LAYING TILES IN A SQUARE LAYOUT

For violent winds, Monier recommends going beyond the DTU recommendation and therefore fastening all tiles.

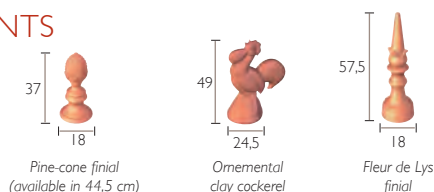
- The wind zones concerned are those provided for in rule NV 65 and sites by the reference DTU.
 - One tile fastening every five tiles laid.
- Map reference NV65.

On verges and eaves, all tiles must be fastened.
Use of Europanneton® D3P Inox recommended by Monier.



Pitches in %	Zones I and 2 ⁽¹⁾ Protected and normal sites ⁽¹⁾		Zones I and 2 ⁽¹⁾ : Exposed site ⁽¹⁾ Zones 3 and 4 : All sites	
	Verges and eaves	Running portion	Verges and eaves	Running portion
$p \leq 100$	all	free	all	1/5 ⁽²⁾
$100 < p \leq 175$	all	1/5 ⁽²⁾	all	1/5 ⁽²⁾
$p > 175$	all	all	all	all

ORNAMENTS



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THE REGULATIONS

MINIMUM PITCH TABLE IN %

Monier guarantees the installation of Fontenelle® tiles on pitches of up to 5% lower than those recommended below by the DTU.

MINIMUM ACCEPTABLE PITCHES IN % (NO UNDERLAY)

Sites \ Zones	Zone I	Zone II	Zone III
Sheltered	55	60	70
Normal	60	70	80
Exposed	80	90	100

MINIMUM ACCEPTABLE PITCHES IN % (WITH UNDERLAY)

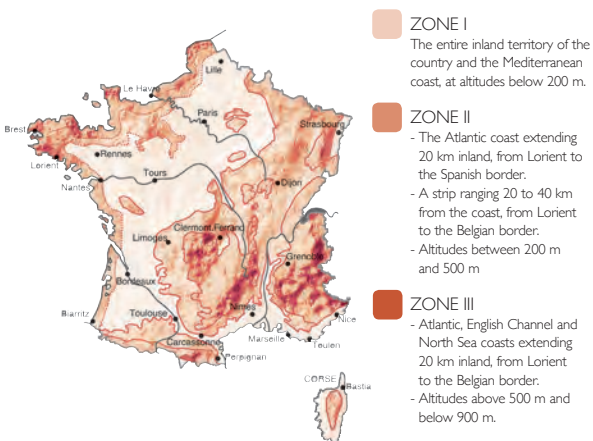
Sites \ Zones	Zone I	Zone II	Zone III
Sheltered	45	50	60
Normal	50	60	70
Exposed	70	75	85

These data are applicable to slopes whose horizontal projection does not exceed 12 m. Building code recommendations.

MINIMUM SLOPE ZONE

France is divided into 3 zones where minimum slope calculations apply (in conjunction with wind-rain)

Note : If in doubt regarding which zone applies, please refer to the definition of the zones below.



- ZONE I**
The entire inland territory of the country and the Mediterranean coast, at altitudes below 200 m.
- ZONE II**
- The Atlantic coast extending 20 km inland, from Lorient to the Spanish border.
- A strip ranging 20 to 40 km from the coast, from Lorient to the Belgian border.
- Altitudes between 200 m and 500 m
- ZONE III**
- Atlantic, English Channel and North Sea coasts extending 20 km inland, from Lorient to the Belgian border.
- Altitudes above 500 m and below 900 m.

DEFINITION OF SITES ACCORDING TO THE DTU

SITES	DEFINITION
Sheltered	Low ground, entirely surrounded by hills which protect it against all wind directions. Site partially bounded by hills in the direction of the most violent winds that provide protection against winds in this direction only.
Normal	Plain or plateau with slight vertical intervals, whether extensive or not (valleys, undulations).
Exposed	Near the sea: inland to a distance of 5 km; the tops of cliffs, islands or narrow peninsulas, estuaries or sheltered bays and ria. Inland: narrow valleys into which the wind is channelled, isolated and high mountains (for example: Mont-Aigoual and Mont-Ventoux) and certain mountain passes.

This breakdown into three zones should not be confused with the breakdown into Snow and Wind regions given in the NV (Snow and Wind) rules.

To prevent ingress of powder snow, the DTU recommends the use of an underlay.
This use is also advocated by SNEST in order to catch and lead down to the gutter any small amounts of water as well as to protect against the ingress of dust or soot.

MONIER reserves the right to change the technical characteristics of its range.