

System  
**BARDOLINE**<sup>®</sup>



*Asphalt Shingle*

- *Longevity*
- *High Quality*
- *Aesthetical*
- *Elasticity*
- *Lightweight*



**Onduline**<sup>®</sup>  
AVRASYA A.Ş.

[www.onduline.com.tr](http://www.onduline.com.tr)



## STANDARD TYPE

The simple and correct installation of standard shingles is entirely dependent on the roof decking being smooth, continuous, clean, dry and seasoned.

The decking can therefore be of wood (tongue and groove planks), plywood, OSB etc. with a suitable support on top of the substructure (wood, concrete, steel or similar).

## PITCH

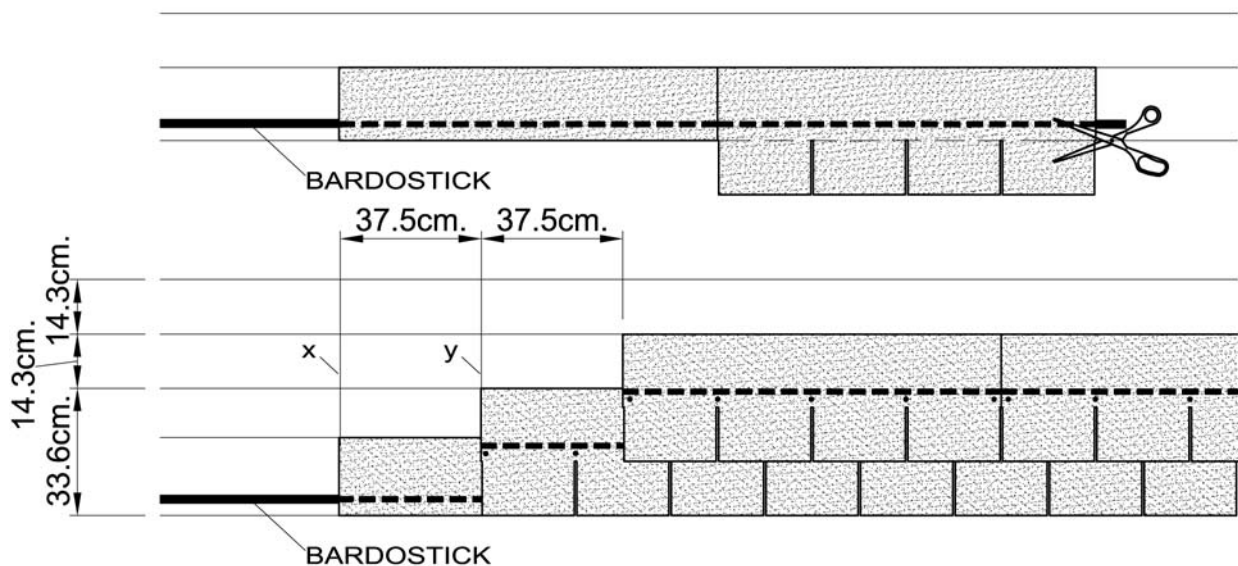
Minimum pitch for installation with nails is 30% (17 degrees). Pitches below this must first be waterproofed using a torch-on membrane and the subsequent torching-on of the shingles. Pitches between 30% (17 degrees) and 40% (24 degrees) with a length in excess of 10m must be waterproofed with torch-on membrane up to 7m from the eaves. In this area shingles must be torched-on. Shingles can be applied completely by nailing without a need for additional waterproofing if the pitch is more than 40% (24 degrees).

## INSTALLATION

A line of Bardostick mastic is put down near the eaves (see drawing). In order to create an under-layer for the first course, Bardoline sheets are cut and placed left and right of the z-line as indicated in the drawing. The first course is laid beginning at point A (y-line), followed by the second course again staggered 50cm (z-line). This pattern is carried on up the roof until it is completely covered.

For fixing with nails, galvanized, large headed Bardoline-nails of 2,5cm must be used. As shown in the drawing, 4 nails are to be used by each shingle. On vertical surfaces and roofs with pitches higher than 160% (60 degrees), 6 nails per shingle are necessary.

The self-adhesive stripes normally form a permanent and effective sealing to the tile strips and extra adhesives like Bardostick mastic are not required with the exception of ridges, eaves, valleys etc. After fixing, however, it has to be checked that bonding has not been affected by cold weather or side debris; if it has, a gentle application of heat is suggested to consolidate the joint between the layers. Do not install shingles if the outside temperature is below +5°C.

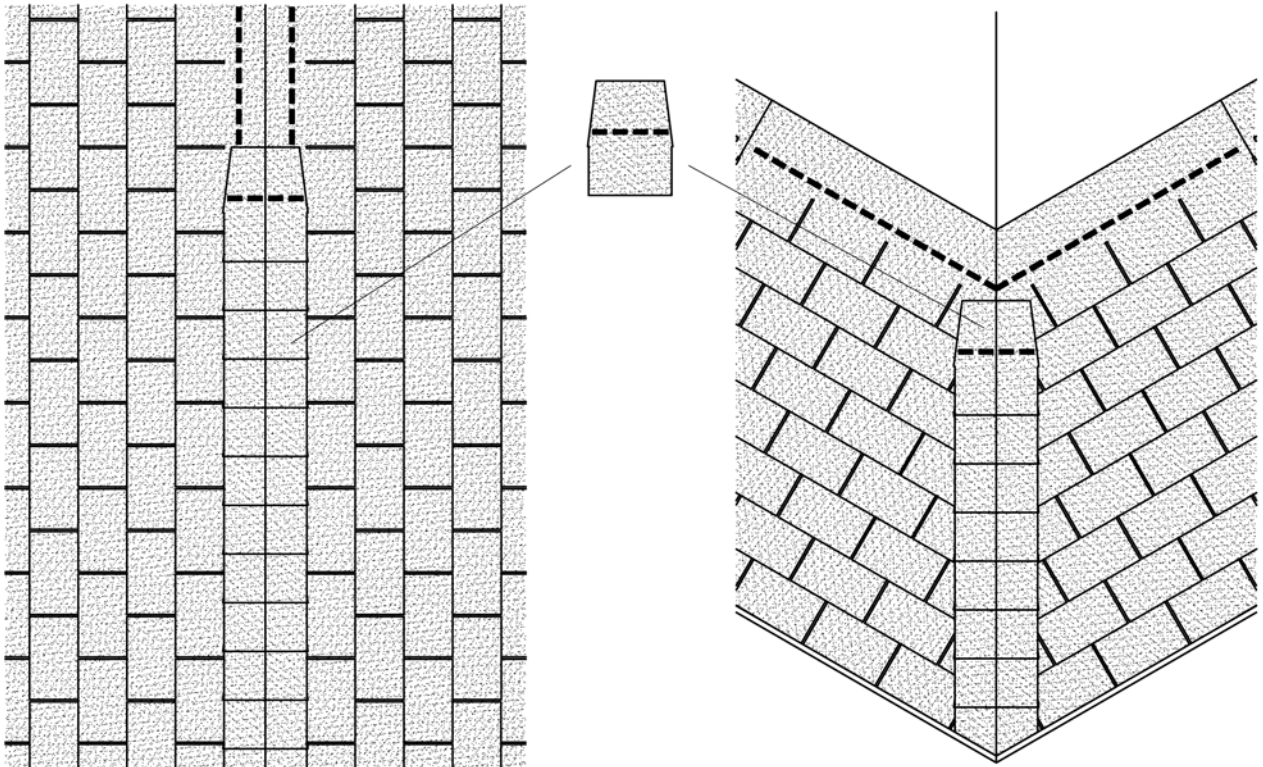
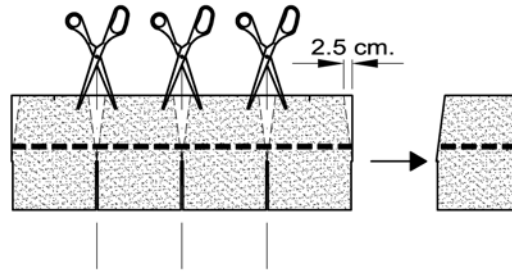


## VENTILATION

Bardoline roofs have to be ventilated according to the cold-deck roofing principles.

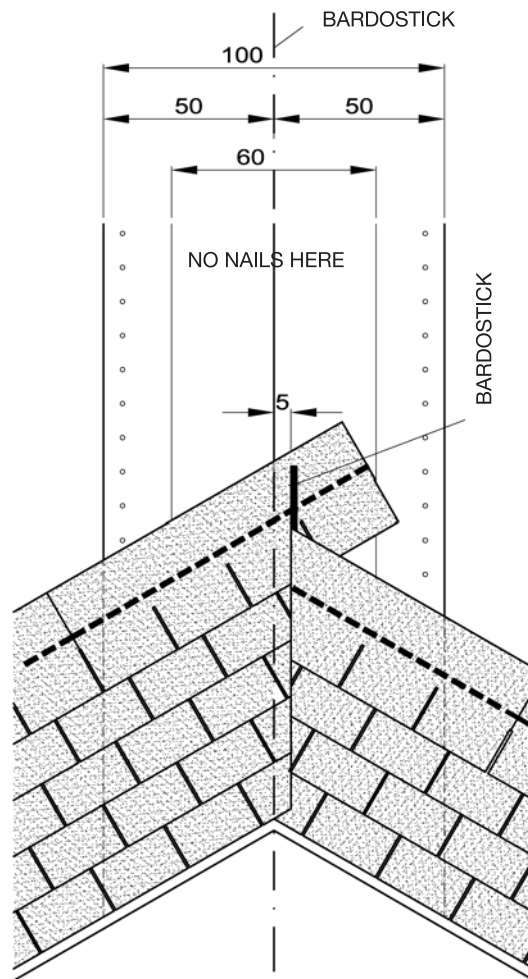
## RIDGES AND HIPS

Ridge and hip tiles are obtained by cutting the standard shingle into 3 pieces as indicated in the drawing. The pieces are then bent and fixed on the ridge by 2 nails each. The nails are held in the area that will be covered by the subsequent piece.



## VALLEYS

Valleys must be protected by a 100cm-wide torch on membrane. Shingles from one side of the valley have to extend to the other side at least 30cm from the center of the valley (see drawing). In the area protected by the membrane, shingles have to be torched-on and no nails have to be put within 30cm of the center line. Shingles from the opposite side are cut parallel to the center line of the valley to be sealed by a line of Bardostick.



## TRADITIONAL TYPE

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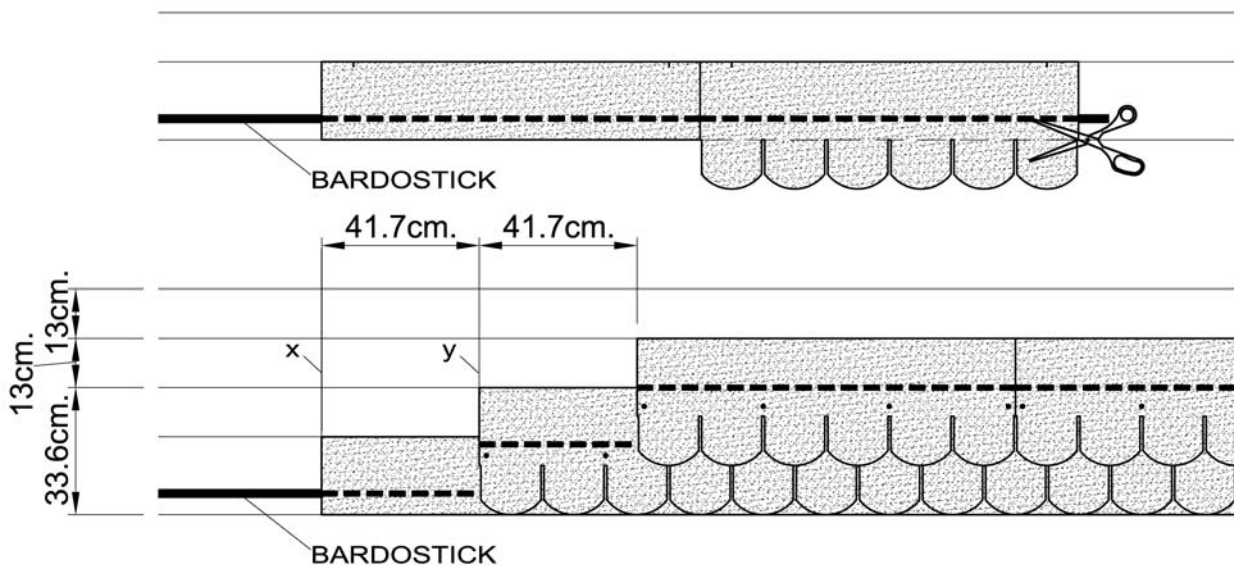
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### INSTALLATION

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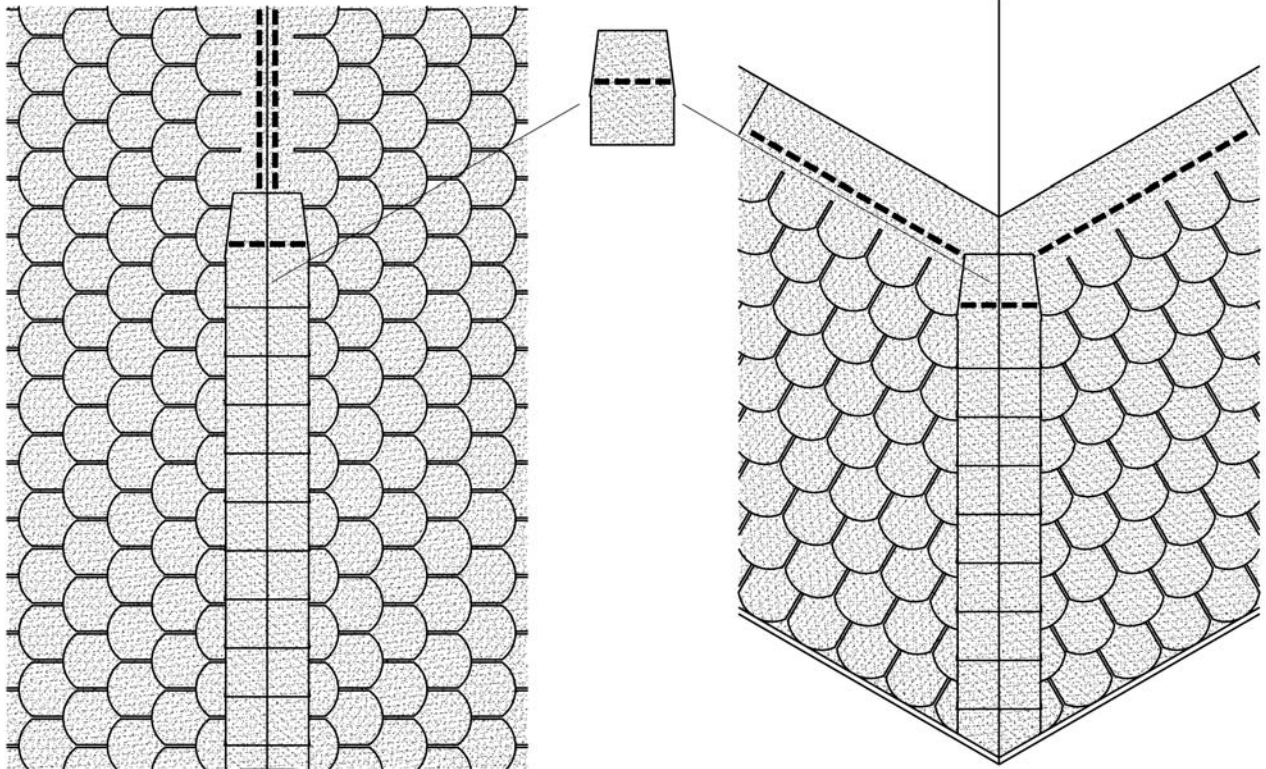
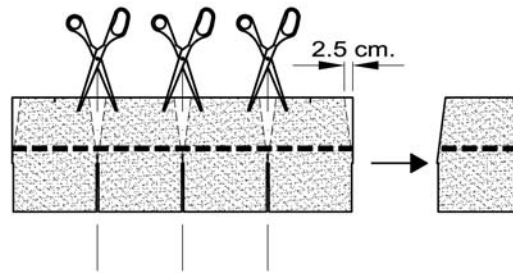


### VENTILATION

Bardoline roofs have to be ventilated according to the cold-deck roofing principles.

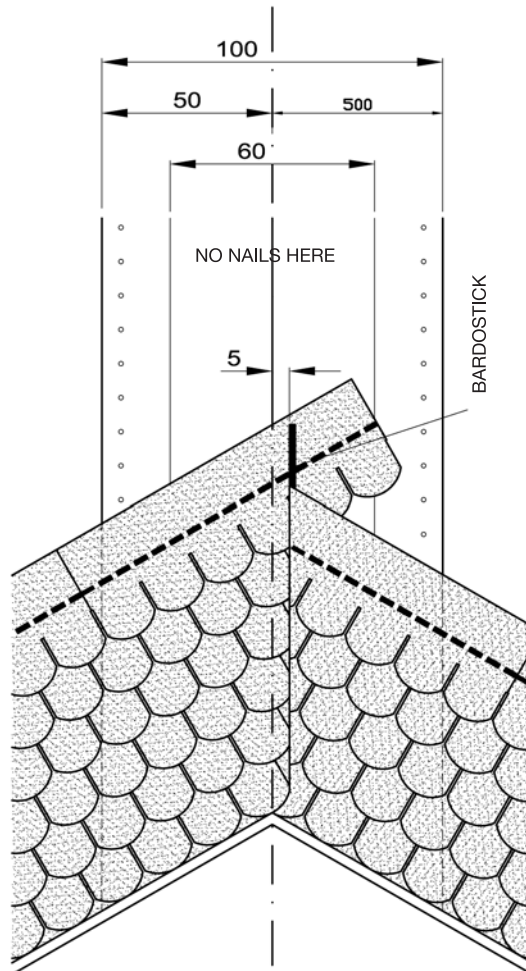
### RIDGES AND HIPS

Ridge and hip tiles are obtained by cutting the standard shingle into 3 pieces as indicated in the drawing. The pieces are then bent and fixed on the ridge by 2 nails each. The nails are held in the area that will be covered by the subsequent piece.



## VALLEYS

Valleys must be protected by a 100cm-wide torch-on membrane. Shingles from one side of the valley have to extend to the other side at least 30cm from the center of the valley (see drawing). In the area protected by the membrane, shingles have to be torched-on and no nails have to be put within 30cm of the center line. Shingles from the opposite side are cut parallel to the center line of the valley to be sealed by a line of Bardostick.



## S TRADITIONAL TYPE

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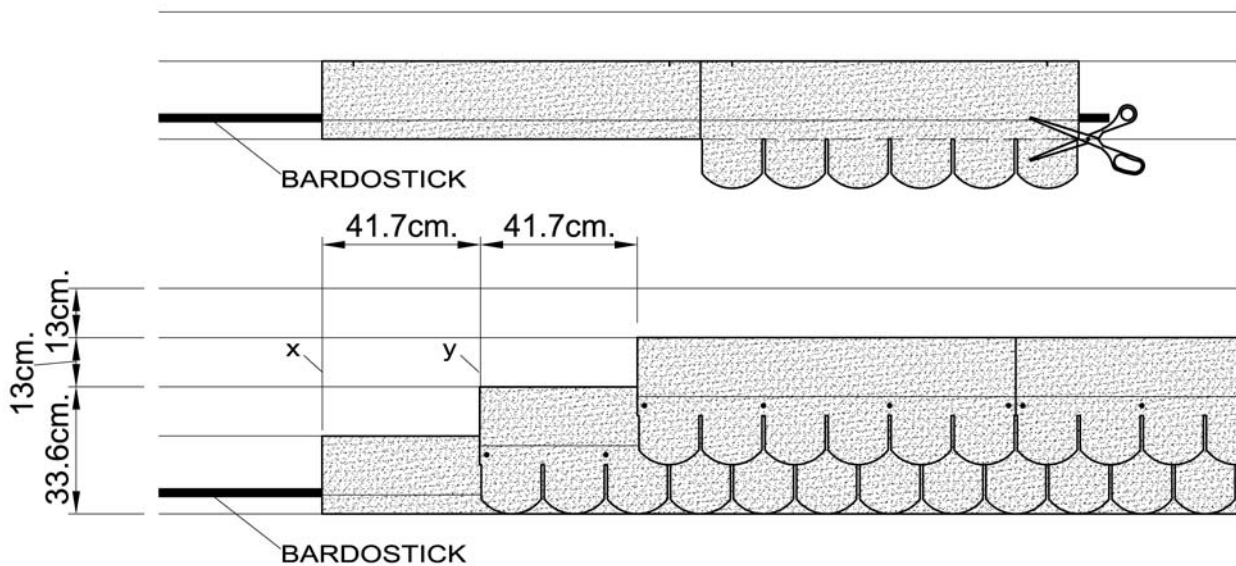
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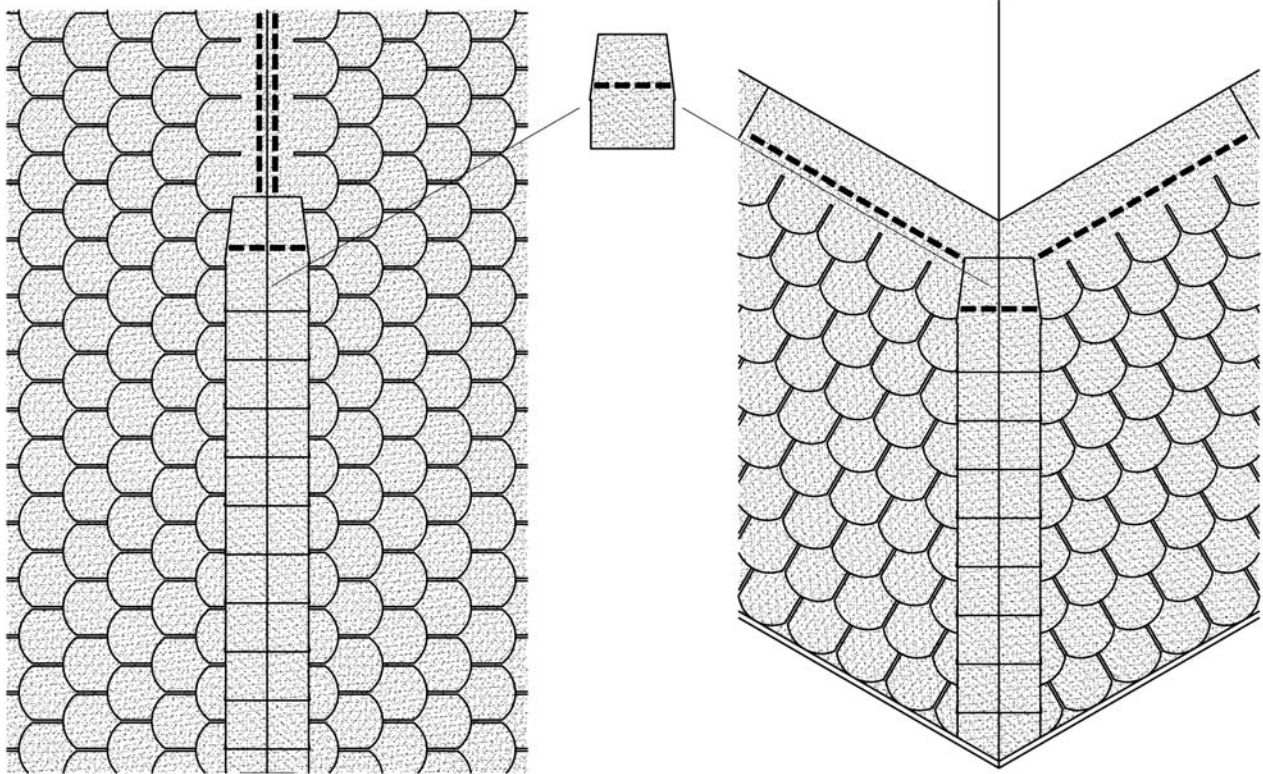
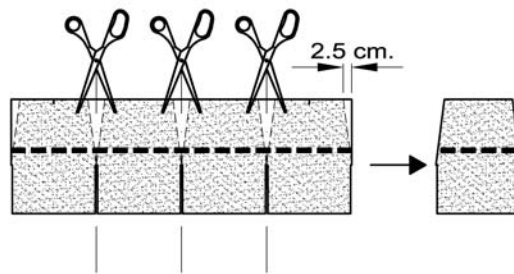


## VENTILATION

Bardoline roofs have to be ventilated according to the cold-deck roofing principles.

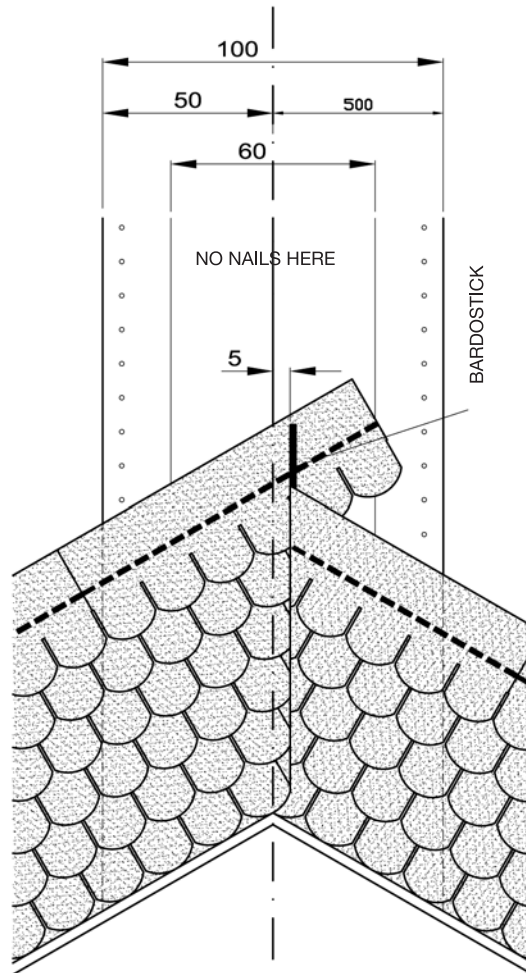
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**VALLEYS**

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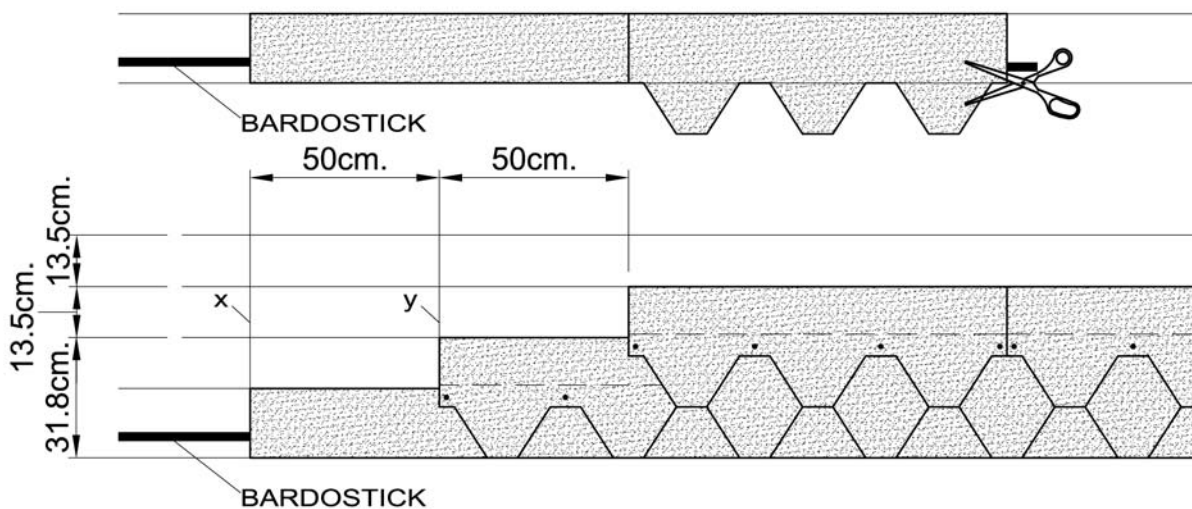
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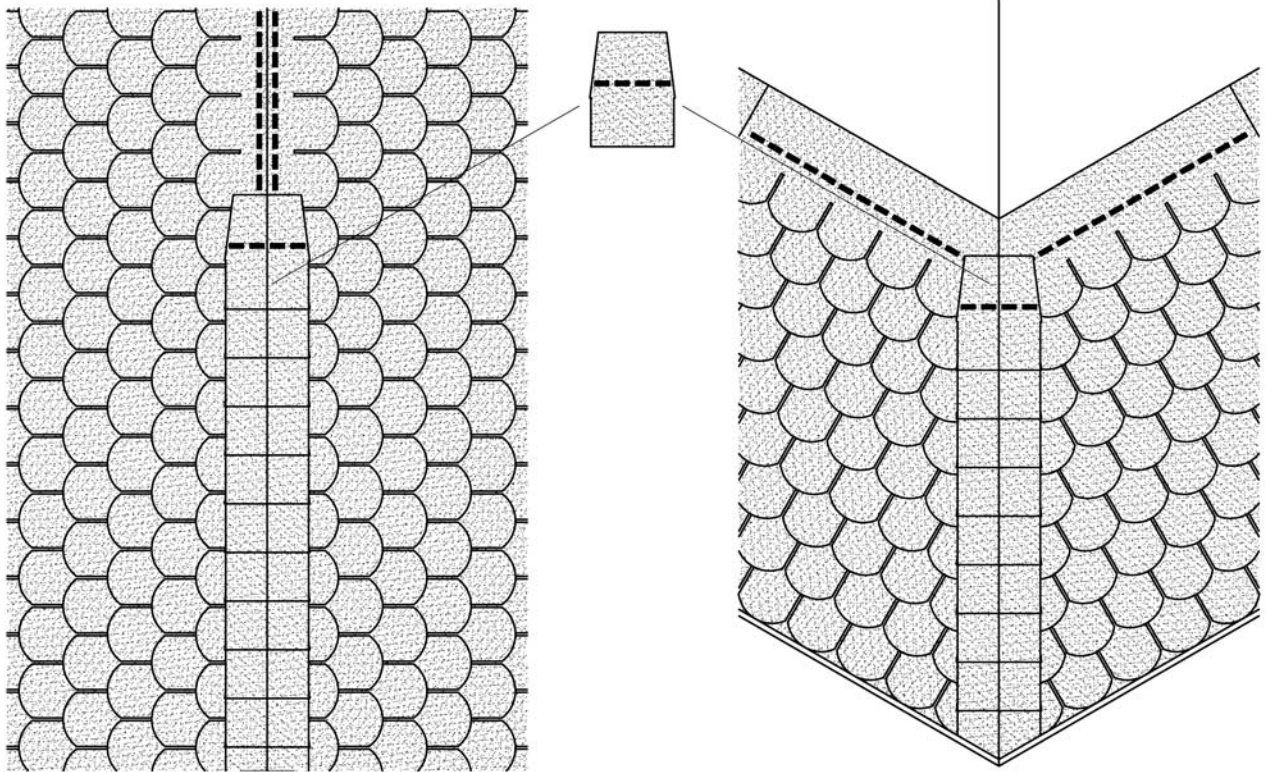
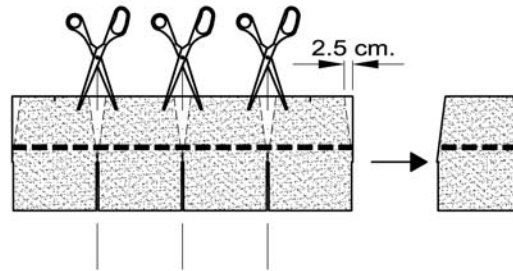


## VENTILATION

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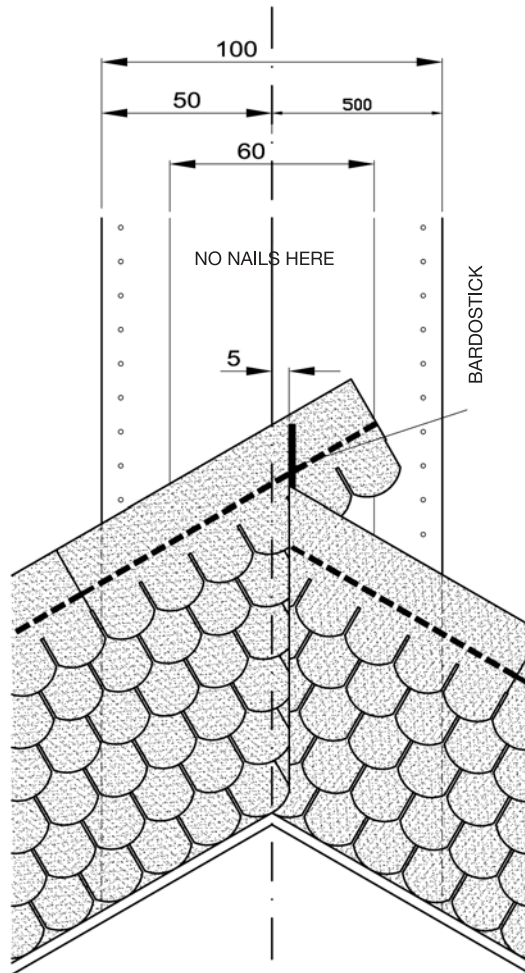
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## CAMBRIDGE TYPE

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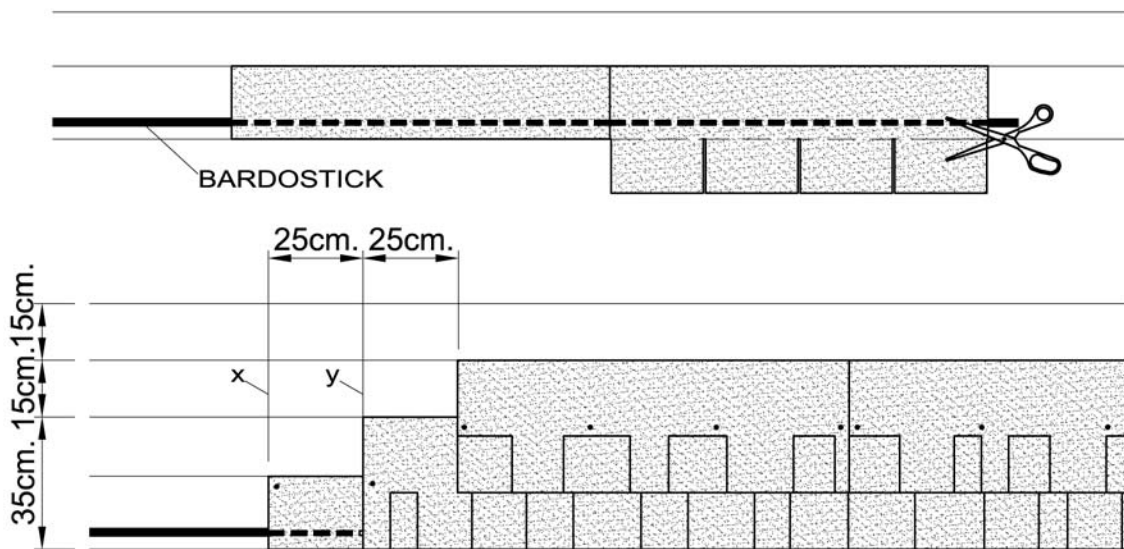
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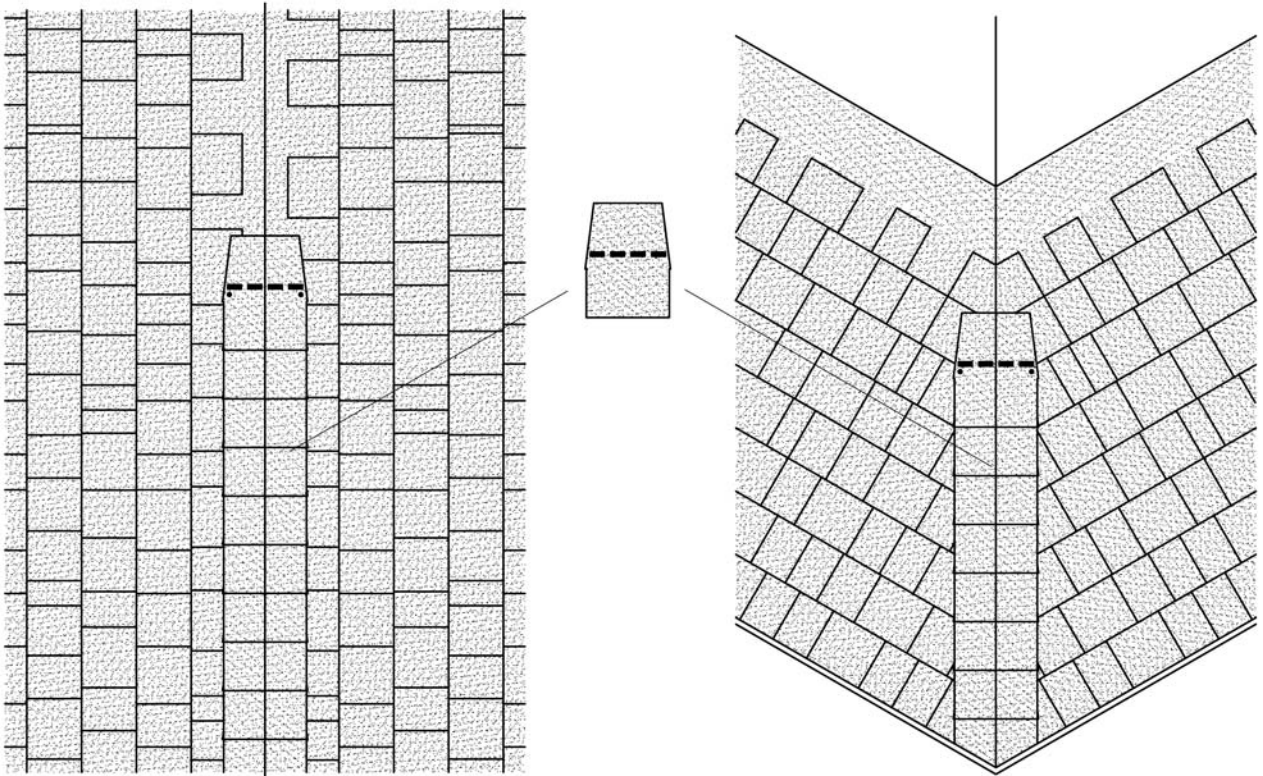
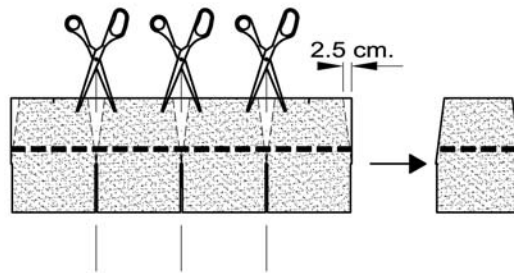


## VENTILATION

Bardoline roofs have to be ventilated according to the cold-deck roofing principles.

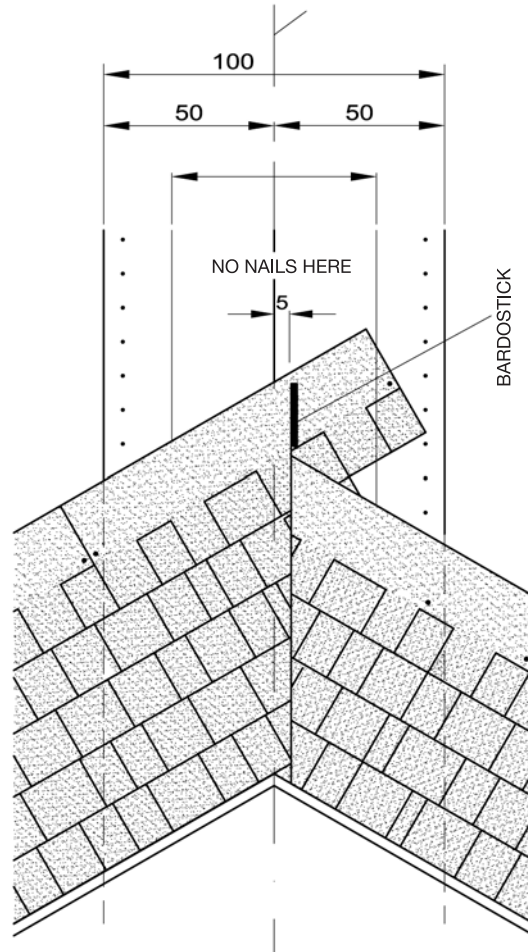
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## VALLEYS

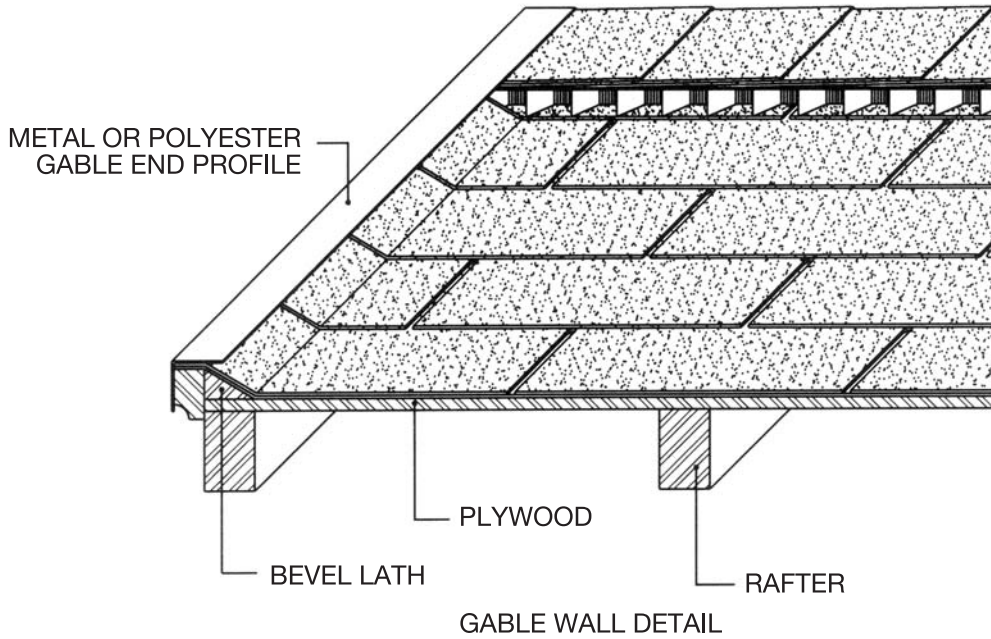
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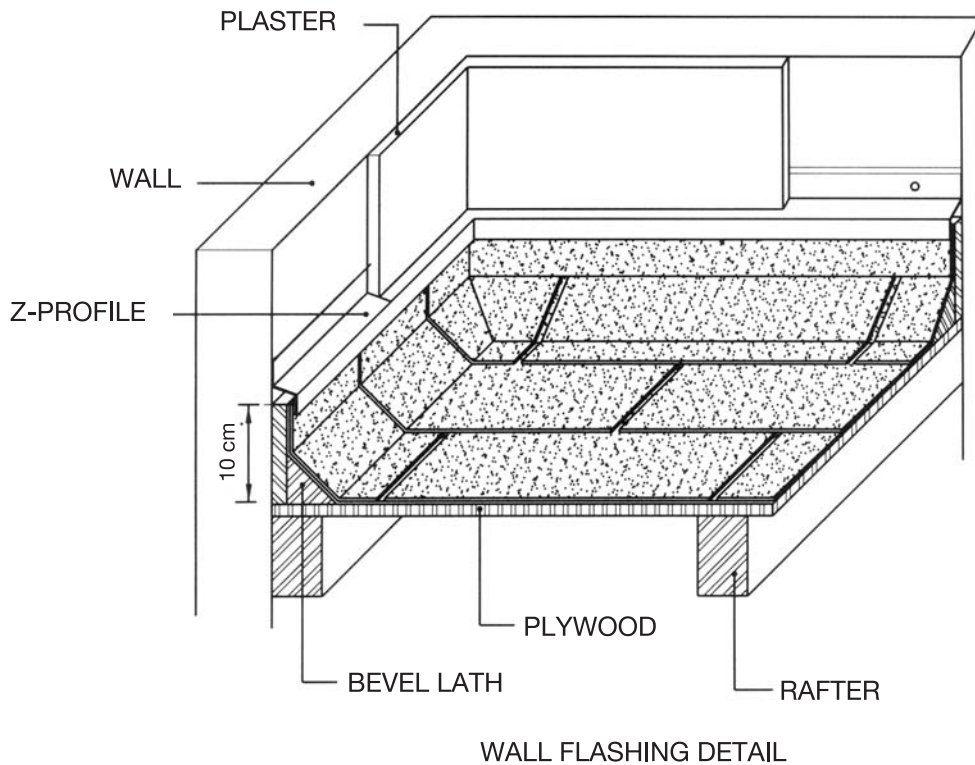
### GABLE WALL END

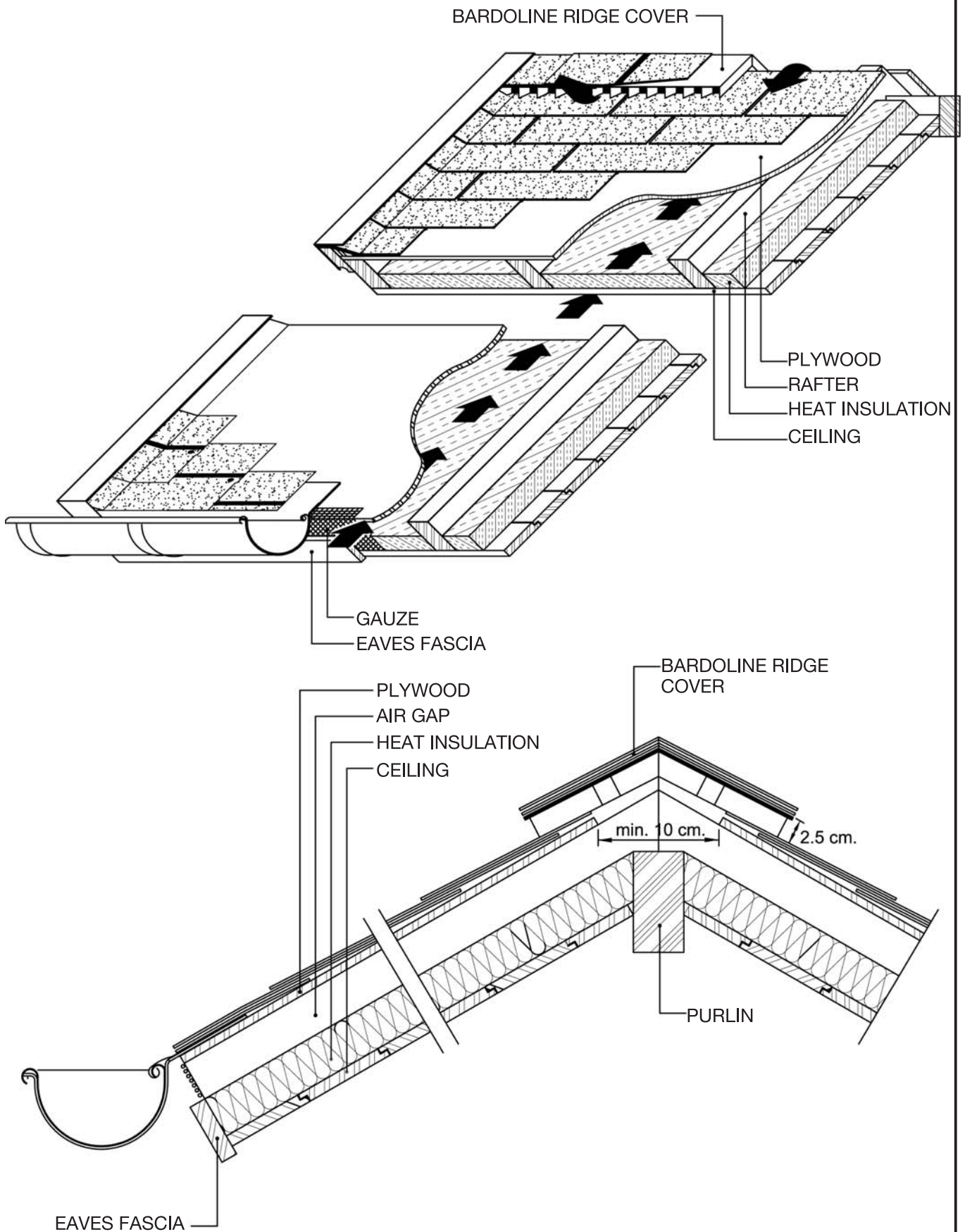
At the gable wall end, the flow of rainwater is directed by raising the Bardolines with the use of a triangle lath nailed to the roof end. The roof is finished with either a metal or polyester profile or with a timber slab board (Figure13).

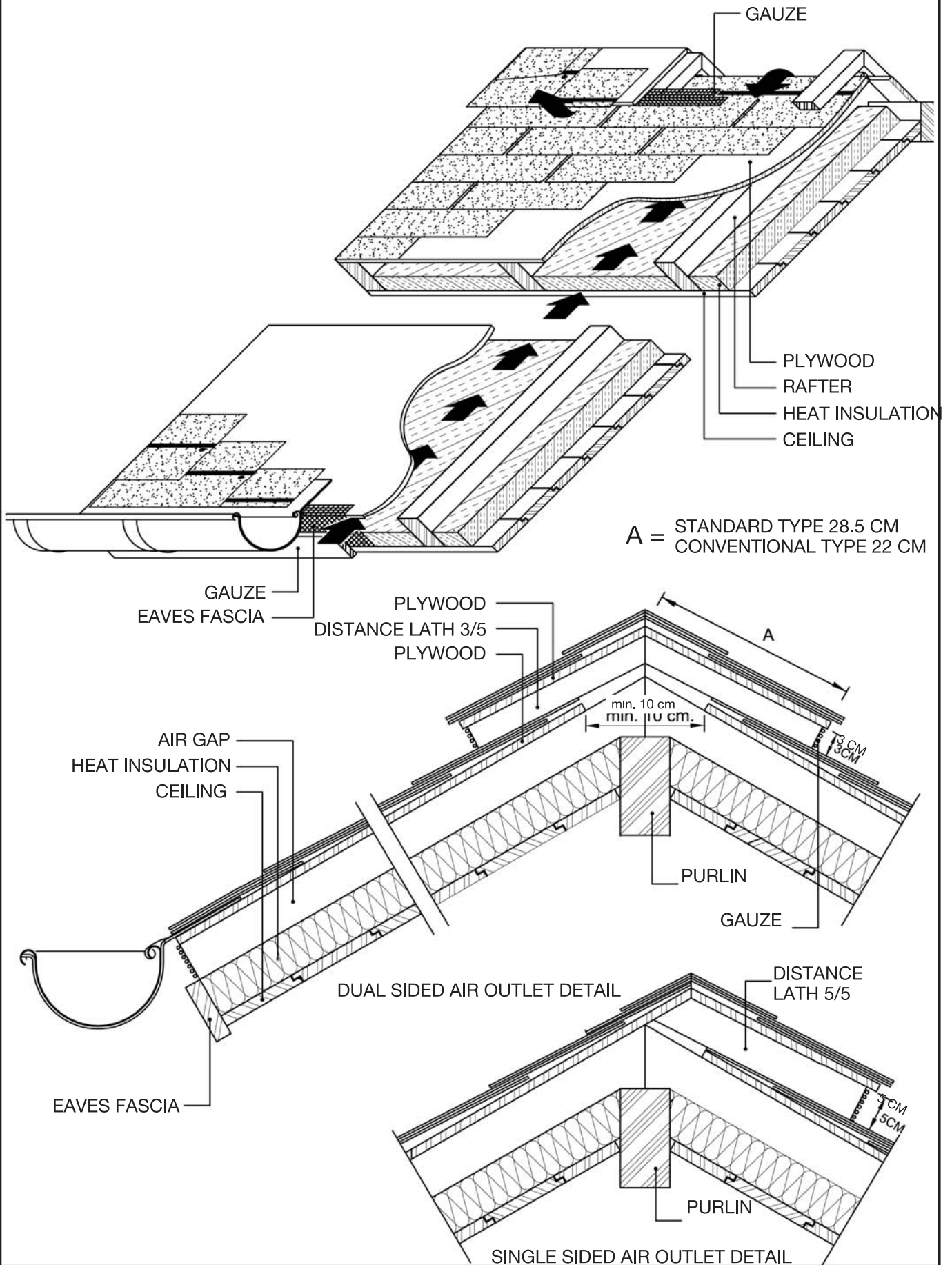


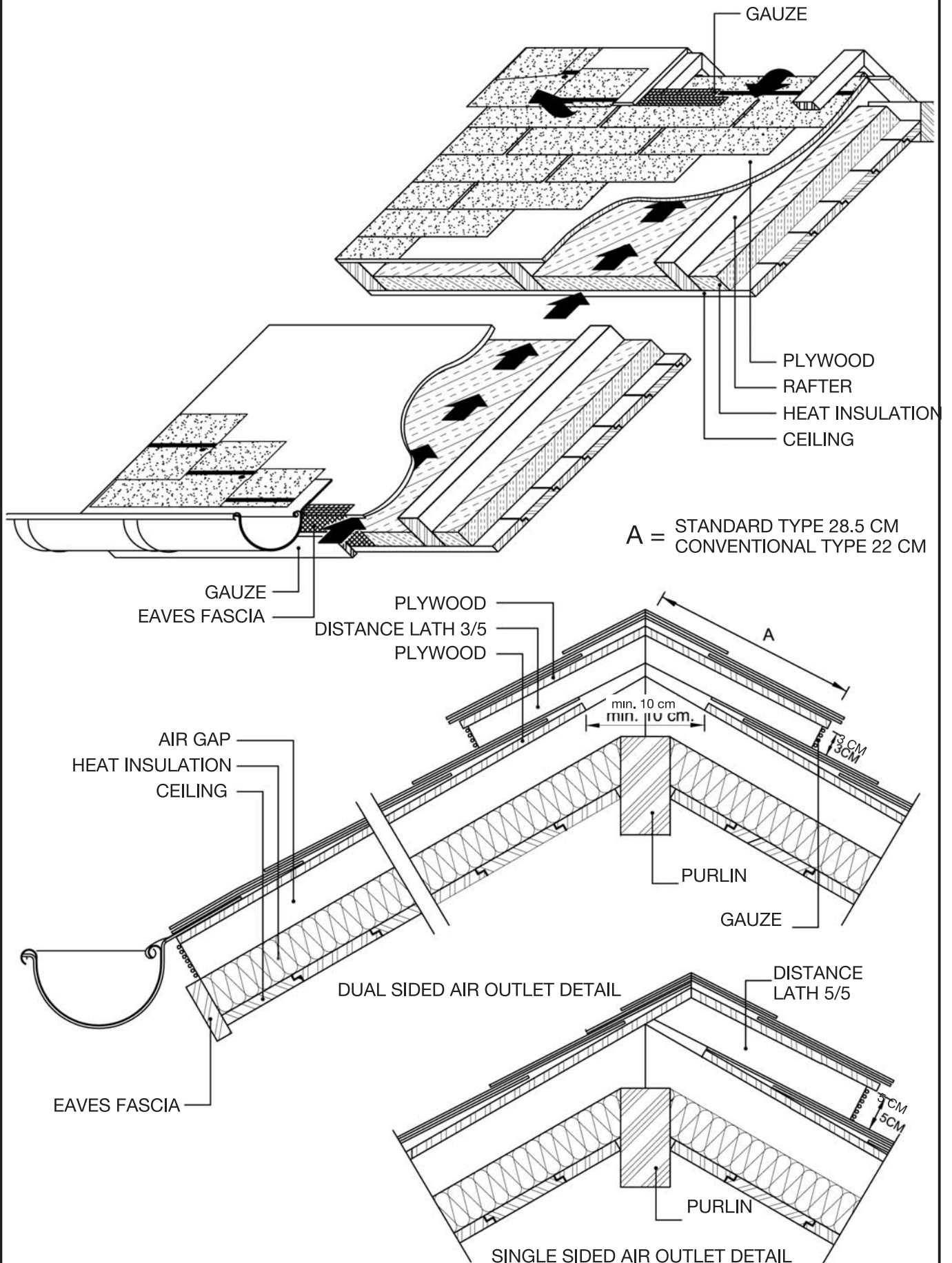
### WALL FLASHING

The bardolines are raised at least 10 cm from the roof plane with the help of the corner lath, also at the wall flashing. When passing to the plaster layer, either a metal or polyester Z profile is used (Figure14).





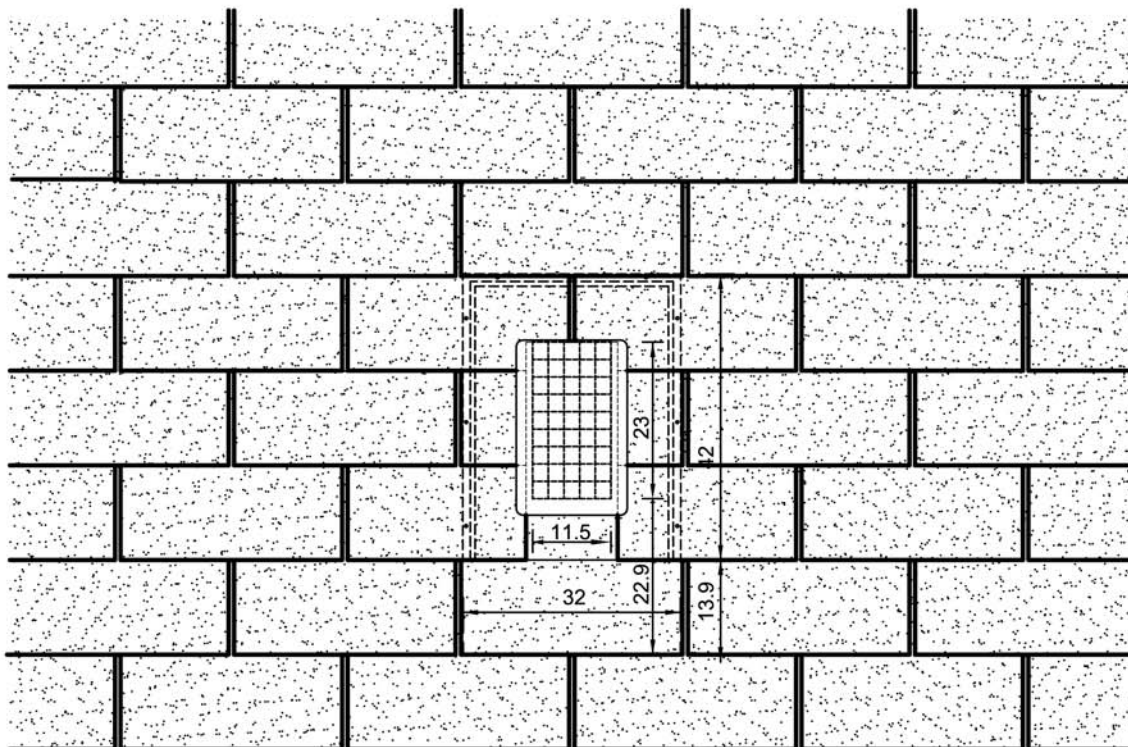
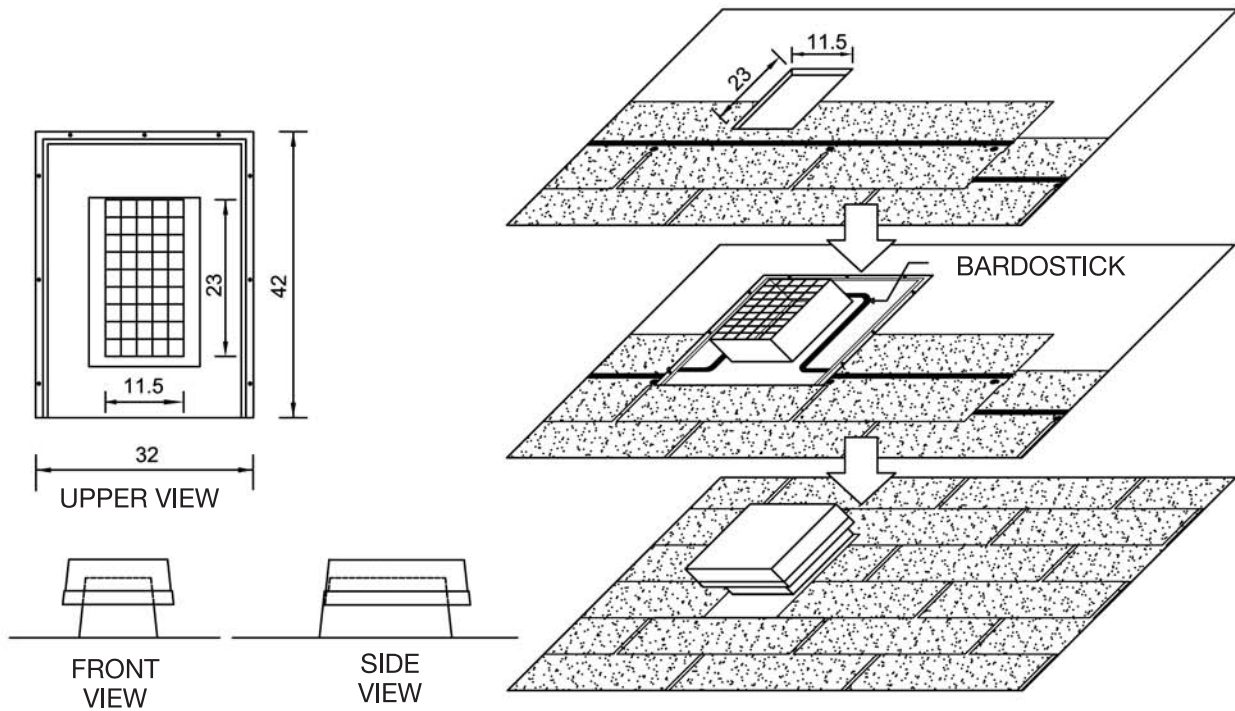




# BARDOLINE<sup>®</sup>

SPECIAL VENTILATION ELEMENT

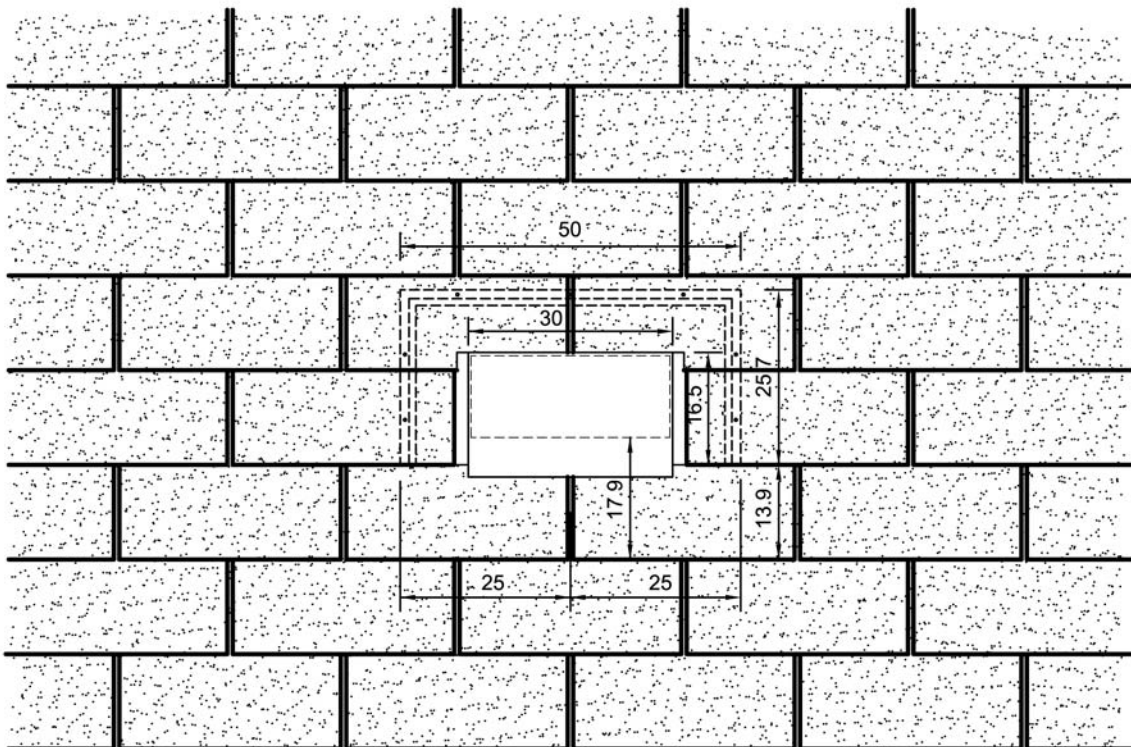
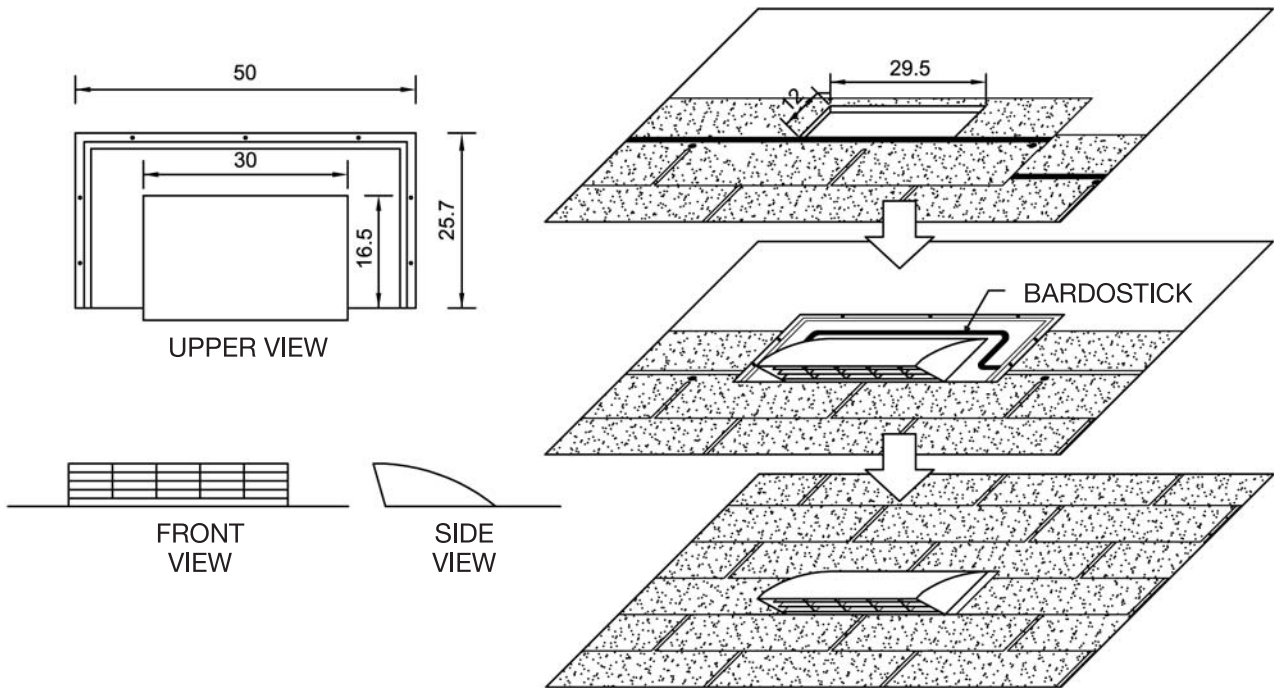
# M304

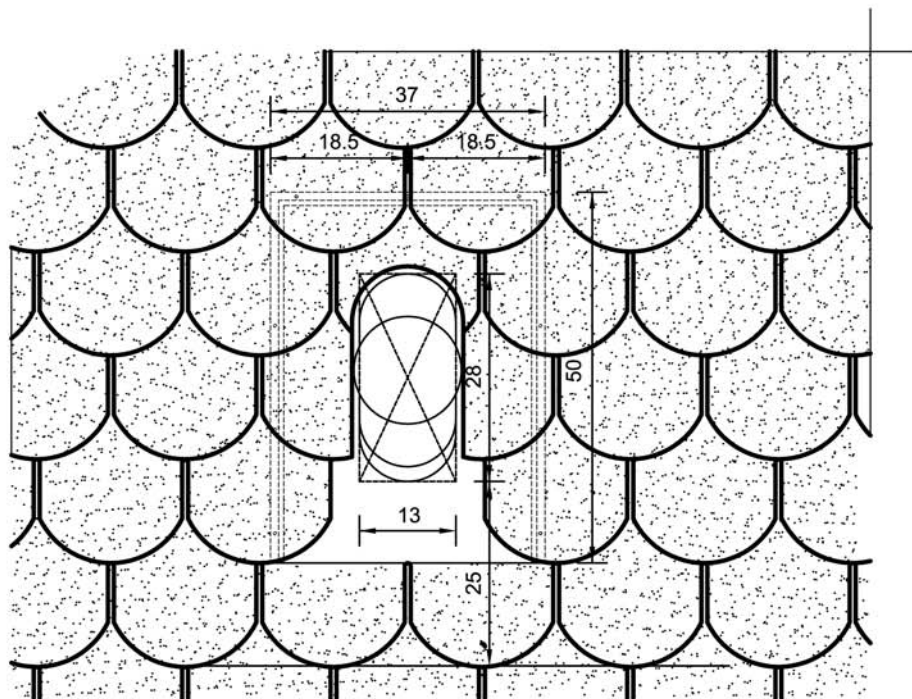
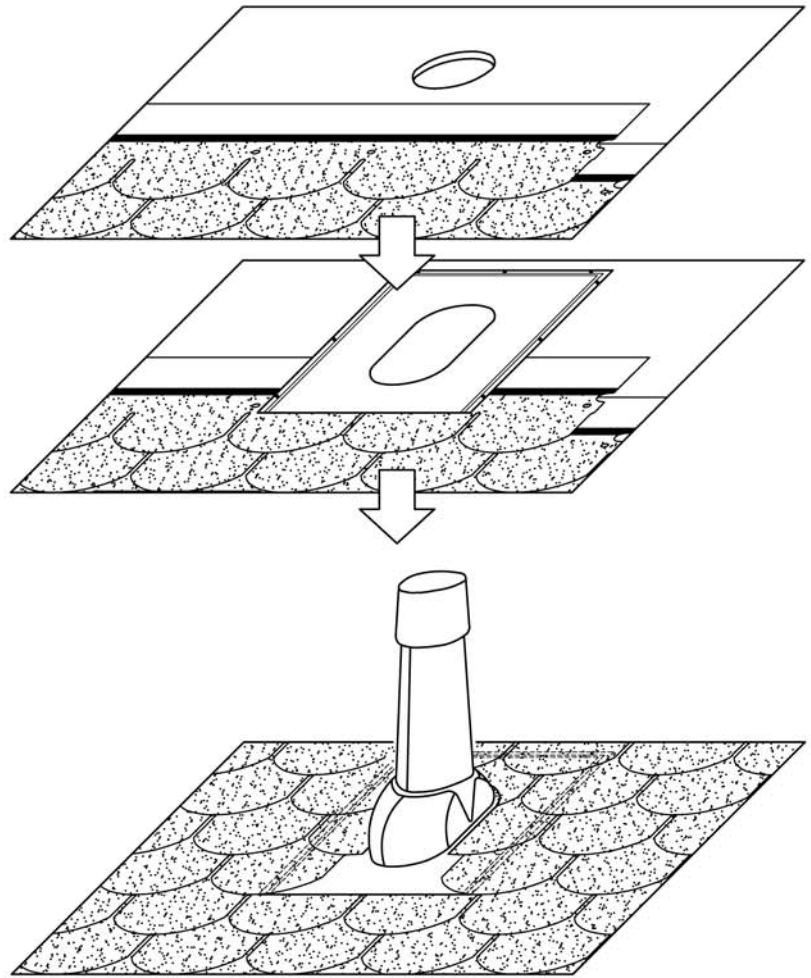
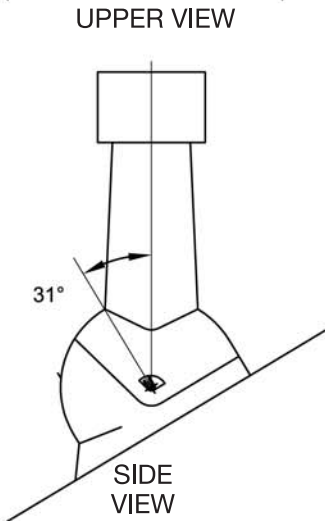
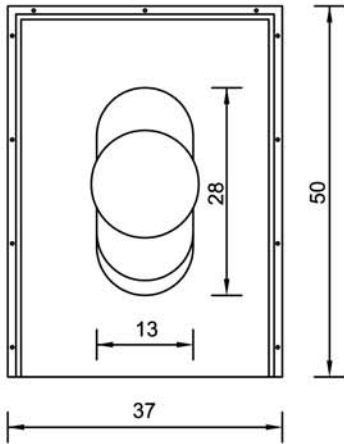


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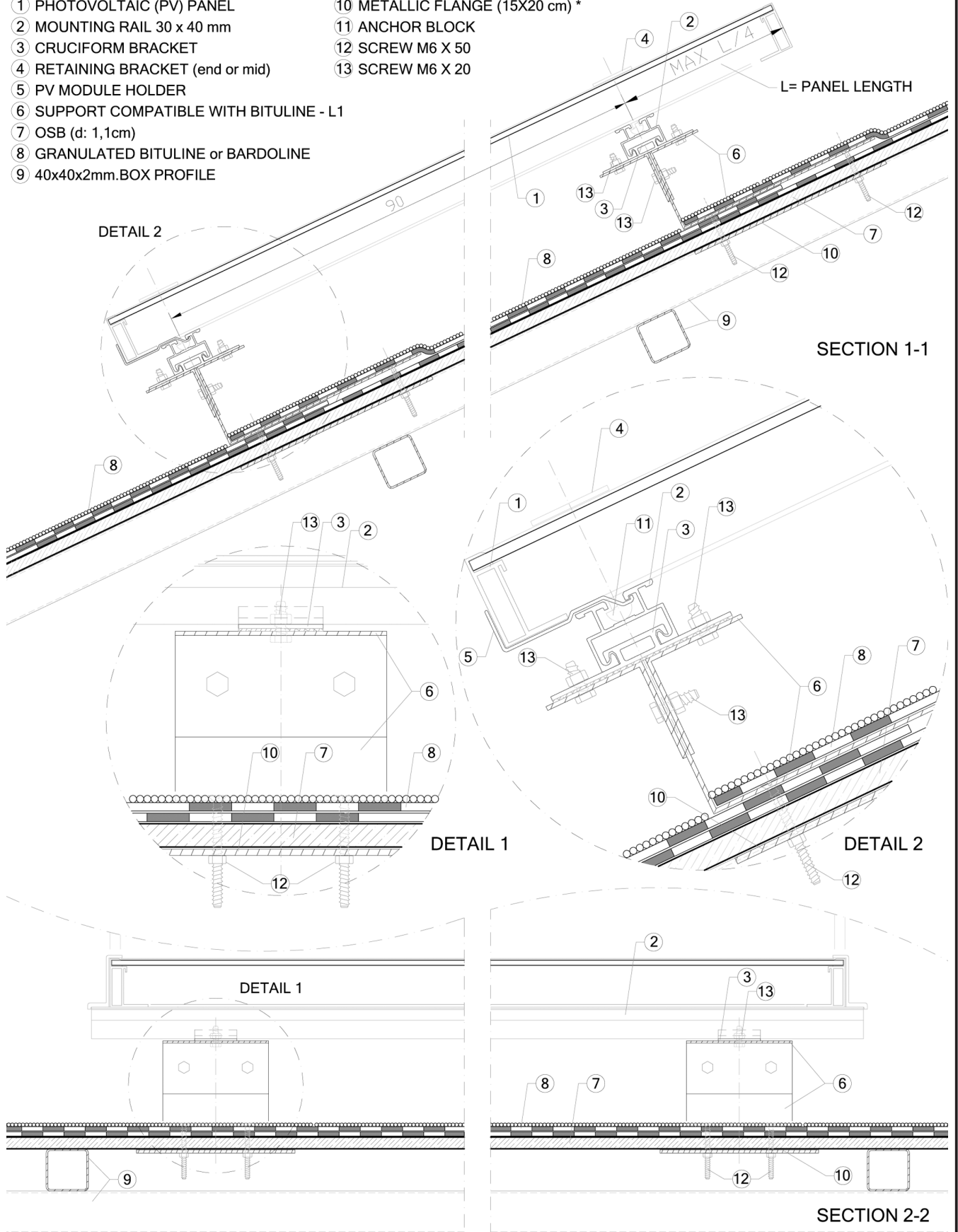
Head Office: Onduline Avrasya A.Ş. Değirmen Sokak Nida Kule No 12 Kat 8 34742 Kozyatağı - Kadıköy/ İstanbul / TURKEY  
Tel : +90 216 384 16 00 pbx. Fax : +90 216 384 16 10  
www.onduline.com.tr export@onduline.com.tr

# BARDOLINE<sup>®</sup> STANDARD VENTILATION ELEMENT M305





- |   |                                |
|---|--------------------------------|
| ① PHOTOVOLTAIC (PV) PANEL               | ⑩ METALLIC FLANGE (15X20 cm) * |
| ② MOUNTING RAIL 30 x 40 mm              | ⑪ ANCHOR BLOCK                 |
| ③ CRUCIFORM BRACKET                     | ⑫ SCREW M6 X 50                |
| ④ RETAINING BRACKET (end or mid)        | ⑬ SCREW M6 X 20                |
| ⑤ PV MODULE HOLDER                      |                                |
| ⑥ SUPPORT COMPATIBLE WITH BITULINE - L1 |                                |
| ⑦ OSB (d: 1,1cm)                        |                                |
| ⑧ GRANULATED BITULINE or BARDOLINE      |                                |
| ⑨ 40x40x2mm.BOX PROFILE                 |                                |



\*The details of the brochure cover installations made on OSB. All supports can be fixed also to other substructures such as concrete slabs, timber or steel battens or purlins by the use of proper connection elements.