

SPECIFICATIONS AND INSTALLATION GUIDE

Solaris™ VDiamond Terracotta

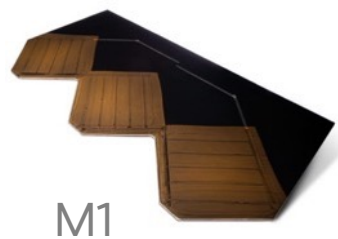
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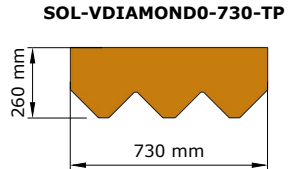
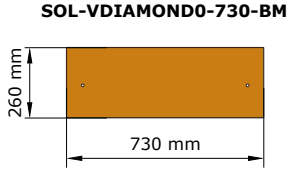
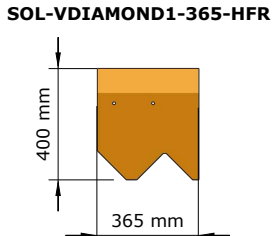
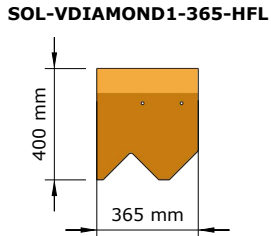
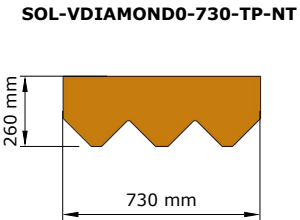
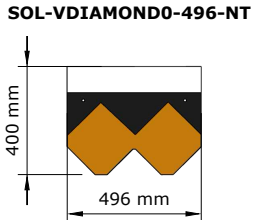
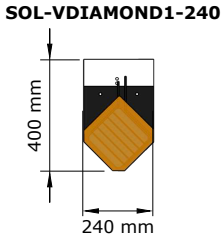
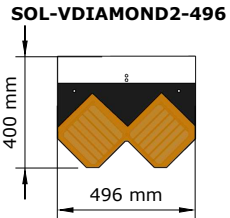
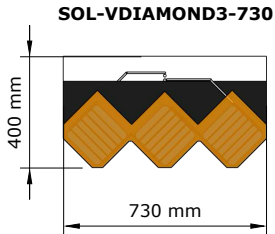
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OVERVIEW OF THE SOLARISTM VDIAMOND TERRACOTTA SOLAR TILE



Color tile may vary

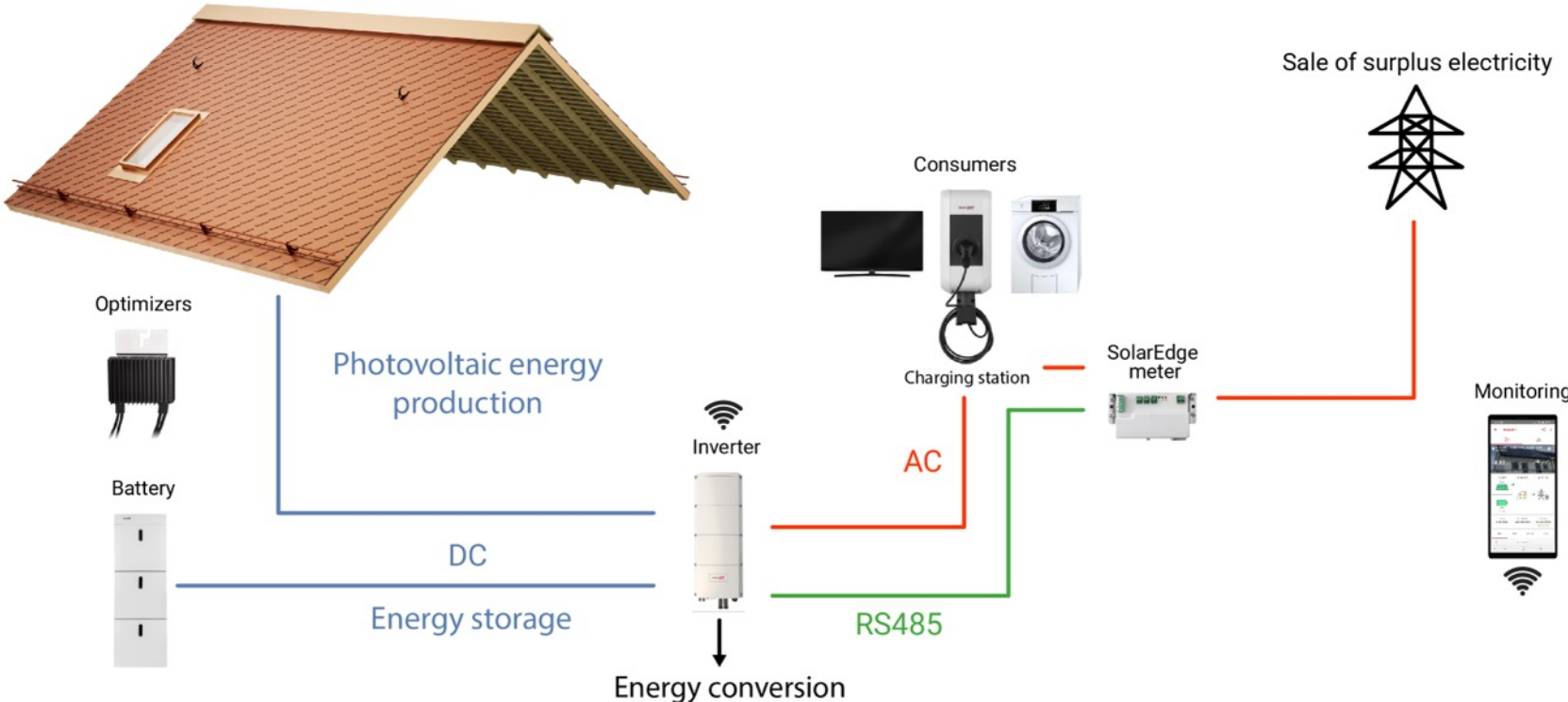
CATALOGUE OF TILES



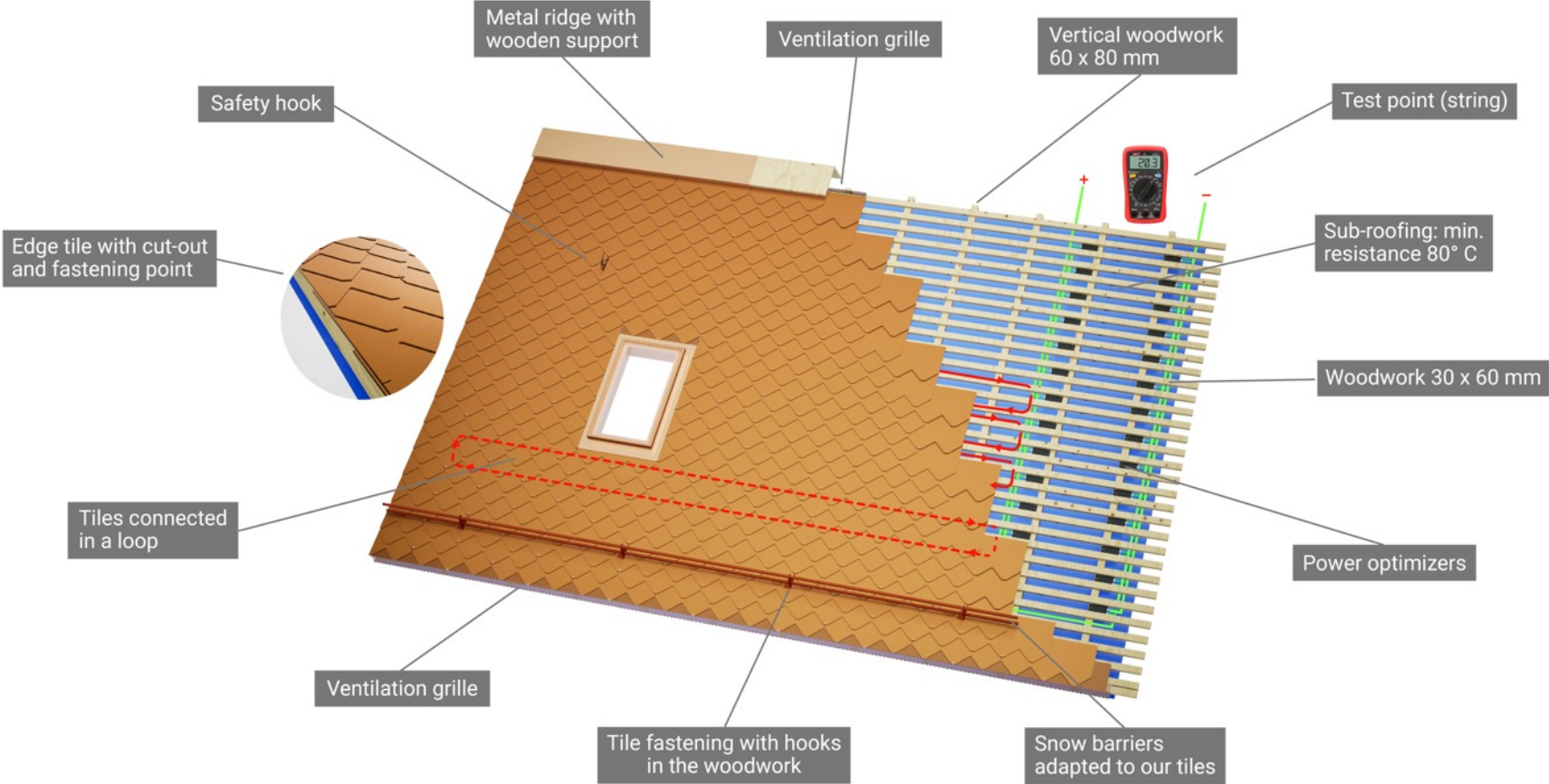
PHYSICAL SPECIFICATIONS

	Solaris™ VDiamond Terracotta
Appearance	Terracotta-toned colour
Colors	A1 (terracotta), M1 (leans towards brown)
Tile size (W x H mm)	730 mm x 400 mm
Visible surface area (W x H mm)	730 x 140 mm
Thickness	7 mm
Number of cells per tile	3
Number of tiles per m2	9,65
Weight per unit	4,75 kg
Weight per m2	45,85 kg
Type of solar cell	Monocrystallin PERC 5BB
Type of connector	MC4 type IP65
Type of glass	Tempered glass with an anti-reflective coating

OUR PHOTOVOLTAIC SOLUTION



PHOTOVOLTAIC SYSTEM ARCHITECTURE



ROOF STRUCTURE SPECIFICATIONS

The integrated solar roof solution requires a framework identical to that used for fibre cement tiles. The solar tiles are installed directly on the wooden horizontal battens, which are themselves fixed to the vertical battens as standard. See details below:

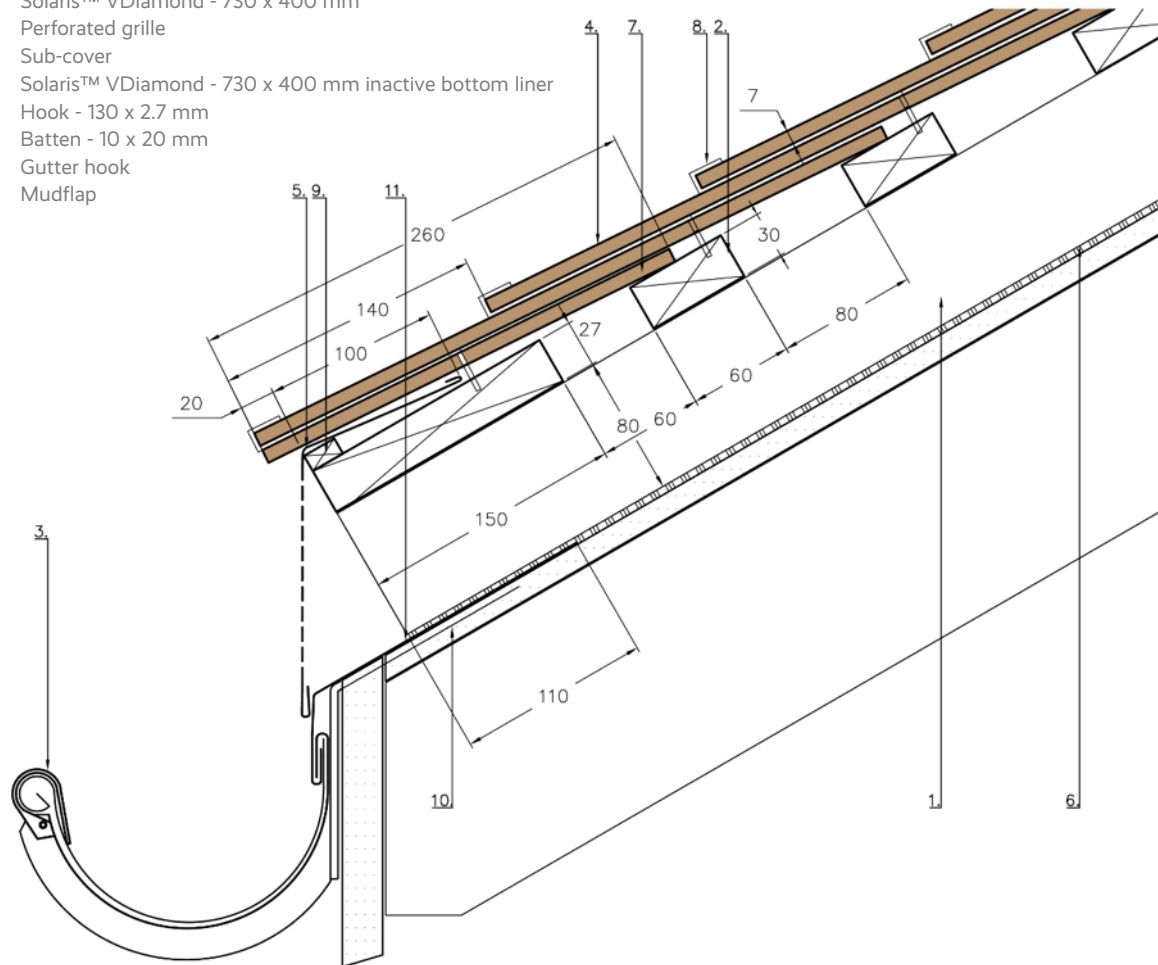
Slope	Minimum 20° and maximum 90°. If the pitch is less than 20°, a waterproof underlay must be installed (special requirement).
Horizontal Roofing Battens	30 mm x 60 mm (27 mm x 60 mm is also acceptable)
Tile exposure (distance between the battens)	Minimum 140 mm, maximum 145 mm
Vertical Counter-Battens	80 mm high x 60 mm wide
Sub-roofing	The type of underlay selected must comply with standard SIA 232/1 and the guidelines of the Swiss Building Envelope Association. When using tiles from the Solaris range, an underlay designed for high stress and resistant to temperatures of 80 degrees is required as a minimum.
Woodwork Flatness Tolerance	Any horizontal or vertical unevenness in the surface to be covered, i.e. the battens, must not exceed 4 mm per metre.
Ventilation	Air inlet and outlet openings: the air gaps must be fitted with air inlet and outlet openings, the clear passage of which must be at least 50% of the required cross-sectional height of the counter-battens. It is necessary to ventilate the entire surface area covered by Freesuns modules, including the valley and ridge areas. An insect screen reduces the air intake by a further 50%; a ventilation cross-section of 80 mm is strongly recommended.
Tinsmithing material	Standard – no special requests.
Ridge Capping	See drawings
Ridge	See the technical solutions proposed (minimum 40 mm gap for ventilation).
Snow bars and hooks	Glaromat FS24 'Solaire' snow guard
Safety hooks	Glaromat SIHA MAX BS and Glaro SL BS models, in accordance with EN 795

*Freesuns accepts no liability in the event of non-compliance with SIA standards for pitched roofs and the technical specifications specific to our products mentioned here.

1. GUTTERS

1.1. DETAIL OF GUTTER WITH TINSMITHING

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Gutter
4. Solaris™ VDiamond - 730 x 400 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ VDiamond - 730 x 400 mm inactive bottom liner
8. Hook - 130 x 2.7 mm
9. Batten - 10 x 20 mm
10. Gutter hook
11. Mudflap



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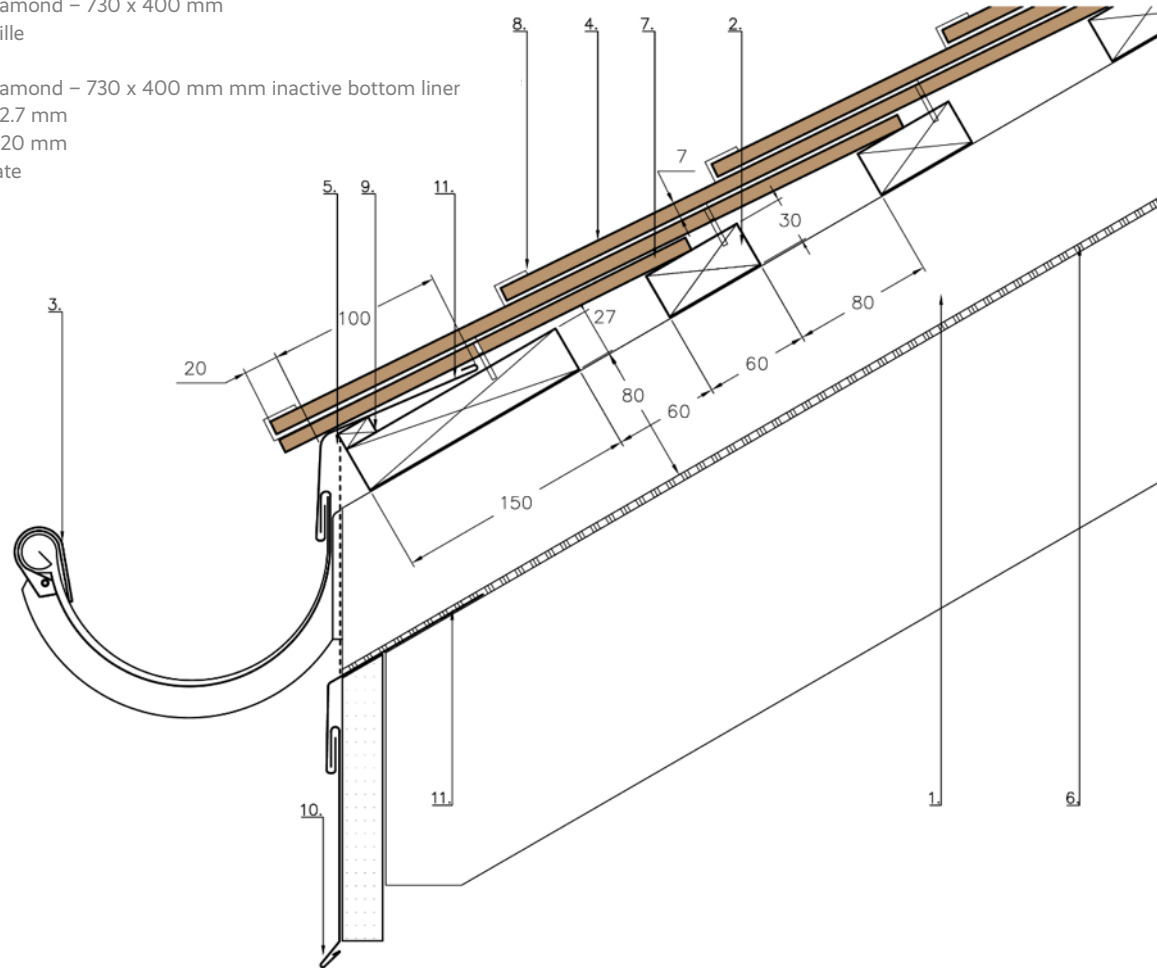
DESCRIPTION

Detail of gutter
with tinsmithing
VDiamond

DATE
15.02.2024

1.2. DETAIL OF GUTTER WITH CONCEALED VENTILATION

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Gutter
4. Solaris™ VDiamond – 730 x 400 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ VDiamond – 730 x 400 mm mm inactive bottom liner
8. Hook - 130 x 2.7 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap



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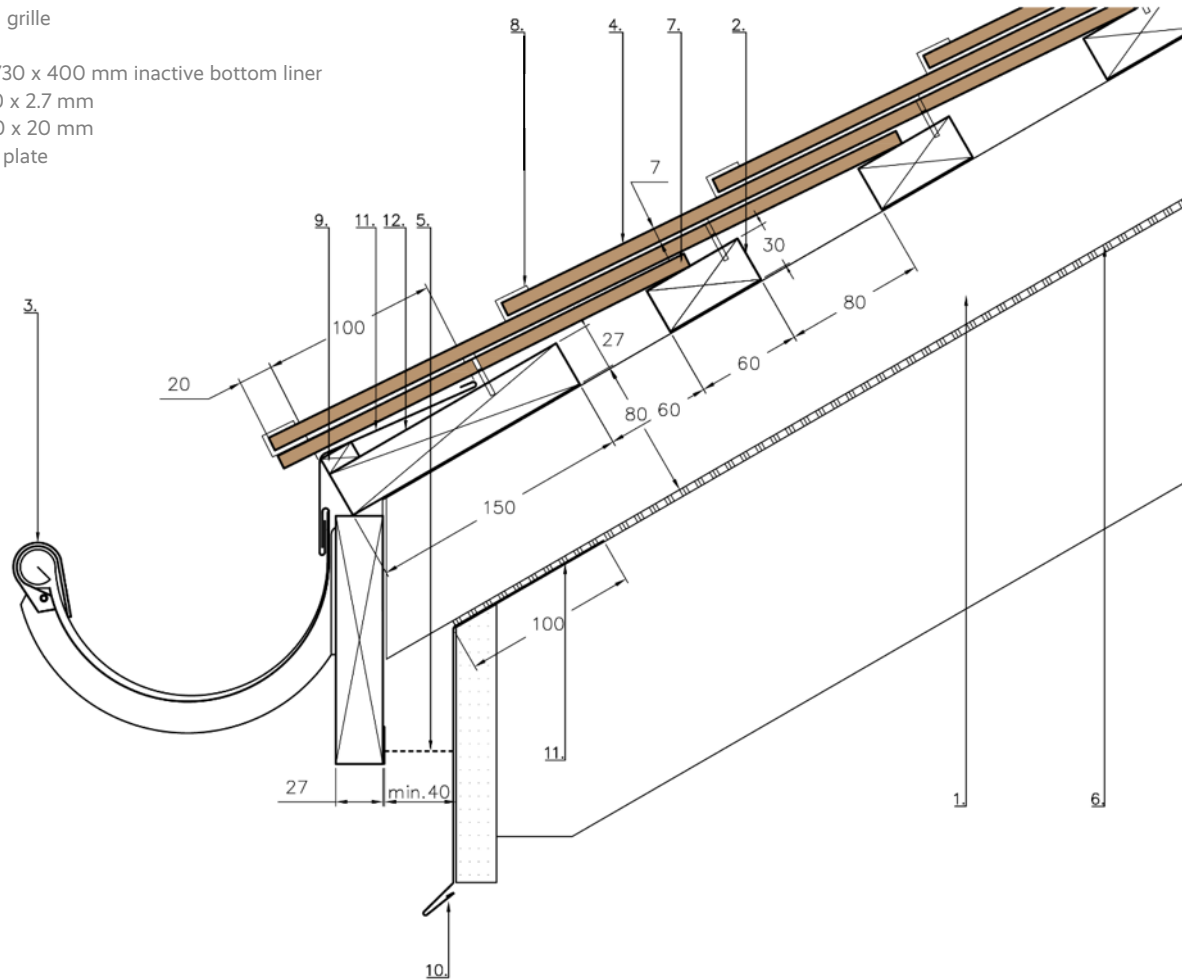
DESCRIPTION

Detail of gutter with
concealed ventilation
VDiamond

DATE
15.02.2024

1.3. DETAIL OF GUTTER WITH DOUBLE FASCIA

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Gutter
4. Solaris™ VDiamond – 730 x 400 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ 730 x 400 mm inactive bottom liner
8. Hook - 130 x 2.7 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap
12. Plate



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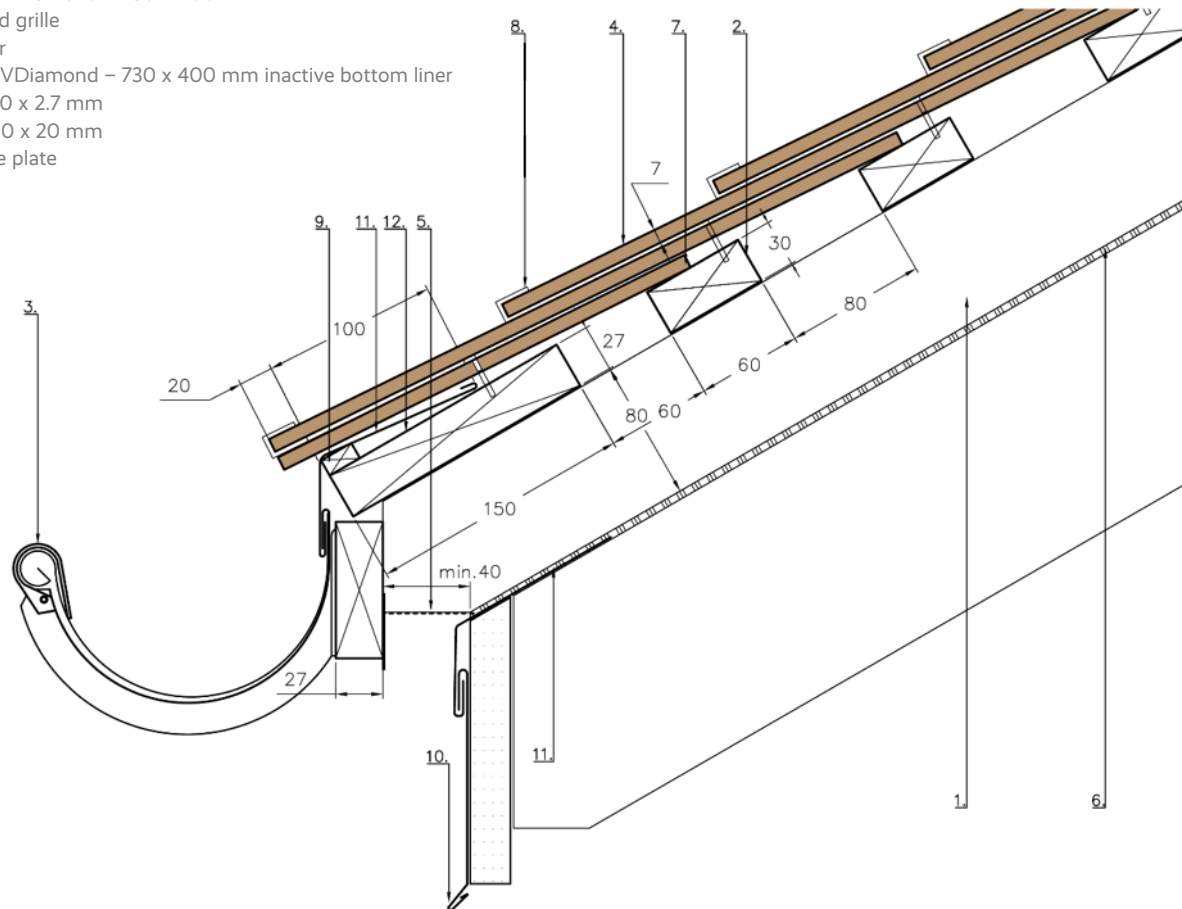
DESCRIPTION

Detail of gutter with
double fascia
VDiamond

DATE
15.02.2024

1.4. DETAIL OF HIGH GUTTER WITH DOUBLE FASCIA PLATE

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Gutter
4. Solaris™ VDiamond – 730 x 400 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ VDiamond – 730 x 400 mm inactive bottom liner
8. Hook - 130 x 2.7 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap
12. Plate



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DESCRIPTION

Detail of high gutter with
double fascia plate
VDiamond

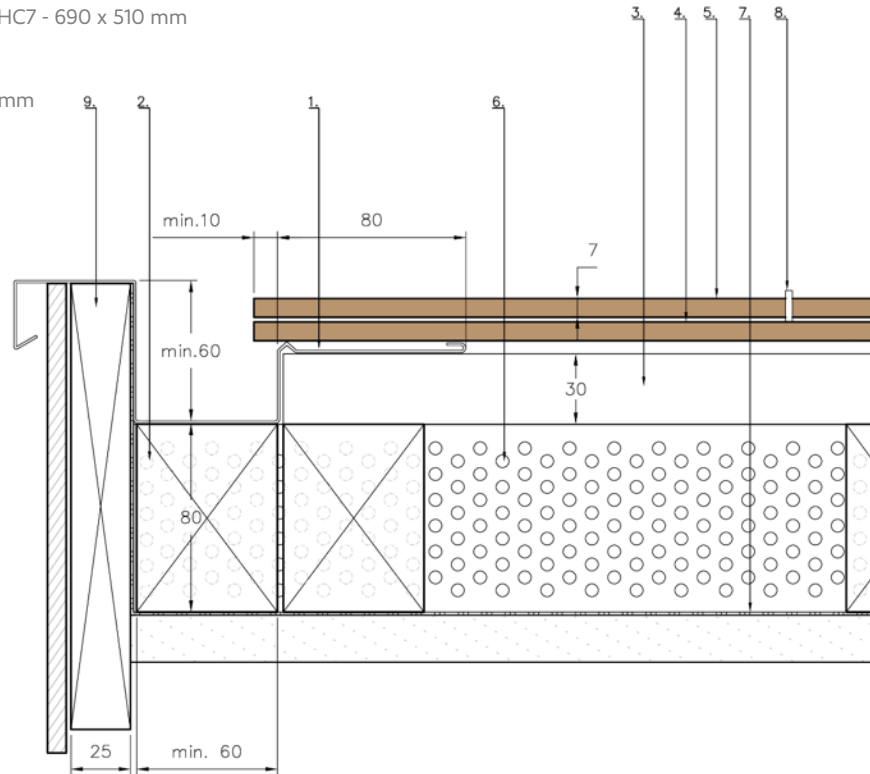
DATE
15.02.2024

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2. EDGE

2.1. EDGE DETAIL WITH RECESSED RUNNER

10. Recessed corridor
11. Counter-battens - 60 x 80 mm
12. Battens - 30 x 60 mm
13. Solaris™ VDiamond – 730 x 400 mm inactive bottom liner
14. Solaris™ SUPERHC7 - 690 x 510 mm
15. Perforated grille
16. Sub-cover
17. Hook - 130 x 2.7 mm
18. Wind vane board



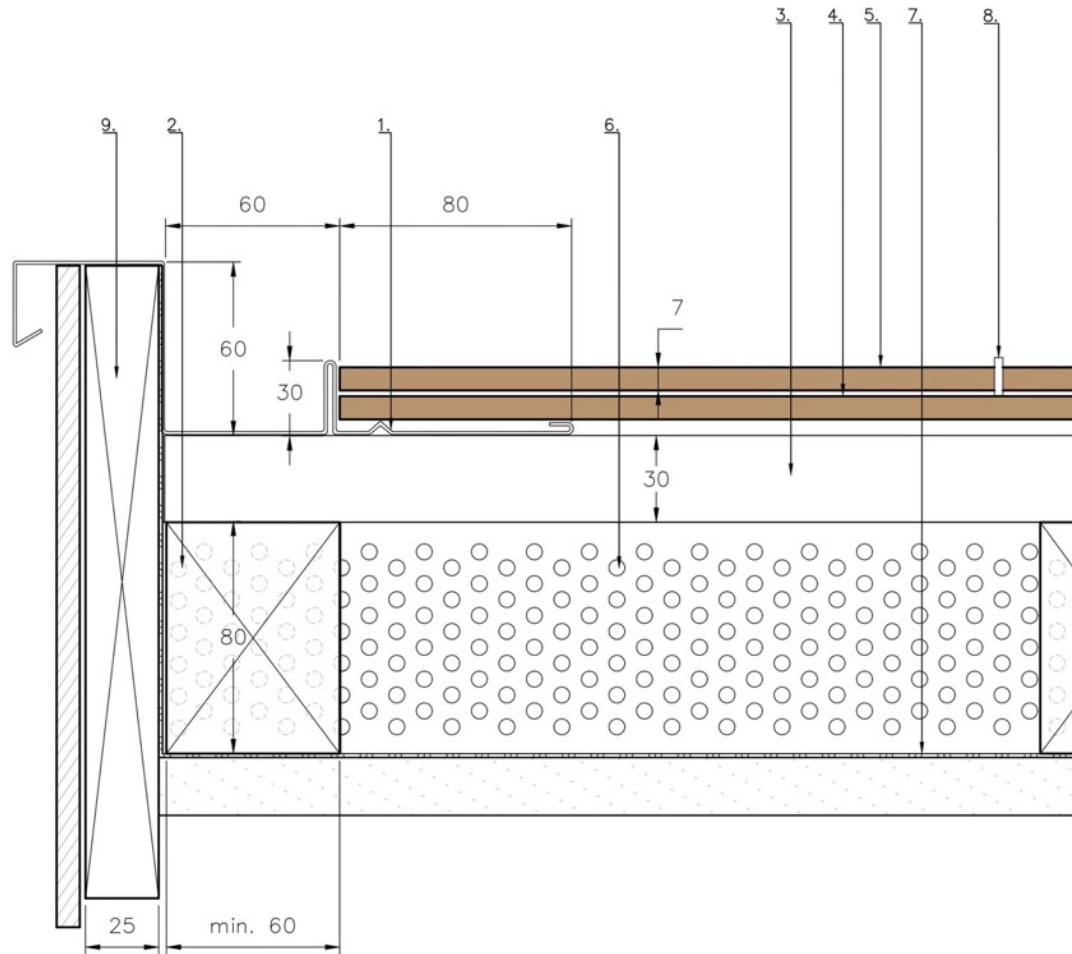
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DESCRIPTION
Edge details with recessed
runner
VDiamond
DATE
15.02.2024

2.2. EDGE DETAIL WITH PASSAGEWAY

1. Recessed corridor
2. Counter-battens - 60 x 80 mm
3. Battens - 30 x 60 mm
4. Solaris™ VDiamond – 730 x 400 mm inactive bottom liner
5. Solaris™ SUPERHC7 - 690 x 510 mm
6. Perforated grille
7. Sub-cover
8. Hook - 130 x 2.7 mm
9. Wind vane board



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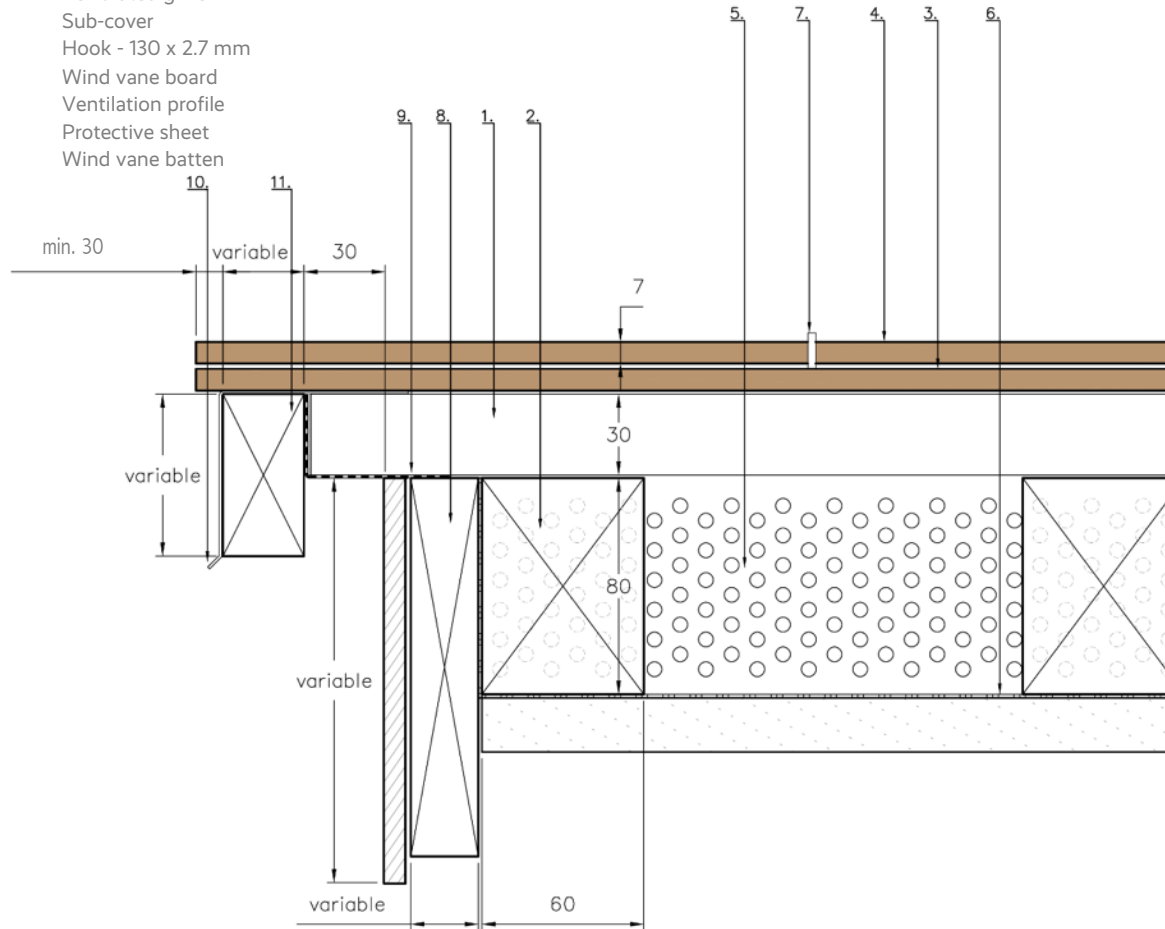
DESCRIPTION

Edge details with
passageway
VDiamond

DATE
20.11.2025

2.3. OVERHANGING EAVE EDGE DETAIL

1. Battens - 30 x 60 mm
2. Counter-battens - 60 x 80 mm
3. Solaris™ VDiamond 730 x 260 mm inactive bottom liner
4. Solaris™ VDiamond 730 x 400 mm
5. Perforated grille
6. Sub-cover
7. Hook - 130 x 2.7 mm
8. Wind vane board
9. Ventilation profile
10. Protective sheet
11. Wind vane batten



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DESCRIPTION

Overhanging eave edge details
VDiamond

DATE
15.02.2024

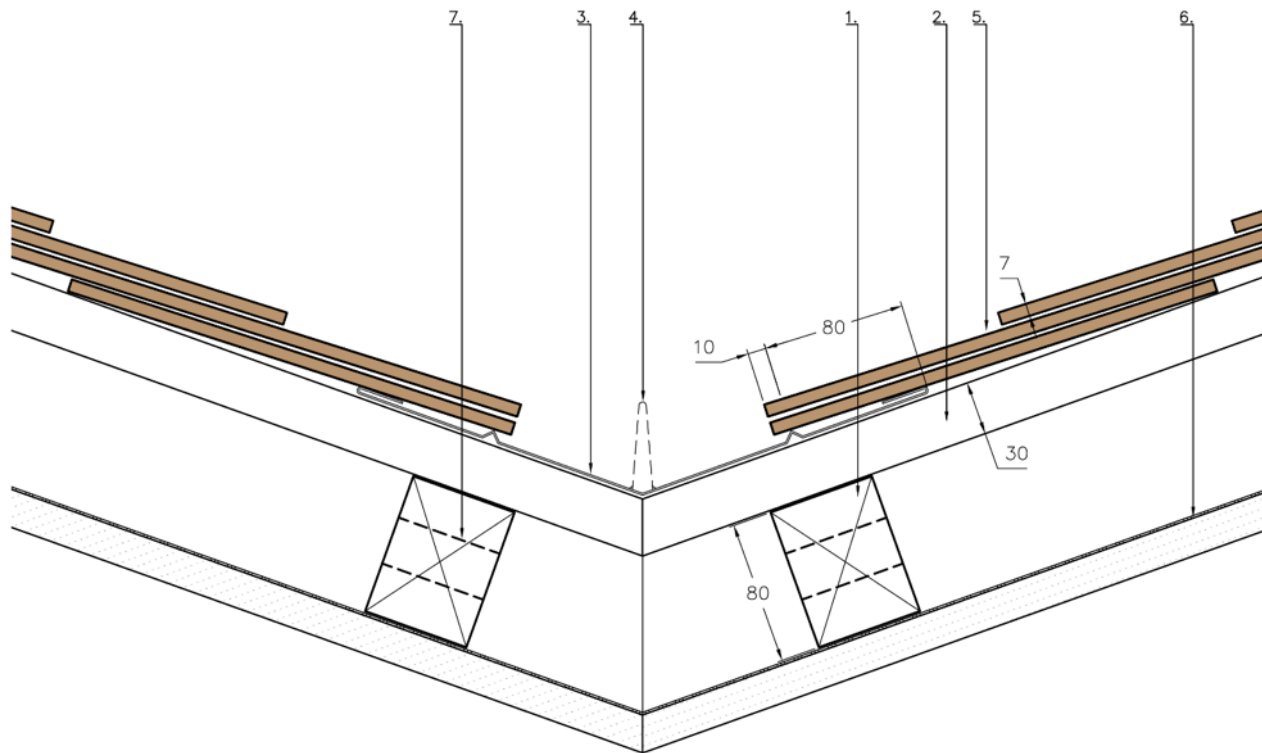
3. ROOF VALLEY

3.1. DETAIL OF VALLEY WITH TINSMITH'S TRADE

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Tinsmith's trade
4. Vertical fold
5. Solaris™ solar roof tile
6. Sub-cover
7. Ventilation duct diameter 40 mm (optional)



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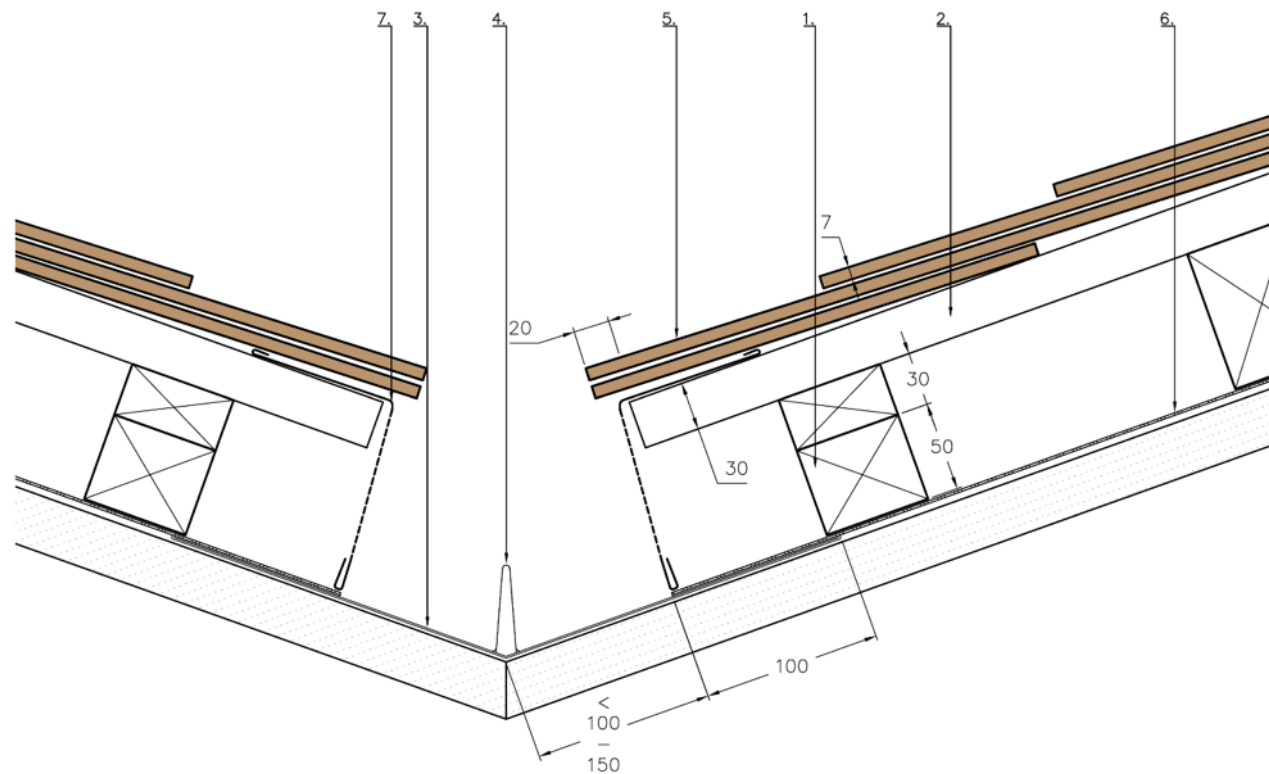
DESCRIPTION

Detail of valley with
tinsmith's trade
VDiamond

DATE
15.02.2024

3.2. DETAIL OF VENTILATED VALLEY WITH TINSMITH'S TRADE

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Tinsmith's trade
4. Vertical fold (optional)
5. Solaris™ solar roof tile
6. Sub-cover
7. Perforated grille



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DESCRIPTION

Detail of ventilated valley with
tinsmith's trade
VDiamond

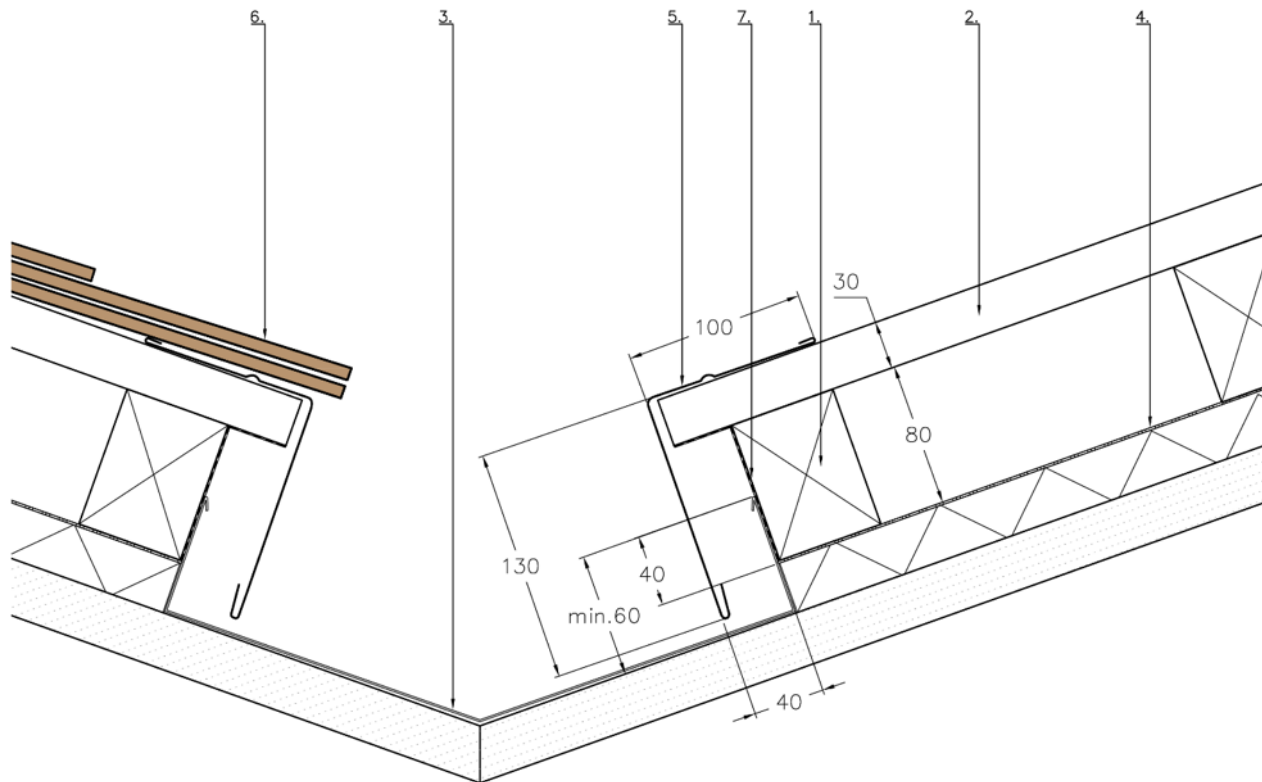
DATE
15.02.2024

3.3. DETAIL OF RECESSED AND VANTILATED VALLEY

1. Counter-battens - 60 x 80 mm
2. Battens - 30 x 60 mm
3. Roof sheet metal work
4. Roof underlayment including insulation)
5. Flashing
6. Solaris™ solar roof tile
7. Perforated grille



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DESCRIPTION

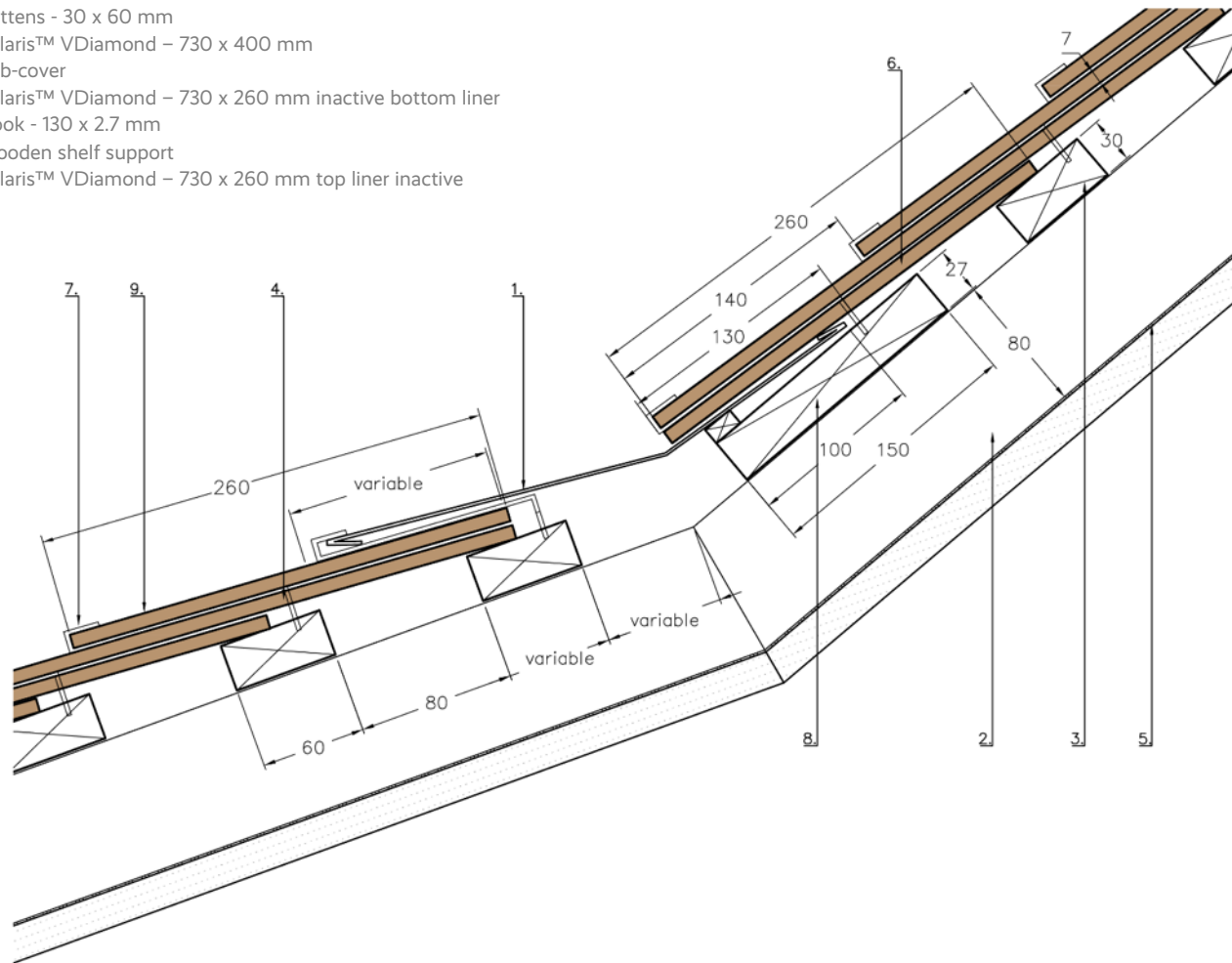
Detail of recessed and ventilated calley
VDiamond

DATE
15.02.2024

4. REVEILLON

4.1. TINSMITHING DETAIL ON REVEILLON

1. Reveillon tray
2. Counter-battens - 60 x 80 mm
3. Battens - 30 x 60 mm
4. Solaris™ VDiamond – 730 x 400 mm
5. Sub-cover
6. Solaris™ VDiamond – 730 x 260 mm inactive bottom liner
7. Hook - 130 x 2.7 mm
8. Wooden shelf support
9. Solaris™ VDiamond – 730 x 260 mm top liner inactive



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DESCRIPTION
Tinsmithing detail on reveillon
VDiamond

DATE
15.02.2024

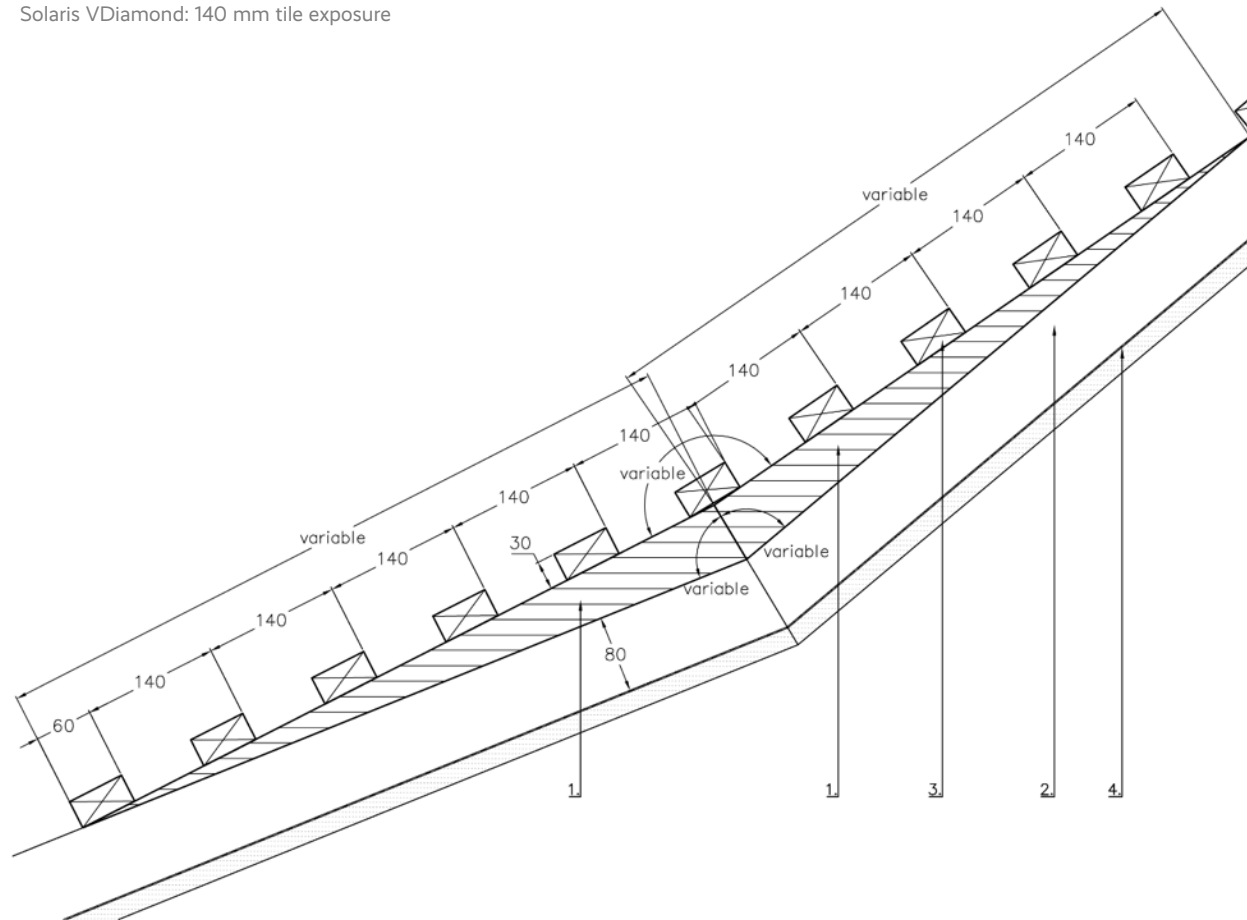
4.2. WOOD DETAIL ON REVEILLON

1. Compensation wedge
2. Counter-battens - 60 x 80 mm
3. Battens - 30 x 60 mm
4. Sub-cover

Solaris VDiamond: 140 mm tile exposure

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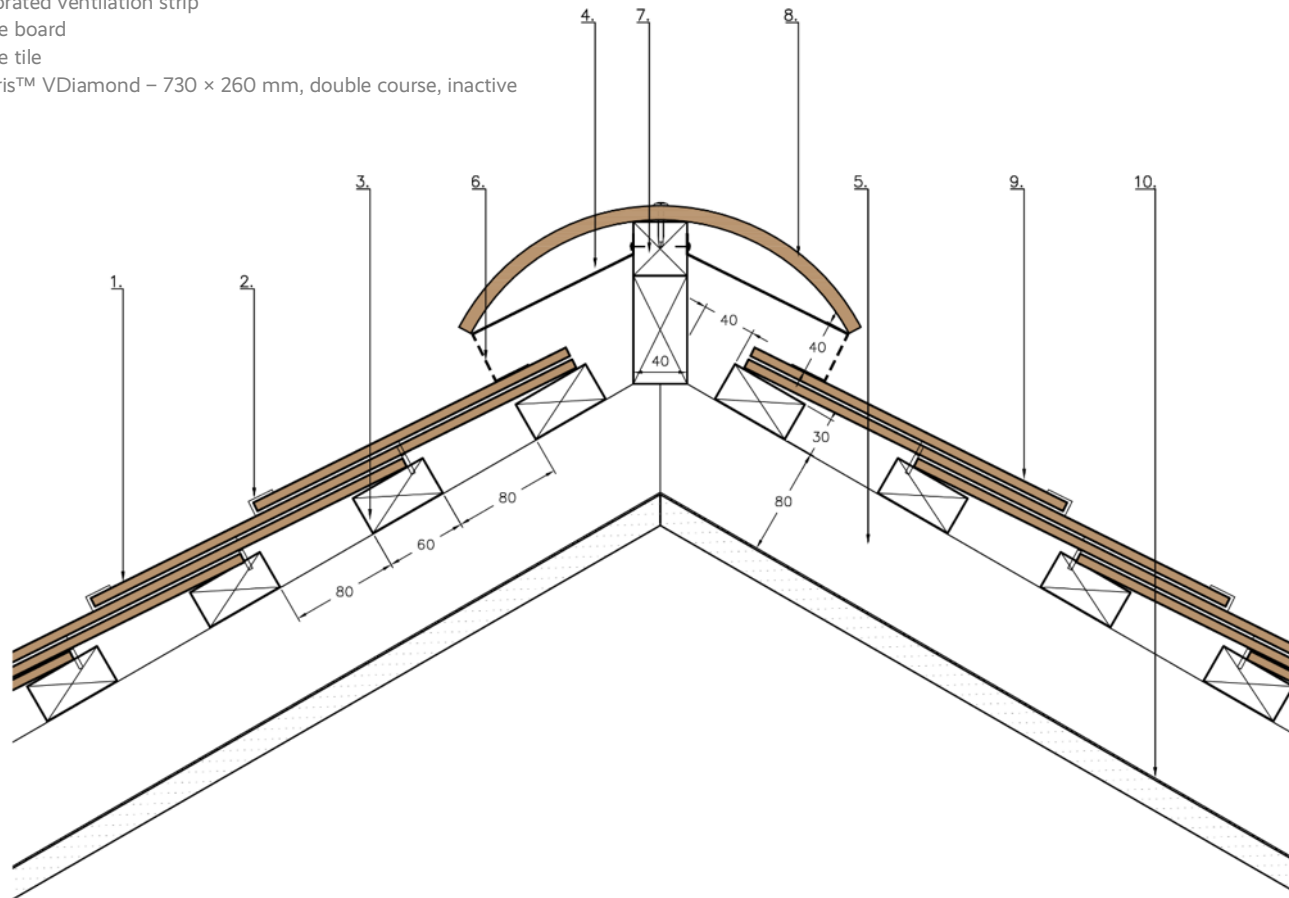
DESCRIPTION
Wood detail on reveillon
VDiamond

DATE
15.02.2024

5. HIP/RIDGE

5.1. DETAIL OF WOODEN OR REINFORCED SHEET METAL SUPPORT FOR HIP OR RIDGE

1. Solaris™ VDiamond – 730 × 400 mm
2. Hook – 130 mm × 2.7 mm
3. Battens – 30 × 60 mm
4. Ventilated metal substructure
5. Counter-battens – 60 × 80 mm
6. Perforated ventilation strip
7. Ridge board
8. Ridge tile
9. Solaris™ VDiamond – 730 × 260 mm, double course, inactive



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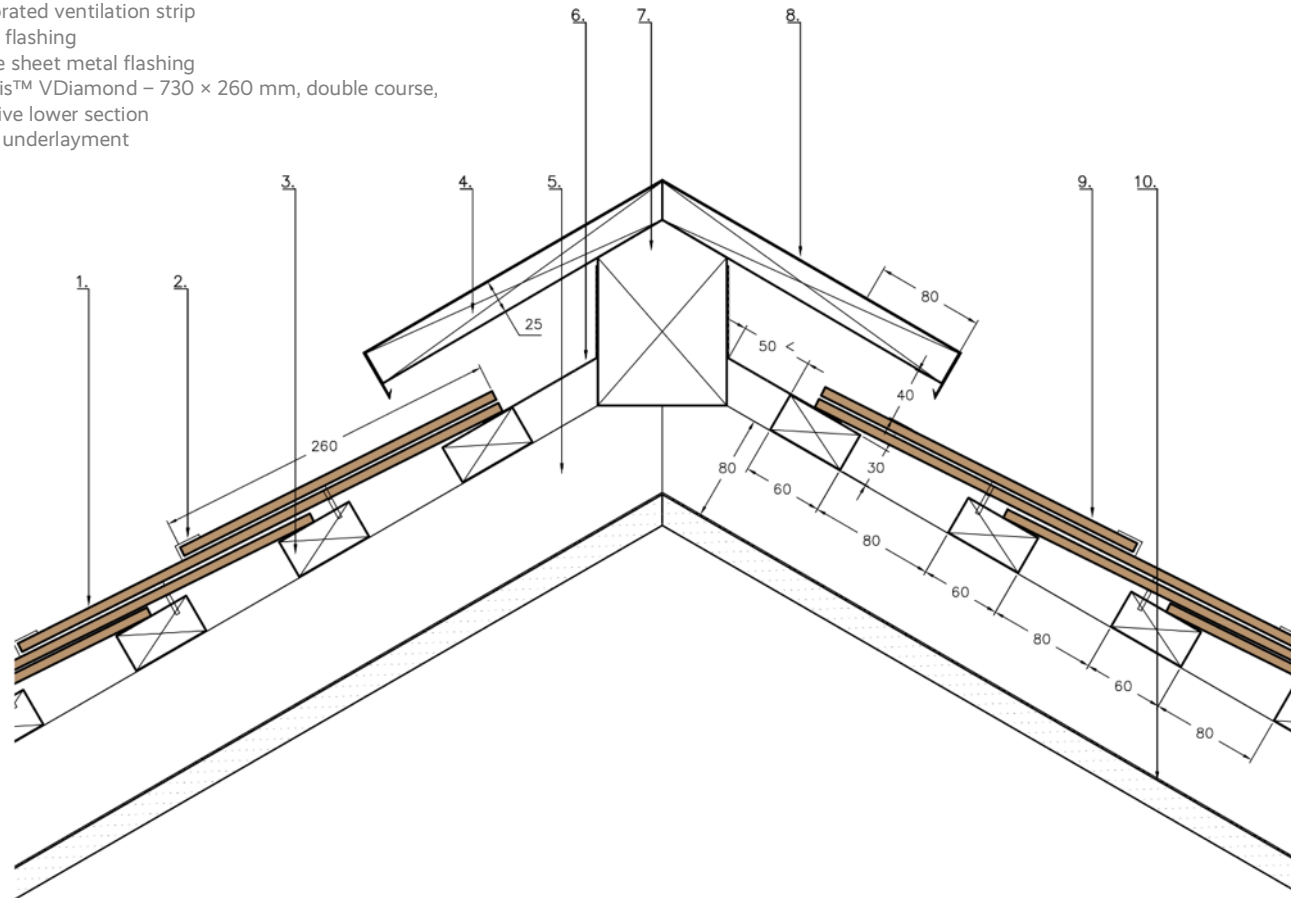
DESCRIPTION

Detail of wooden or reinforced
sheet metal support for hip or
ridge
VDiamond

DATE
15.02.2024

5.2. RIDGE DETAIL WITH TINSMITHING

1. Solaris™ VDiamond – 730 × 400 mm
2. Hook – 130 × 2.7 mm
3. Battens – 30 × 60 mm
4. Wooden support for sheet metal work
5. Counter-battens – 60 × 80 mm
6. Perforated ventilation strip
7. Edge flashing
8. Ridge sheet metal flashing
9. Solaris™ VDiamond – 730 × 260 mm, double course, inactive lower section
10. Roof underlayment



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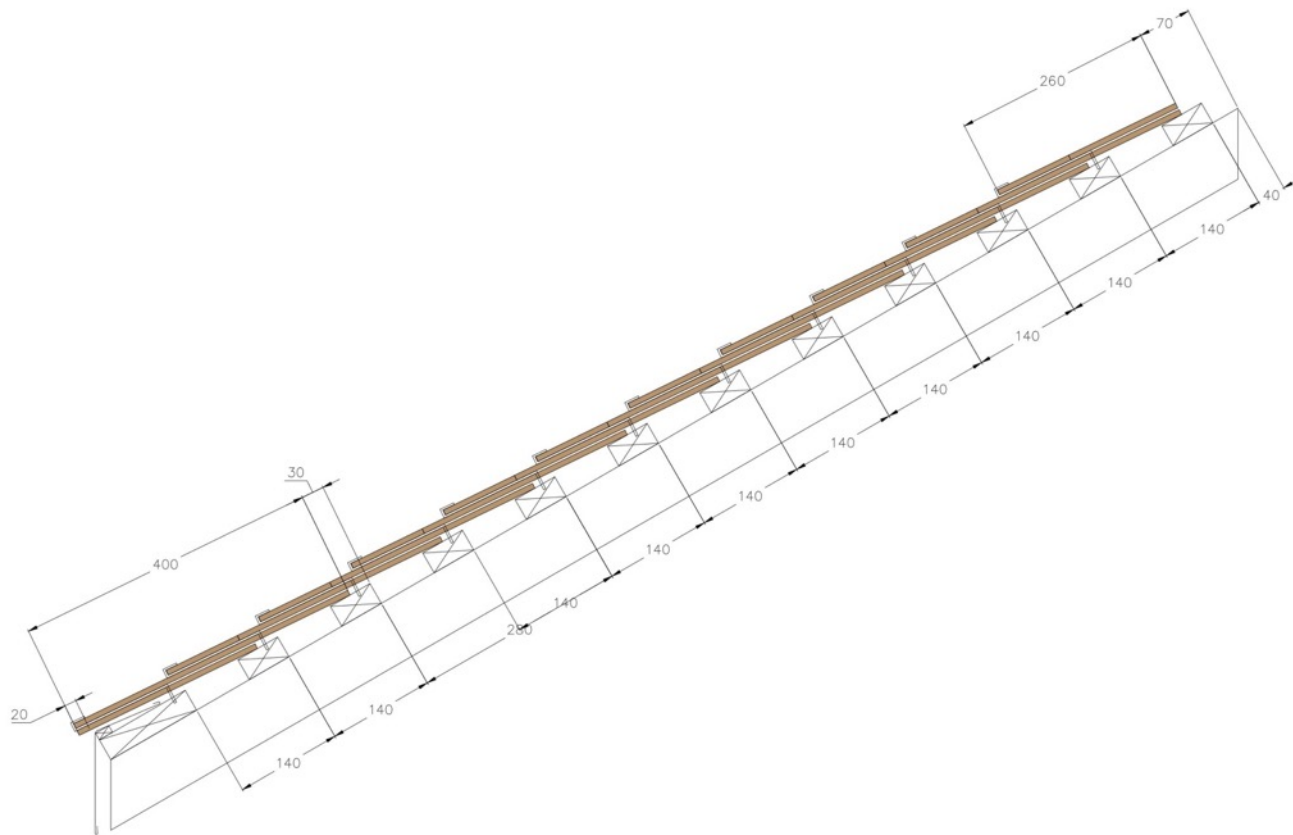
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DESCRIPTION
Ridge detail with tinsmithing
VDiamond

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6. LAYOUT

6.1. LAYOUT OF THE SUBFLOOR



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DESCRIPTION

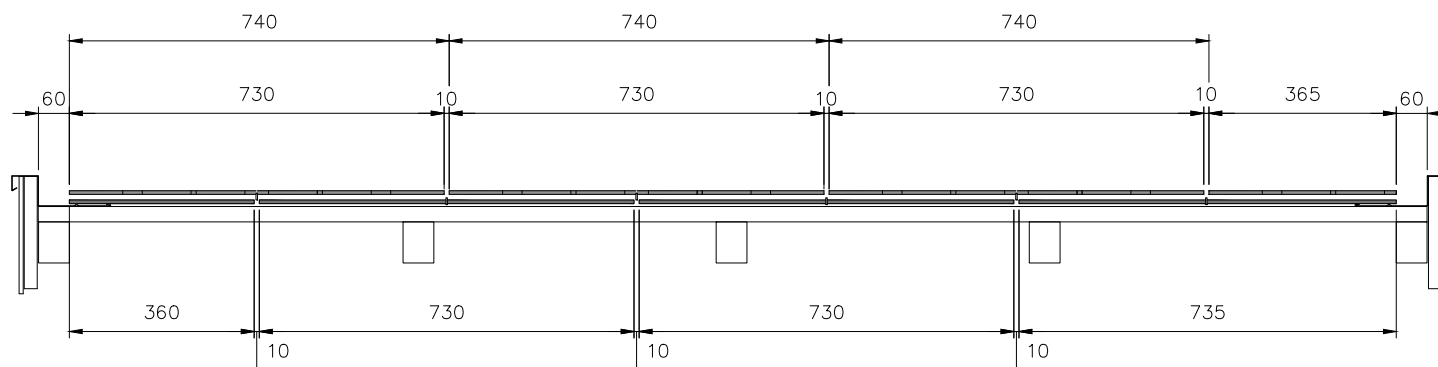
Layout of the subfloor
VDiamond

DATE
20.11.2025

6.2.DETAIL OF LAYOUT WITH CORRIDOR



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DESCRIPTION

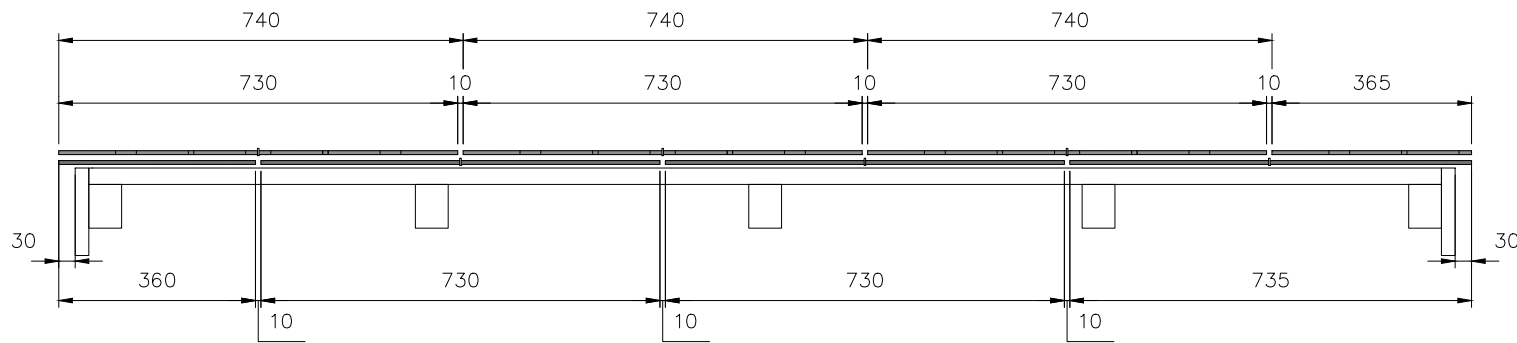
Detail of layout with corridor
VDiamond

DATE
01.10.2025

6.3.DETAIL OF LAYOUT WITH OVERHANGING EDGE



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DESCRIPTION

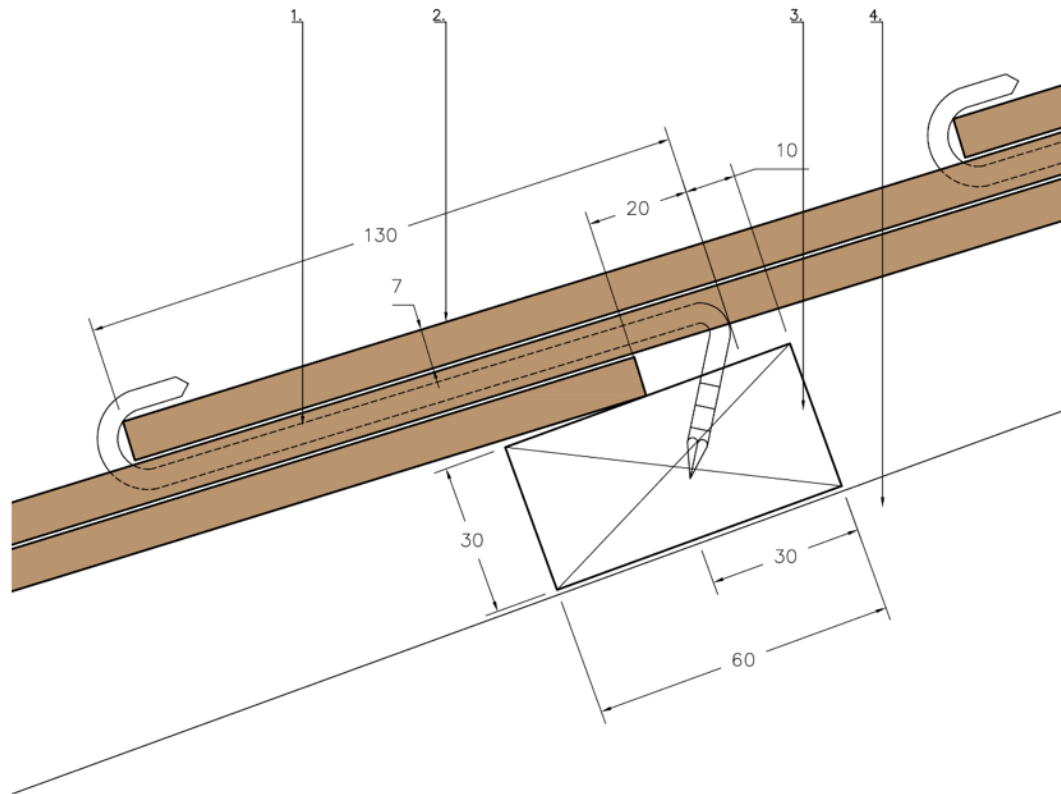
Detail of layout with
overhanging edge
VDiamond

DATE
01.10.2025

7. VARIA

7.1. DETAIL OF HOOK FASTENING, DOUBLE INSTALLATION

1. Hook – 130 mm × 2.7 mm
2. Solaris™ VDiamond – 730 x 400 mm
3. Batten – 30 × 60 mm
4. Counter-batten – 60 × 80 mm



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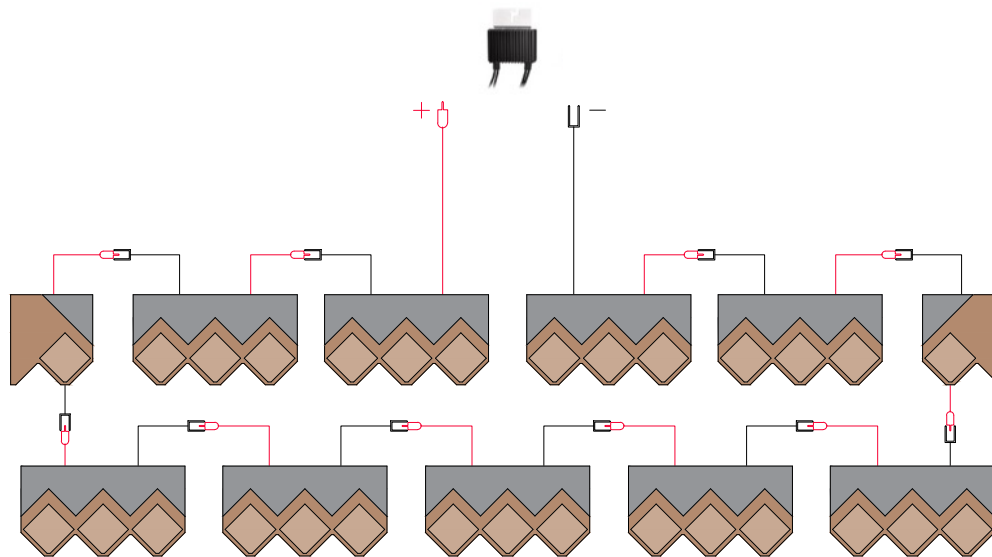
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DESCRIPTION
Detail of hook fastening, double
installation
VDiamond

DATE
15.02.2024

ELECTRICAL DATA

WIRING DIAGRAM - TWO ROWS PER OPTIMISER



Measurement instructions

1 loop contains:

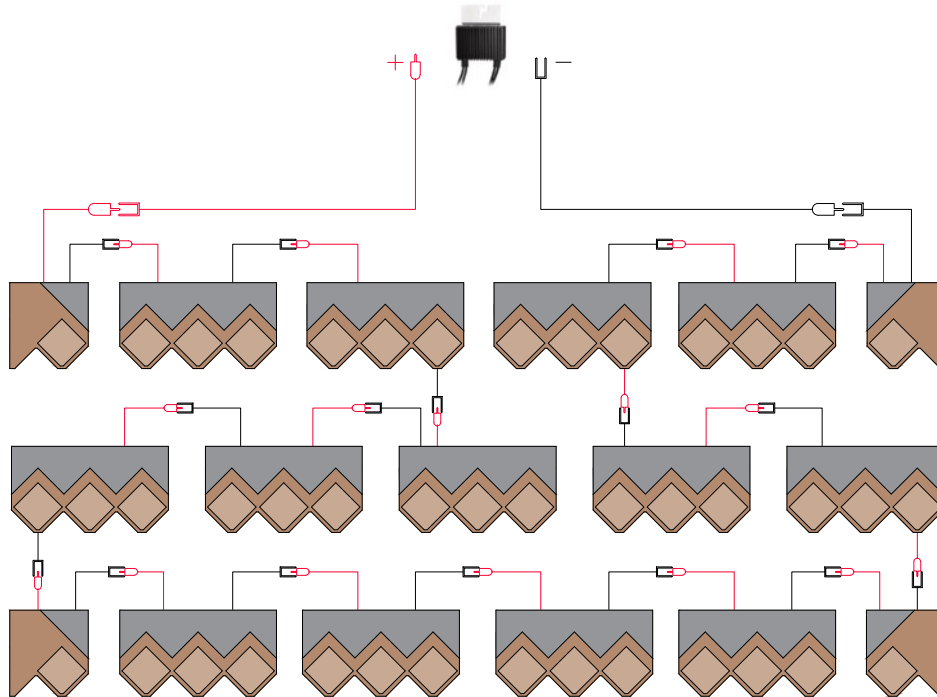
- approximately 15 to 20 tiles
- minimum 5-6 tiles

Voltage per loop:

- at least 0.6 V
- maximum 1.1V

Before and after closing a loop, the voltage must be measured and must increase as indicated.

WIRING DIAGRAM - THREE ROWS PER OPTIMISER WITH EXTENSION CABLE



Measurement instructions

1 loop contains:

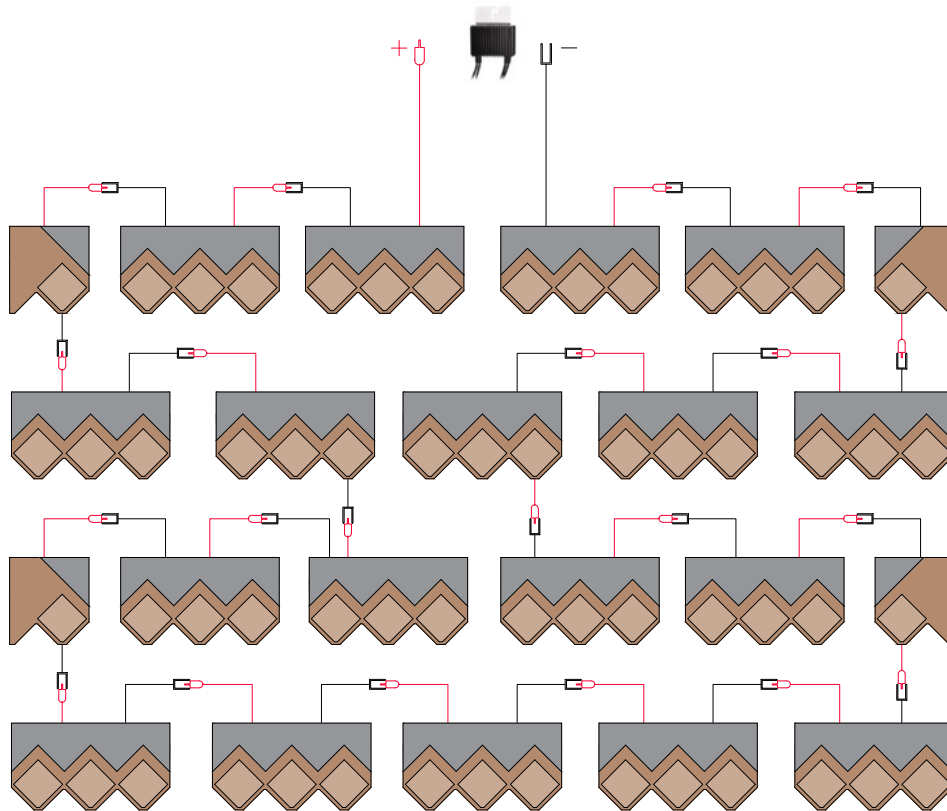
- approximately 15 to 20 tiles
- minimum 5-6 tiles

Voltage per loop:

- at least 0.6 V
- maximum 1.1V

Before and after closing a loop, the voltage must be measured and must increase as indicated.

WIRING DIAGRAM - FOUR ROWS PER OPTIMISER



Measurement instructions

1 loop contains:

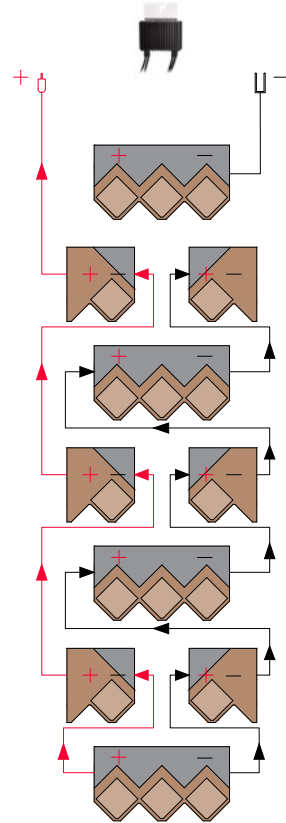
- approximately 15 to 20 tiles
- minimum 5-6 tiles

Voltage per loop:

- at least 0.6 V
- maximum 1.1V

Before and after closing a loop, the voltage must be measured and must increase as indicated.

WIRING DIAGRAM - VERTICAL ACROSS THE WIDTH OF A TILE



Measurement instructions

1 loop contains:

- approximately 15 to 20 tiles
- minimum 5-6 tiles

Voltage per loop:

- at least 0.6 V
- maximum 1.1V

Before and after closing a loop, the voltage must be measured and must increase as indicated.

LOGISTICS

LOGISTICS

Pallet/box dimensions: 1.10 x 0.80 m

Variable height: max. 1.00 m

Max. weight per pallet/box: 750 kg



CONTACT

For more information, please contact us

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