

SPECIFICATIONS AND INSTALLATION GUIDE

Solaris™ SUPERHC7 Solar Tiles

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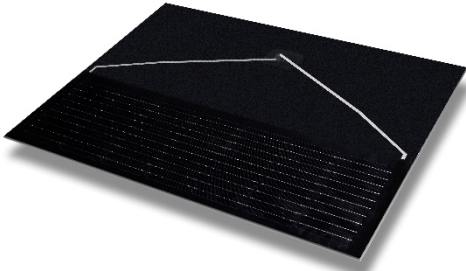
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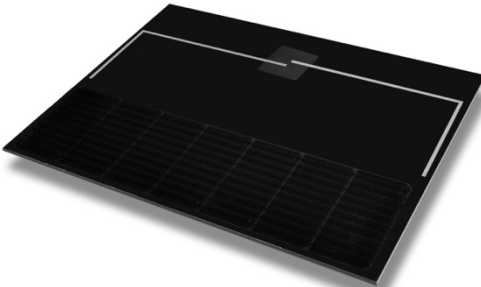
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SOLARIS™ SUPERHC7 SOLAR TILES RANGE

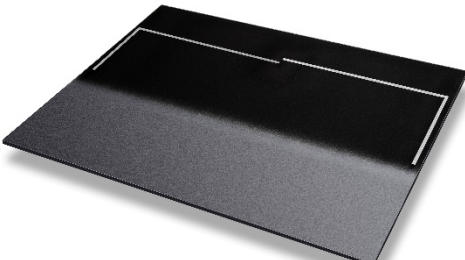
SOLARIS™ CLASSIC SUPERHC7



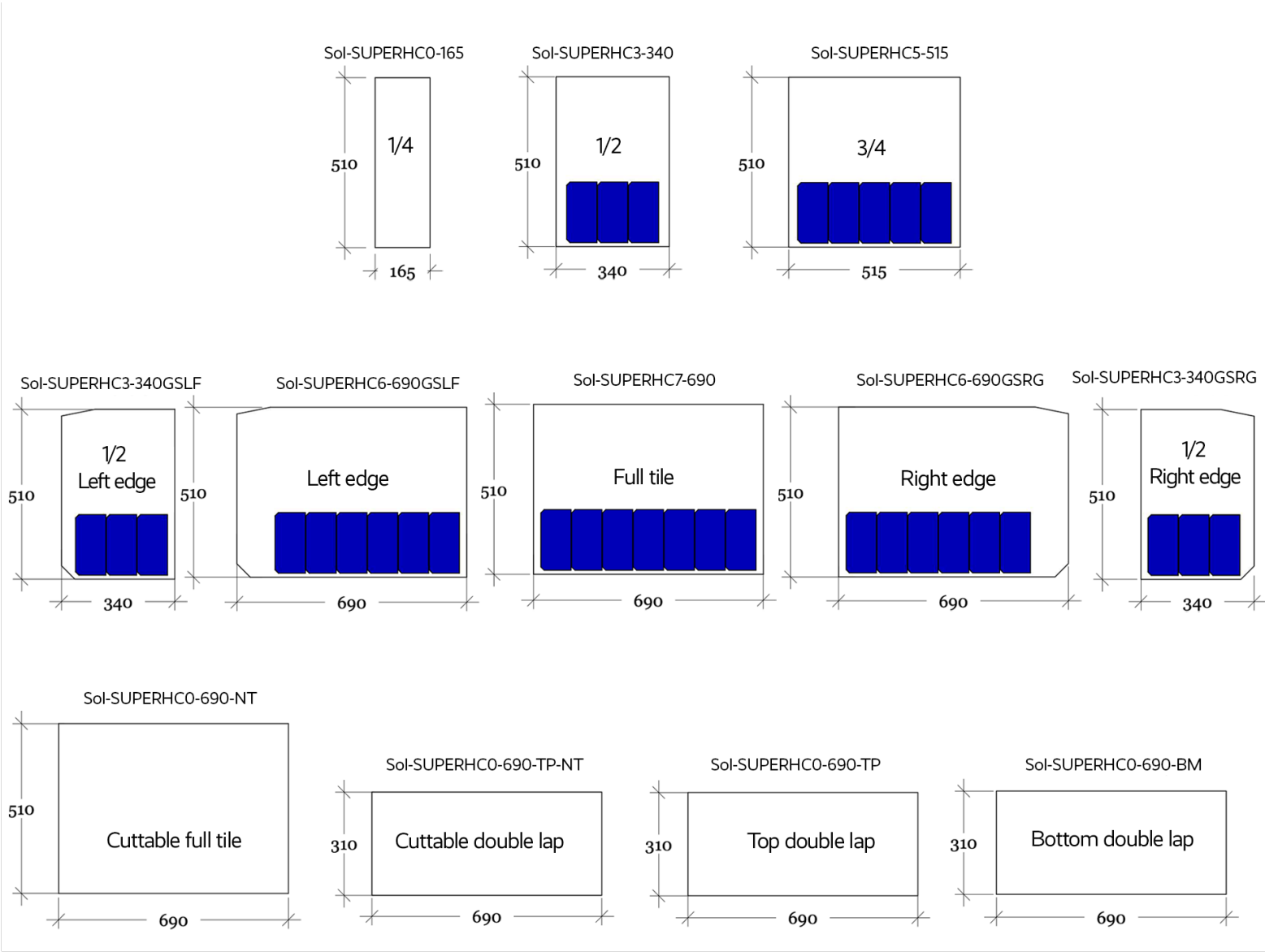
SOLARIS™ PREMIUM BLACK SUPERHC7



SOLARIS™ HERITAGE SUPERHC7



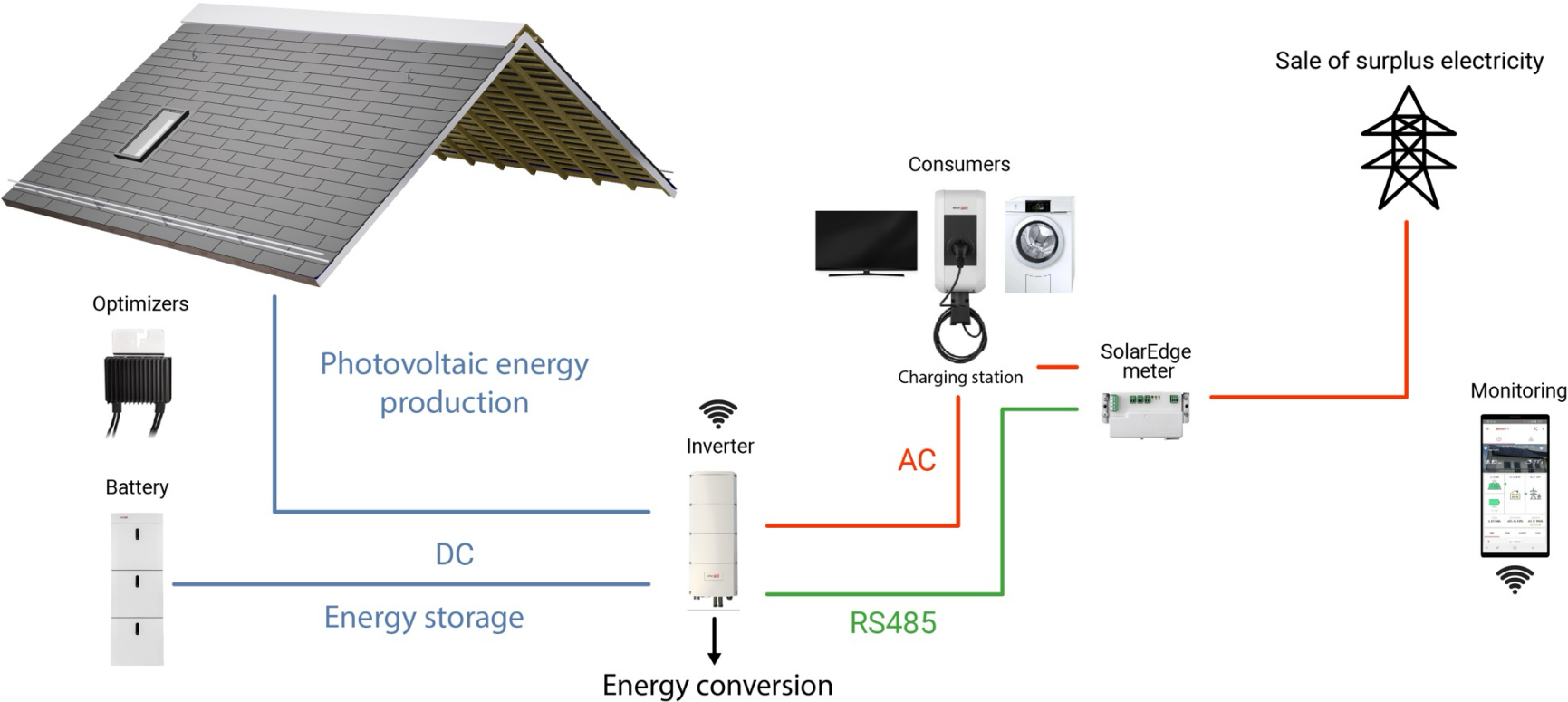
CATALOGUE OF TILES



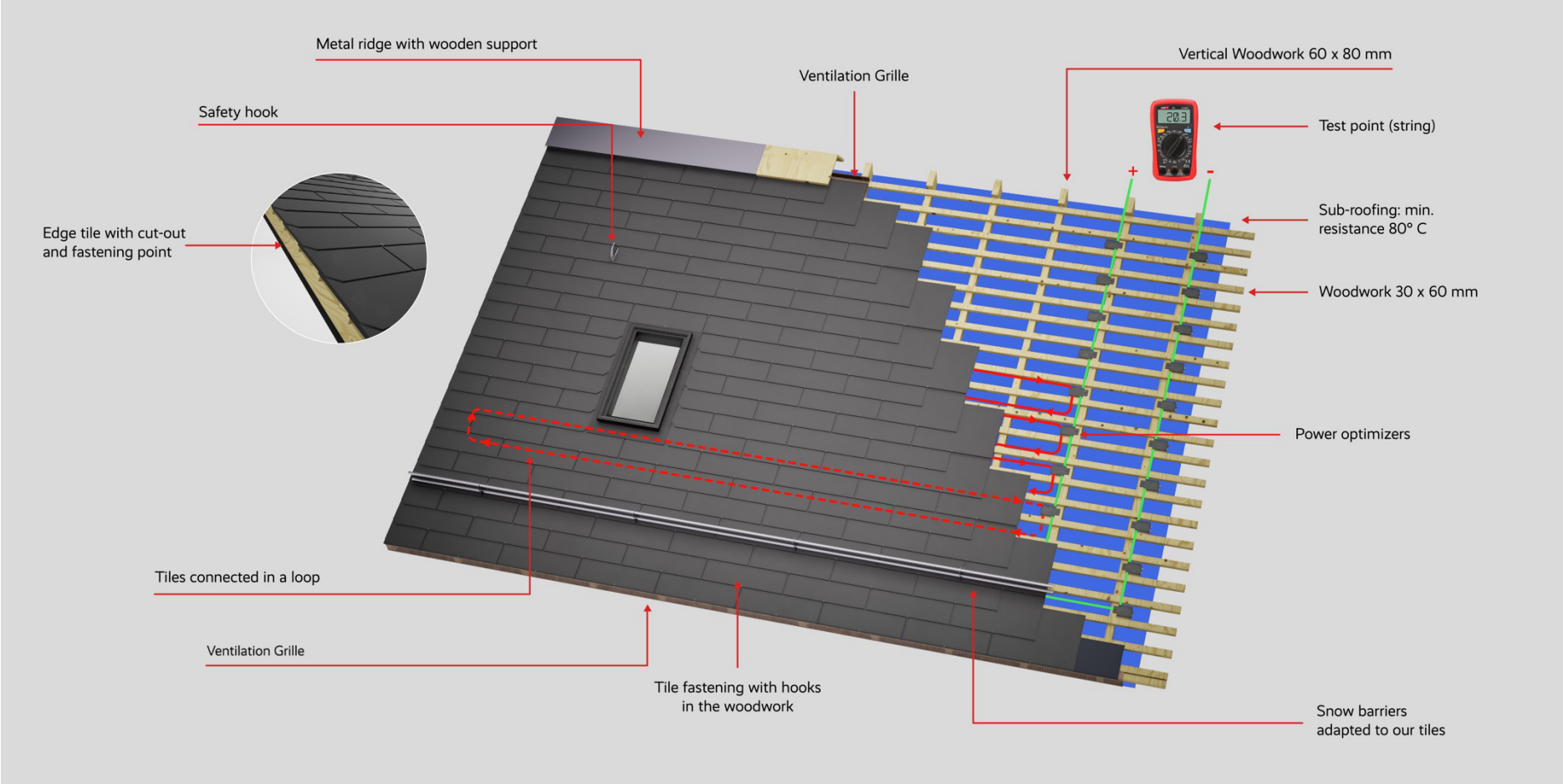
PHYSICAL SPECIFICATIONS

	Solaris™ Classic SUPERHC7	Solaris™ Premium Black SUPERHC7	Solaris™ Heritage SUPERHC7
Appearance	Black, visible silver lines	Black, invisible lines	Matt grey, invisible lines
Tile size (W x H mm)	690 x 510 mm	690 x 510 mm	690 x 510 mm
Visible surface area (W x H mm)	690 x 200 mm	690 x 200 mm	690 x 200 mm
Thickness	9 mm	9 mm	9 mm
Number of cells per tile	7	7	7
Number of tiles per m2	7.14	7.14	7.14
Weight per unit	7.3 kg	7.3 kg	7.3 kg
Weight per m2	52.20 kg	52.20 kg	52.20 kg
Type of solar cell	Half-cell M10 PERC	Half-cell M10 PERC	Half-cell M10 PERC
Type of connector	MC4-Evo 2 (IP68)	MC4-Evo 2 (IP68)	MC4-Evo 2 (IP68)
Hail resistance	RG4	RG4	RG4
Max. test load	13 333 Pa	13 333 Pa	13 333 Pa
Type of glass	Tempered glass with anti-reflective treatment	Tempered glass with anti-reflective treatment	Tempered glass with anti-reflective treatment

OUR PHOTOVOLTAIC SOLUTIONS



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:

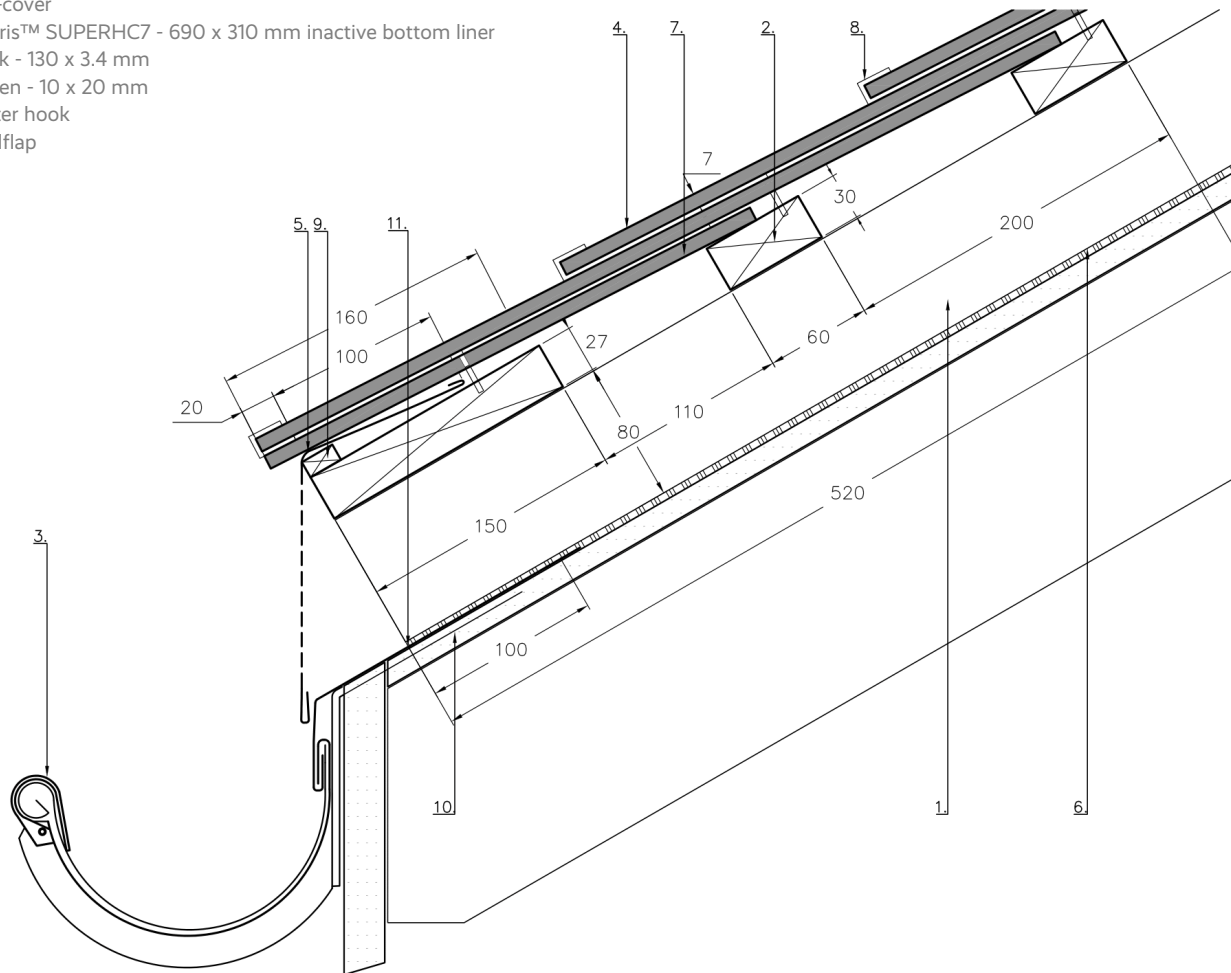
Slope	Minimum 20° and maximum 90°. If the slope is less than 20°, a special waterproof sub-roof must be installed (extraordinary requirement).
Horizontal Roofing Battens	30 mm x 60 mm (27 mm x 60 mm also accepted)
Tile exposure (distance between the battens)	Minimum 200 mm
Vertical Counter-Battens	80 mm height x 60 mm width
Sub-roofing	The type of sub-covering chosen must comply with standard SIA 232/1 and the guidelines of the Swiss Building Envelope Association. With tiles from the Solaris™ range, you will need at least one underlay designed for heavy-duty use, capable of withstanding temperatures of 80 degrees.
Woodwork Flatness Tolerance	Any horizontal or vertical unevenness in the surface to be covered – that is, 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 essential 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 section of 80 mm is strongly recommended.
Tinsmithing material	Standard – no special requests
Ridge Capping	See drawings included below
Ridge	See the proposed technical solutions (minimum 40 mm gap for ventilation).
Snow bars and hooks	Glaromat FS24 'Solaire' snow guard
Safety hooks	Glaromat models SIHA MAX BS and Glaro SL BS, 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™ SUPERHC7 - 690 x 510 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
8. Hook - 130 x 3.4 mm
9. Batten - 10 x 20 mm
10. Gutter hook
11. Mudflap



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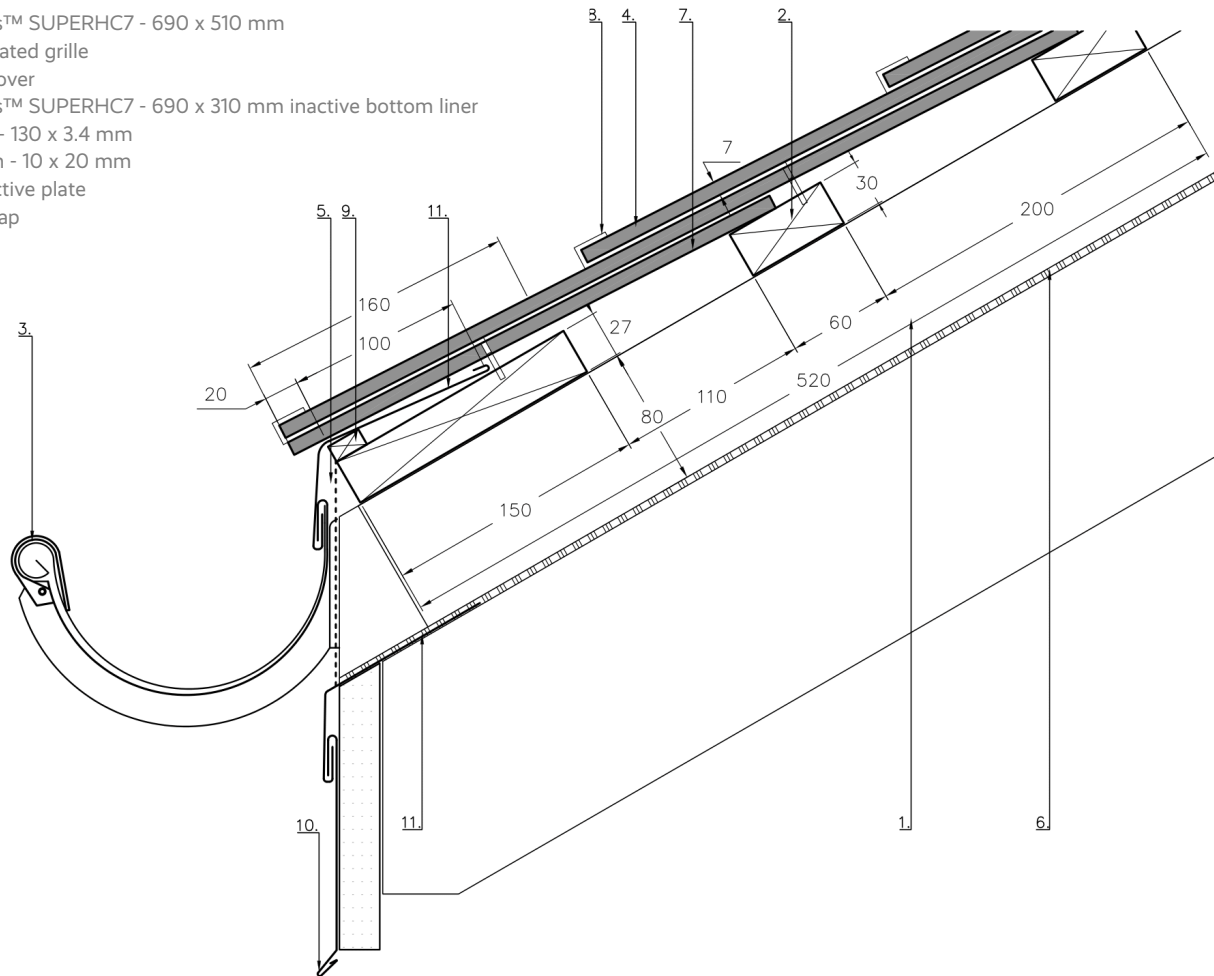
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DESCRIPTION
Detail of gutter
with tinsmithing
SUPERHC7 CL, PB, HR

DATE
15.05.2024

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™ SUPERHC7 - 690 x 510 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
8. Hook - 130 x 3.4 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap



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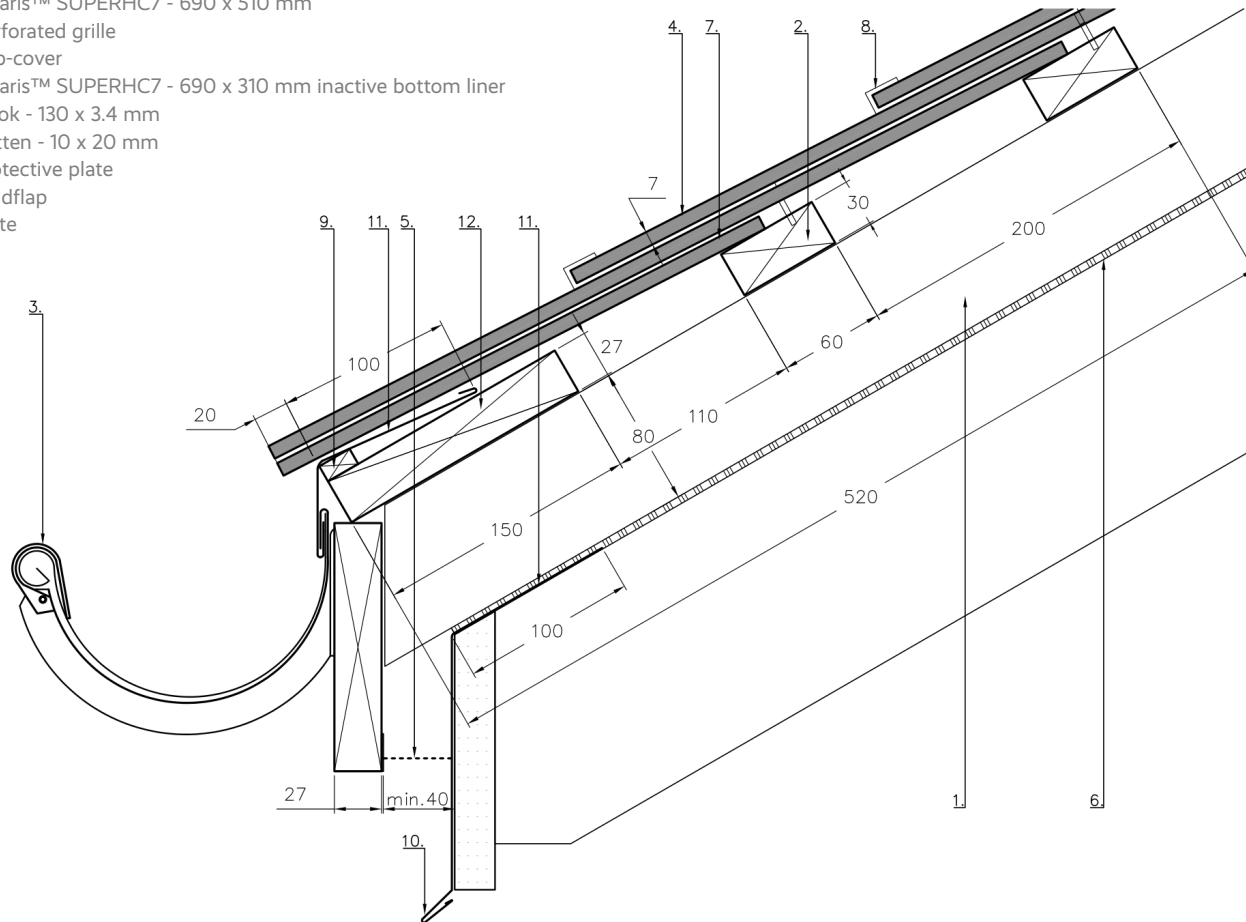
DESCRIPTION

Detail of gutter with
concealed ventilation
SUPERHC7 CL, PB, HR

DATE
15.05.2024

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™ SUPERHC7 - 690 x 510 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
8. Hook - 130 x 3.4 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap
12. Plate



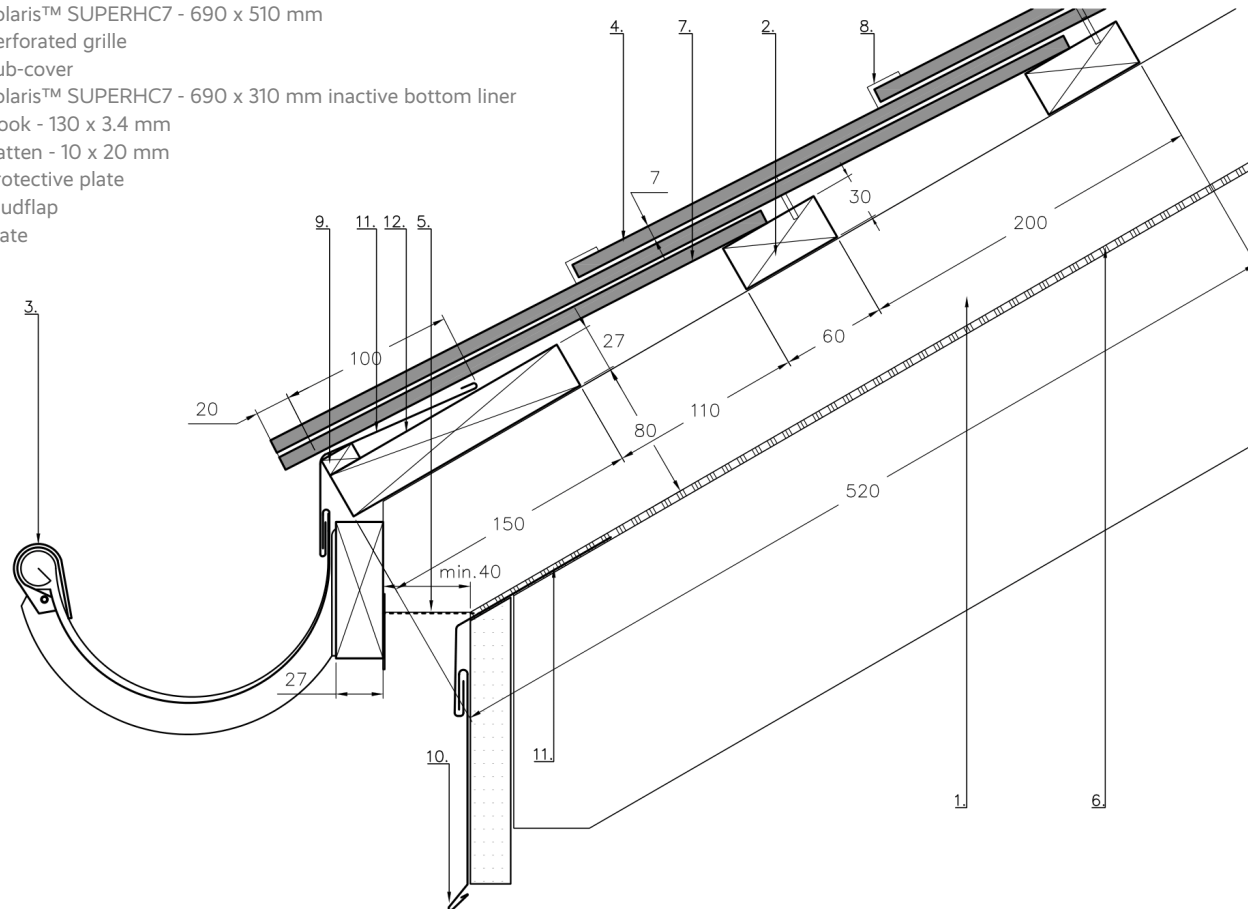
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DESCRIPTION
Detail of gutter with
double fascia
SUPERHC7 CL, PB, HR
DATE
15.05.2024

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™ SUPERHC7 - 690 x 510 mm
5. Perforated grille
6. Sub-cover
7. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
8. Hook - 130 x 3.4 mm
9. Batten - 10 x 20 mm
10. Protective plate
11. Mudflap
12. Plate



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DESCRIPTION

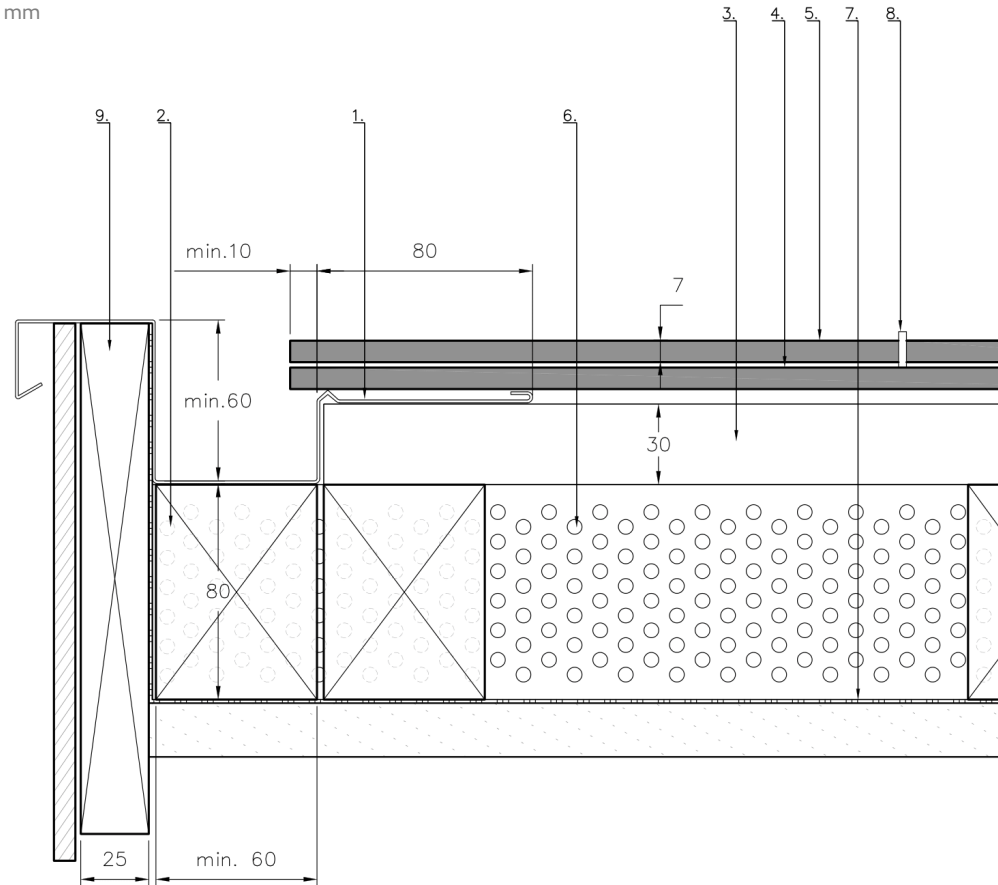
Detail of high gutter with
double fascia plate
SUPERHC7 CL, PB, HR

DATE
15.05.2024

2. EDGE

2.1 EDGE DETAIL WITH RECESSED RUNNER

1. Recessed corridor
2. Counter-battens - 60 x 80 mm
3. Battens - 30 x 60 mm
4. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
5. Solaris™ SUPERHC7 - 690 x 510 mm
6. Perforated grille
7. Sub-cover
8. Hook - 130 x 3.4 mm
9. Wind vane board



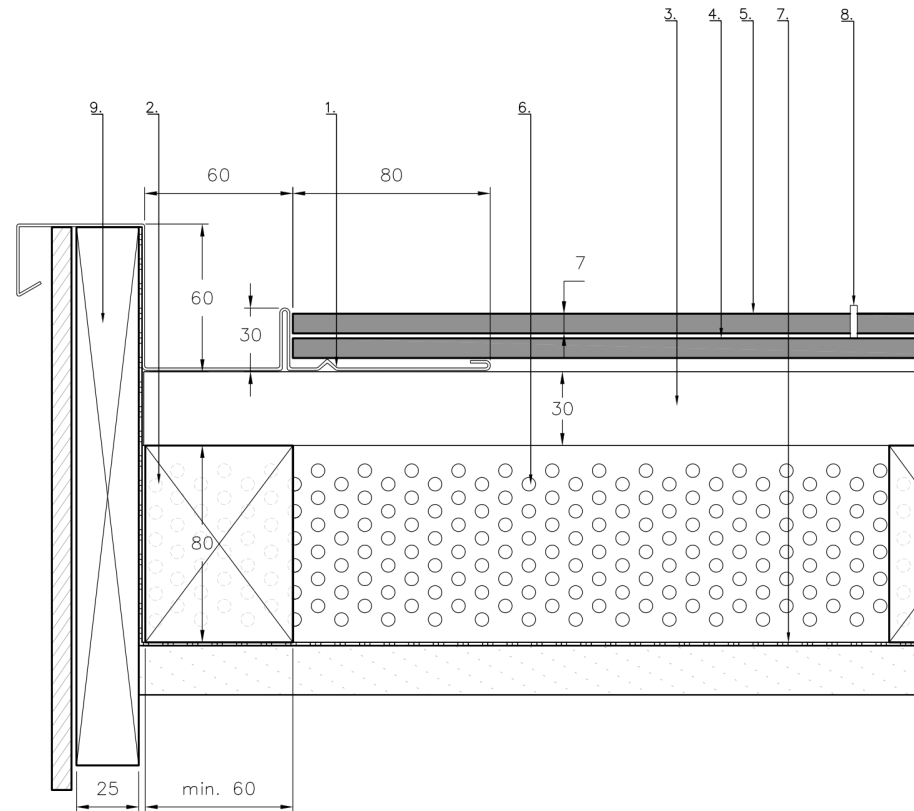
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DESCRIPTION
Edge detail with
recessed runner
SUPERHC7 CL, PB, HR
DATE
15.05.2024

2.2 EDGE DETAIL WITH PASSAGEWAY

1. Recessed corridor
2. Counter-battens - 60 x 80 mm
3. Battens - 30 x 60 mm
4. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
5. Solaris™ SUPERHC7 - 690 x 510 mm
6. Perforated grille
7. Sub-cover
8. Hook - 130 x 3.4 mm
9. Wind vane board



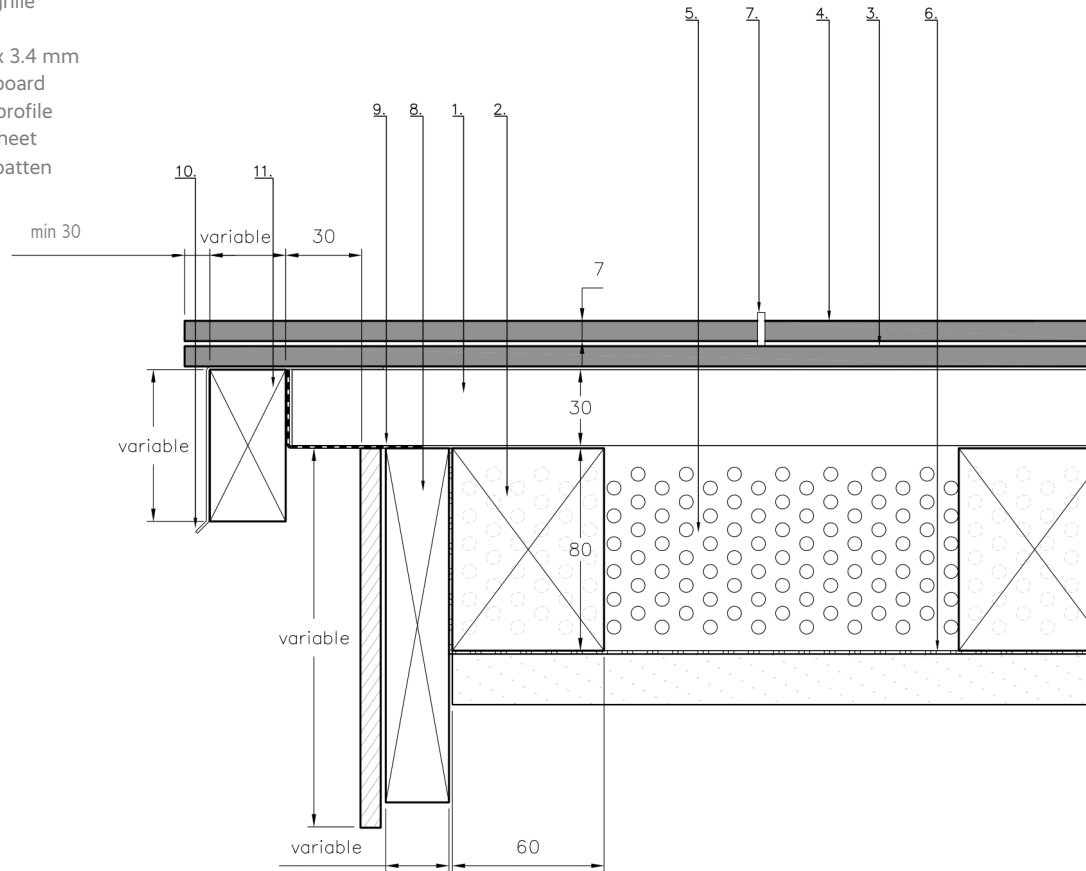
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DESCRIPTION
Edge detail with
passageway
SUPERHC7 CL, PB, HR
DATE
15.06.2025

2.3 OVERHANGING EAVE EDGE DETAIL

1. Battens - 30 x 60 mm
2. Counter-battens - 60 x 80 mm
3. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
4. Solaris™ SUPERHC7 - 690 x 510 mm
5. Perforated grille
6. Sub-cover
7. Hook - 130 x 3.4 mm
8. Wind vane board
9. Ventilation profile
10. Protective sheet
11. Wind vane batten



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DESCRIPTION
Overhanging eave
edge detail
SUPERHC7 CL, PB, HR
DATE
15.05.2024

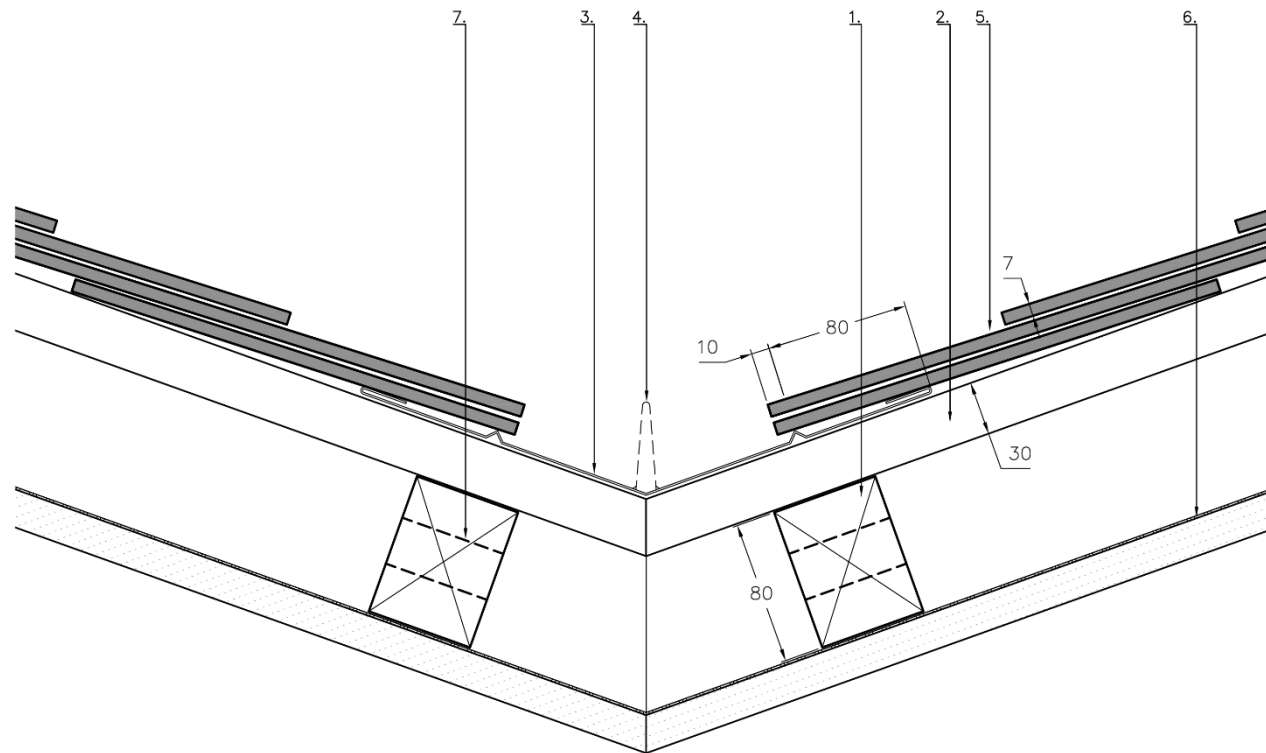
3. ROOF VALLEY

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
Solaris CL, PB, HR
VDiamond

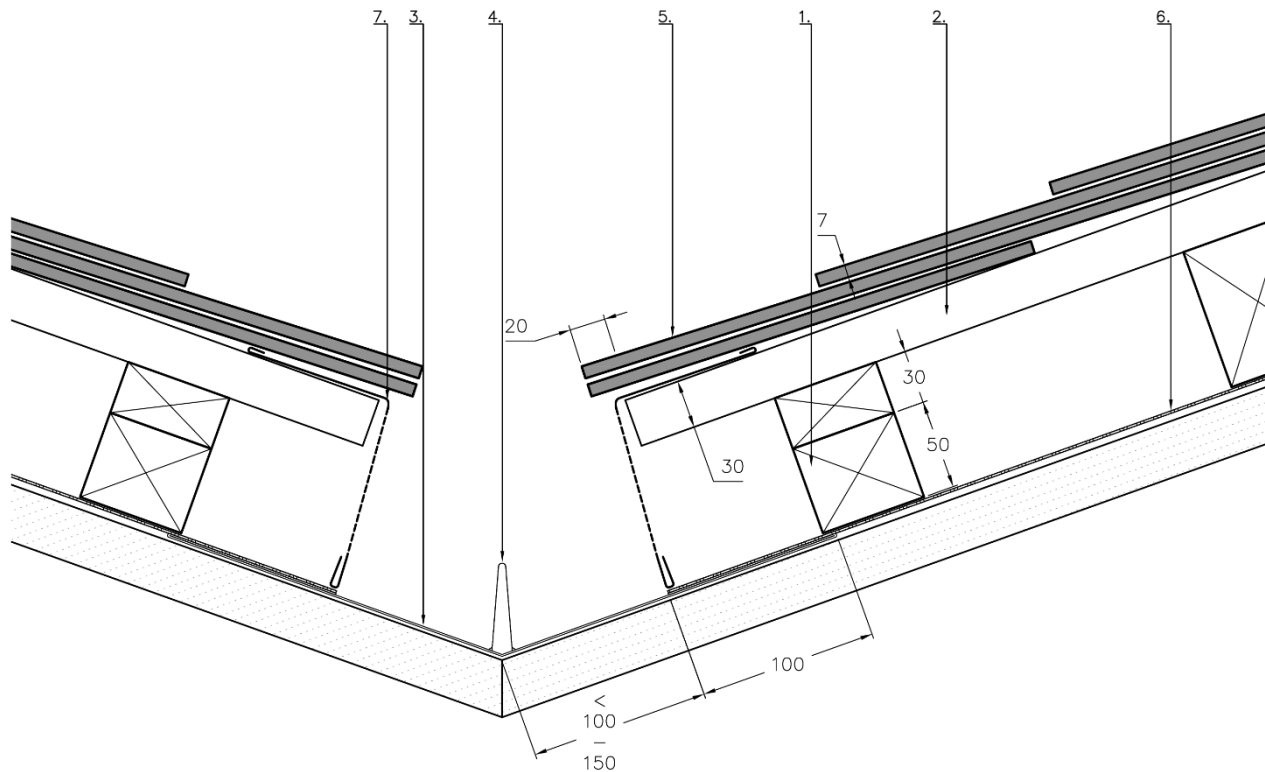
DATE
15.02.2024

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
Solaris CL, PB, HR
VDiamond

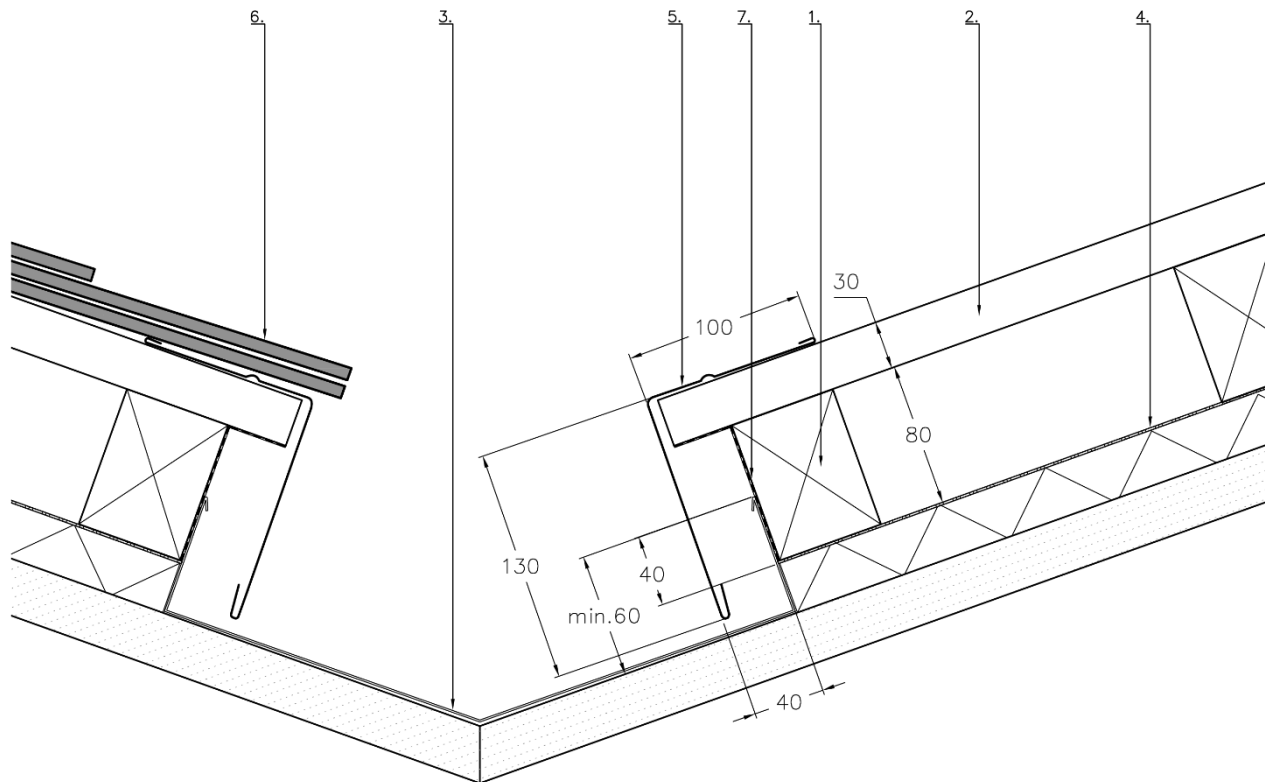
DATE
15.02.2024

3.3 DETAIL OF RECESSED AND VENTILATED VALLEY

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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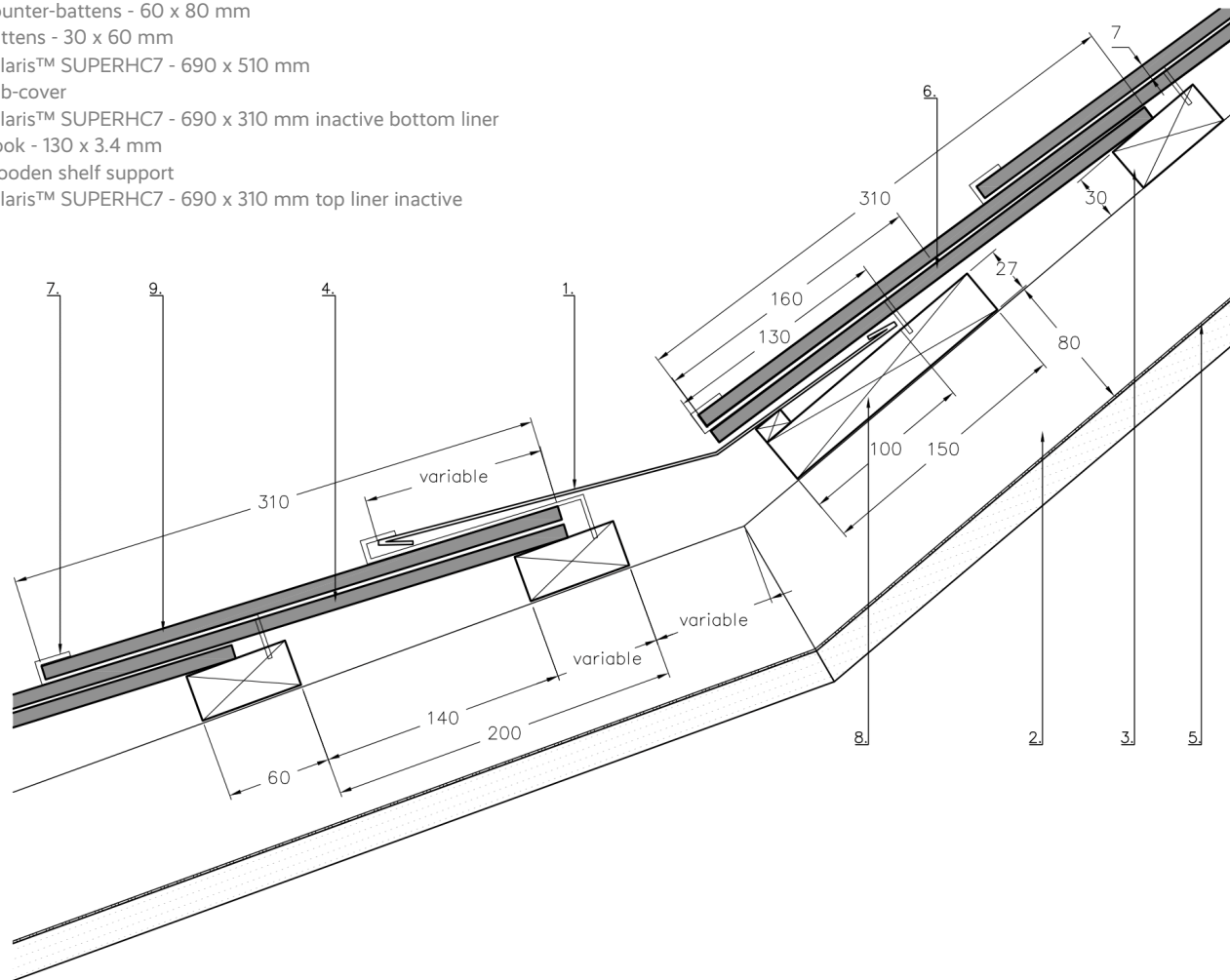
DESCRIPTION
Detail of recessed and ventilated valley Tinsmith's Solaris CL, PB, HR VDiamond

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™ SUPERHC7 - 690 x 510 mm
5. Sub-cover
6. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
7. Hook - 130 x 3.4 mm
8. Wooden shelf support
9. Solaris™ SUPERHC7 - 690 x 310 mm top liner inactive



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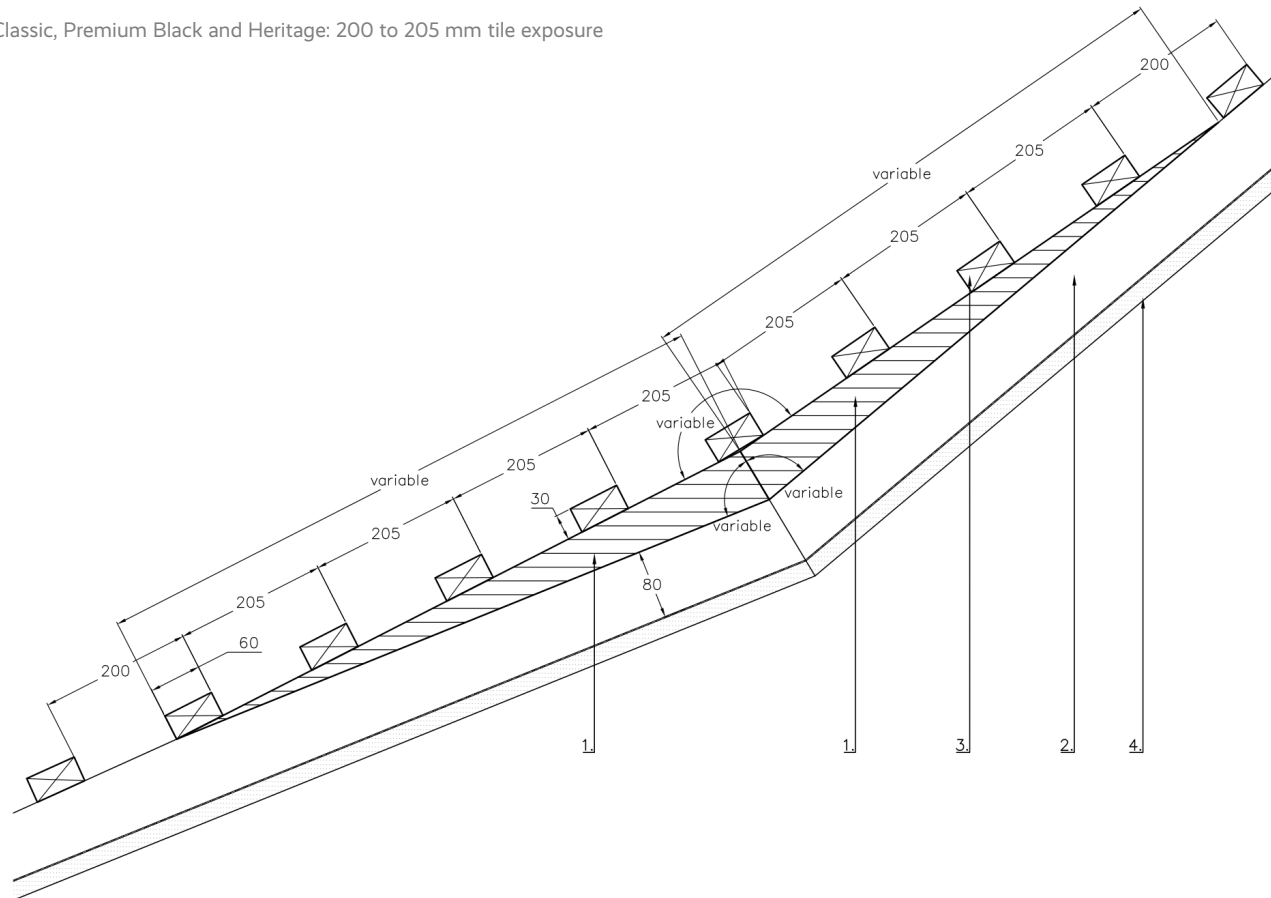
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DESCRIPTION
Tinsmith detail on
reveillon
SUPERHC7 CL, PB, HR
DATE
15.05.2024

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

SuperHC7 Classic, Premium Black and Heritage: 200 to 205 mm tile exposure



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DESCRIPTION

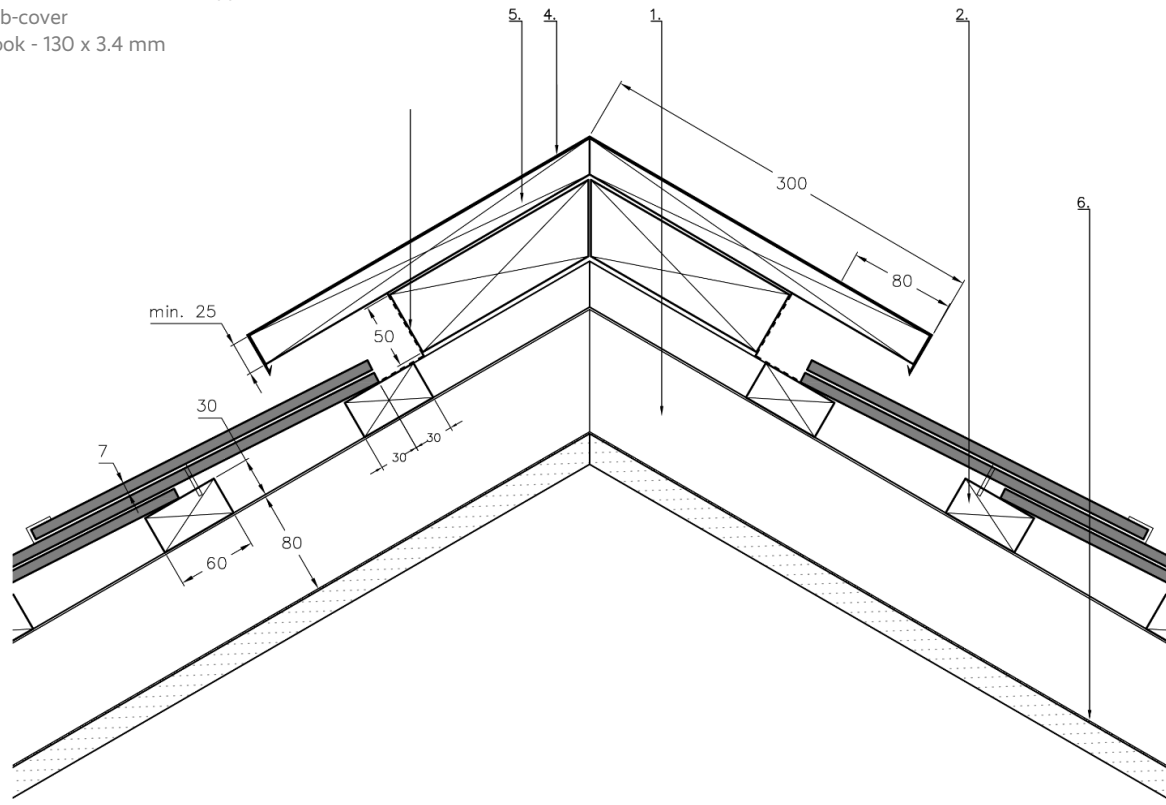
Wood detail, on
reveillon
SUPERHC7 CL, PB, HR

DATE
15.05.2024

5. HIP / RIDGE

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

1. Counter-battens - 60 x 80 mm
2. Batten - 30 x 60 mm
3. Perforated grille
4. Tinsmithing on hip / ridge
5. Wooden or sheet metal support
6. Sub-cover
7. Hook - 130 x 3.4 mm



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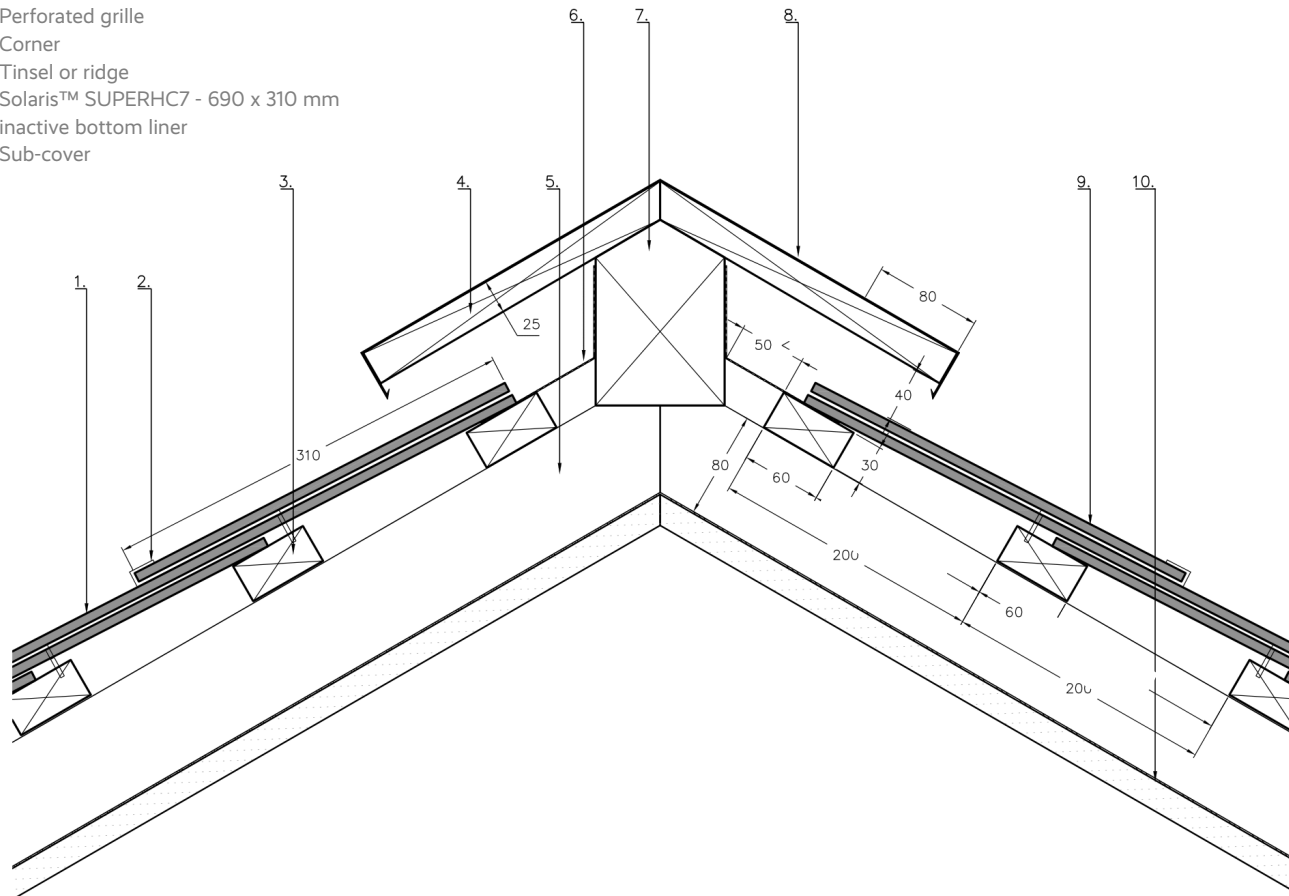
DESCRIPTION

Detail of wooden or
reinforced sheet metal
support for hip or ridge
Solaris CL, PB, HR

DATE
15.02.2024

5.2 RIDGE DETAIL WITH TINSMITHING

1. Solaris™ SUPERHC7 - 690 x 510 mm
2. Hook - 130 x 3.4 mm
3. Batten - 30 x 60 mm
4. Wooden support for hips
5. Counter-battens - 60 x 80 mm
6. Perforated grille
7. Corner
8. Tinsel or ridge
9. Solaris™ SUPERHC7 - 690 x 310 mm inactive bottom liner
10. Sub-cover



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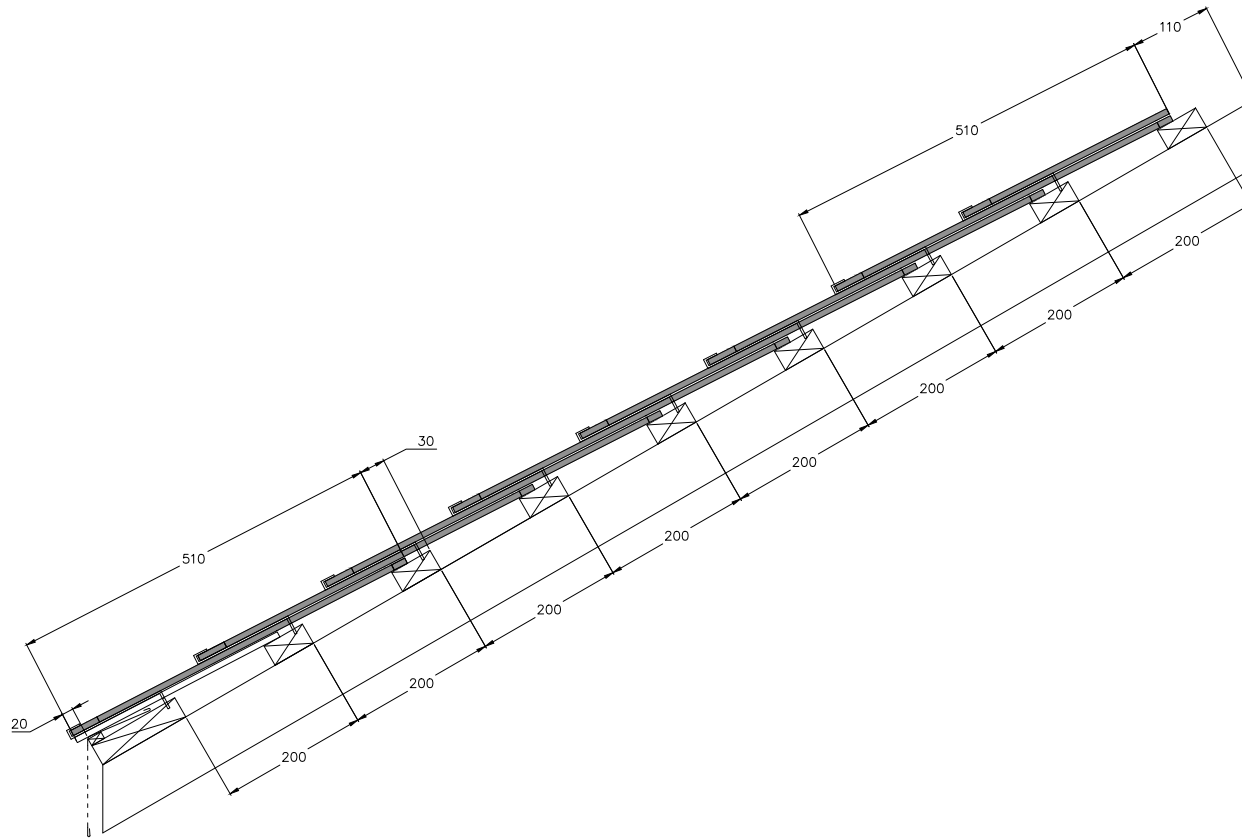
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DESCRIPTION
Ridge detail with
tinsmithing
SUPERHC7 CL, PB, HR

DATE
15.05.2024

6. LAYOUT

6.1 LAYOUT OF THE SUBFLOOR



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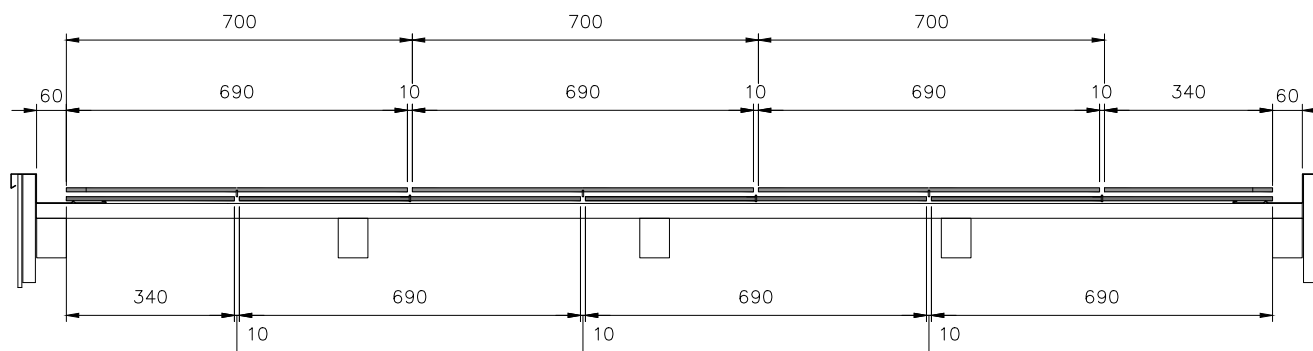
DESCRIPTION
Layout of the subfloor
SUPERHC7 CL, PB, HR

DATE
15.10.2025

6.2 DETAIL OF LAYOUT WTH CORRIDOR



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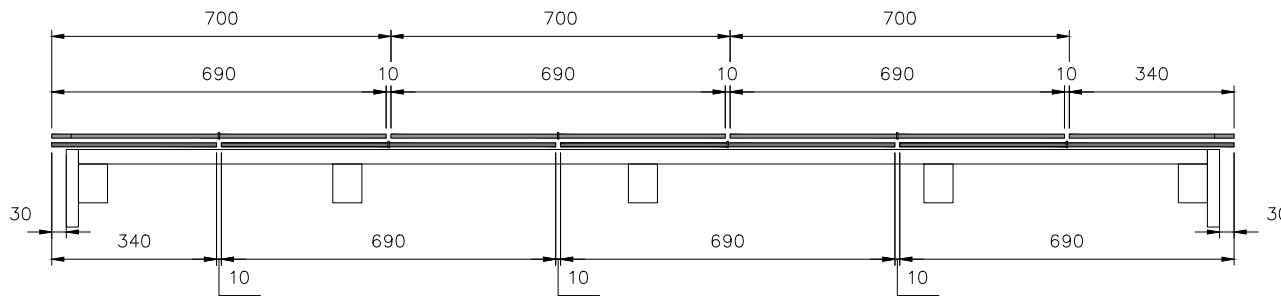
DESCRIPTION
Detail of layout with corridor
Super HC7

DATE
01.10.2025

6.3 DETAIL OF LAYOUT WITH OVERHANGING EDGE



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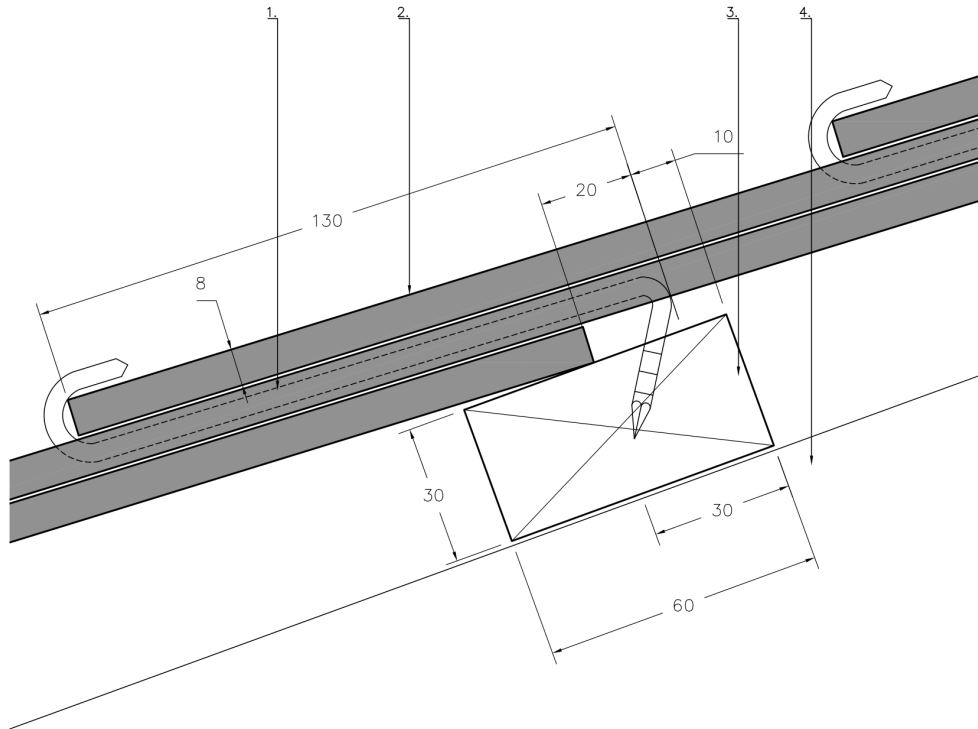
DESCRIPTION
Detail of layout with overhanging edge
Super HC7

DATE
01.10.2025

7. VARIA

7.1 DETAIL OF HOOK FASTENING, DOUBLE INSTALLATION

1. Hook – 130 mm × 3.4 mm
2. Solaris™ SUPERHC7 – 690 × 510 mm
3. Batten – 30 × 60 mm
4. Counter-batten – 60 × 80 mm



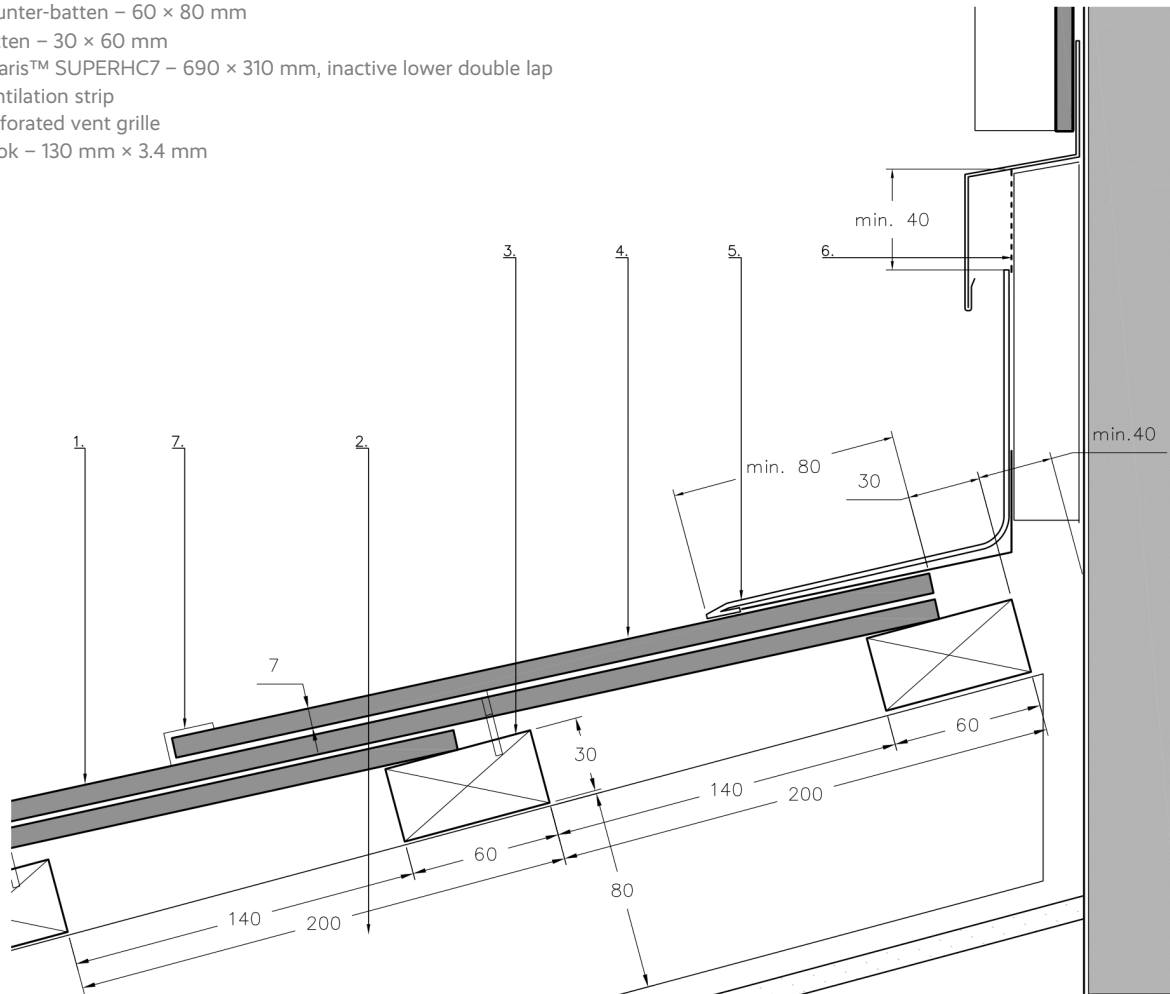
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DESCRIPTION
Detail of hook fastening,
double installation
SUPERHC7 CL, PB, HR
DATE
15.05.2024

7.2 DETAIL OF UPPER JOINT WITH TINSMITHING

1. Solaris™ SUPERHC7 – 690 × 510 mm
2. Counter-batten – 60 × 80 mm
3. Batten – 30 × 60 mm
4. Solaris™ SUPERHC7 – 690 × 310 mm, inactive lower double lap
5. Ventilation strip
6. Perforated vent grille
7. Hook – 130 mm × 3.4 mm



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DESCRIPTION

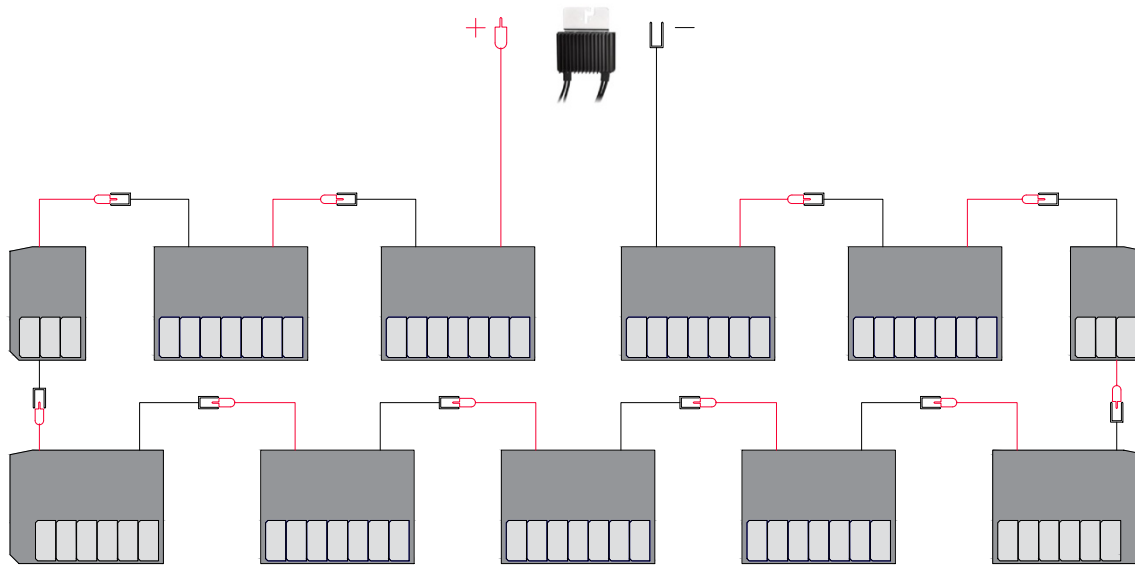
Detail of upper joint
with tinsmithing

SUPERHC7 CL, PB, HR

DATE
15.05.2024

ELECTRICAL DATA

WIRING DIAGRAM - TWO ROWS PER OPTIMISER



TWO ROWS PER OPTIMIZERS

Measurement instructions

1 loop contains:

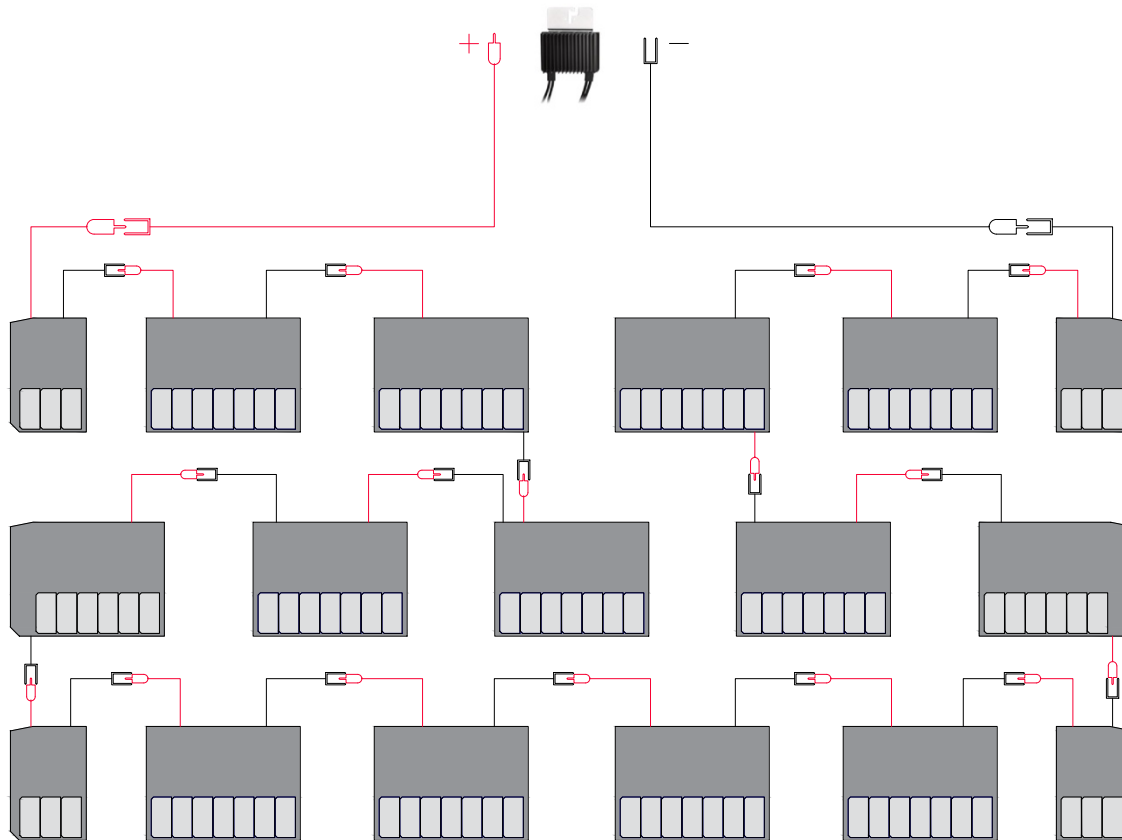
- approximately 15 to 20 tiles
- minimum 5-6 tiles

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



THREE ROWS PER OPTIMIZERS WITH
EXTENSION CABLE

Measurement instructions

1 loop contains:

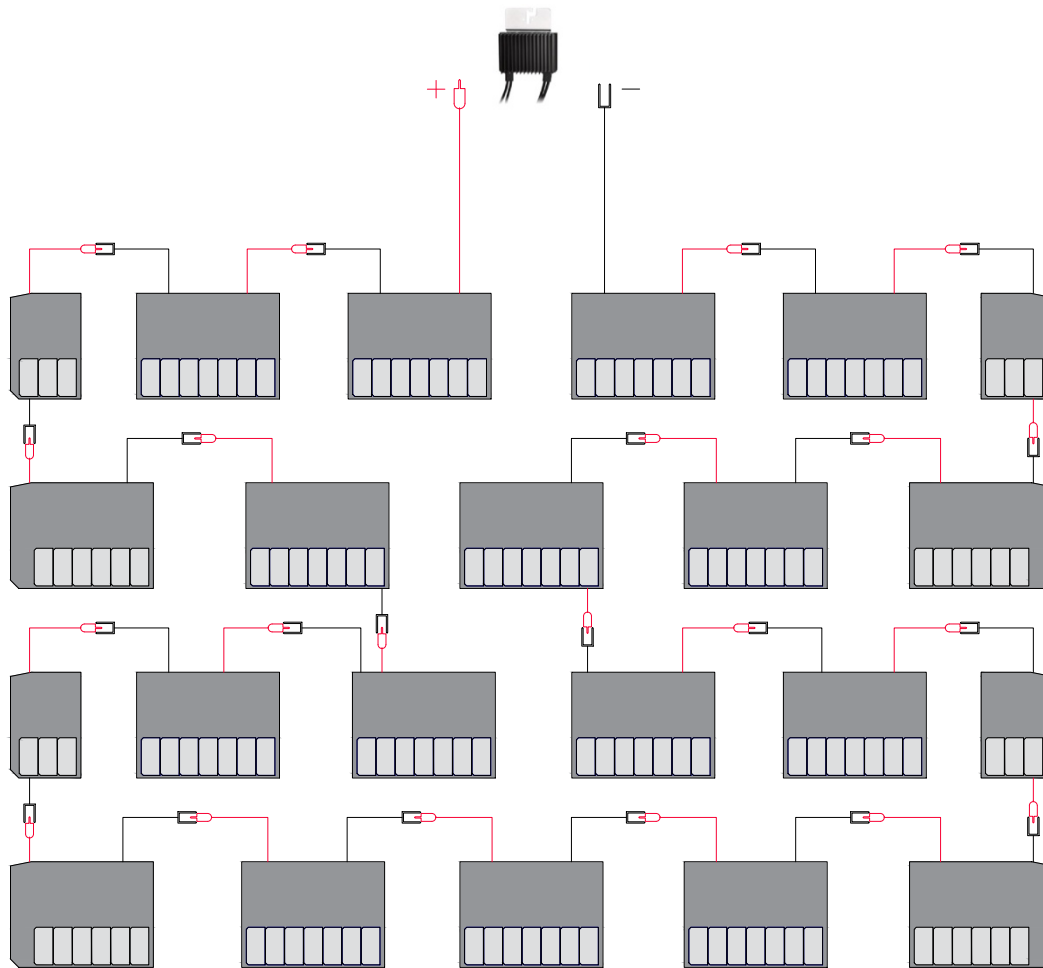
- approximately 15 to 20 tiles
- minimum 5-6 tiles

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



FOUR ROWS PER OPTIMIZERS

Measurement instructions

1 loop contains:

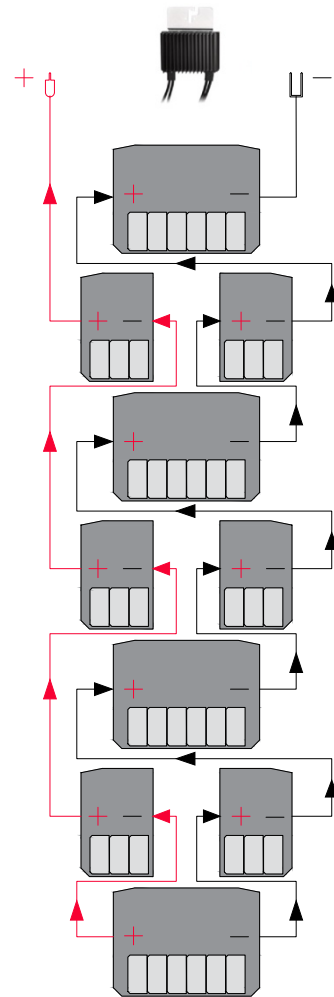
- approximately 15 to 20 tiles
- minimum 5-6 tiles

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



WIRING DIAGRAM – ONE TILE WIDE

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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