SOLARSTONE

Solar Power Set™

Quick Installation Guide

with Benders Palema 2-Barrel tiles

Version: 1.2 (EN)
Release date: 01.06.2026

Roof.
Design.
Power.

Table of Contents

Disclaimer

This guide is intended to provide comprehensive instructions for installing the SOLARSTONE Solar Full Roof™ Power Set. If you have any questions or concerns that are not addressed in this document, please do not hesitate to reach out to the SOLARSTONE technical support team at **support@solarstone.com**

It is imperative that you adhere to all safety precautions outlined in this guide as well as any applicable local regulations. Please note that the installation of the Solar Full Roof™ Power Set requires professional skills, knowledge, and should only be carried out by qualified personnel. To ensure a successful installation, please read this manual in its entirety before beginning the installation process. It is essential that the installation personnel are familiar with the mechanical and electrical requirements of the system.

SOLARSTONE makes every effort to ensure that the information provided in this manual is accurate, complete, and up to date. However, the installation and use of SOLARSTONE Solar Full Roof™ Power Set products must always comply with local laws, building codes, regulations, and standards applicable in the installation location.

SOLARSTONE assumes no responsibility or liability for any damages, losses, or legal consequences arising from: Failure to comply with local regulations, permitting requirements, or safety codes; misrepresentation, misuse, or misinterpretation of this manual; unauthorized modifications to the system design or installation process; work performed by unqualified or uncertified individuals or entities.

It is the responsibility of the installer, contractor, and end user to consult with local authorities, certified professionals, and relevant regulatory bodies before proceeding with the installation.

By using this manual, you acknowledge and agree that SOLARSTONE shall not be held liable for any consequences resulting from non-compliance with legal or regulatory requirements.

Safety & Protective Equipment

The safety of the workers and individuals on the job is paramount to finishing the roof installation correctly. Always protect yourself with protective equipment and abide by all safety precautions in this guide and local regulations. It is mandatory to use safety harness equipment, helmet, gloves, safety glasses, and other personal protective equipment.

SOLARSTONE will not take any responsibility for safety nor health issues that have come up during the installation.

Overview

Solar Full Roof™ Power Set is available in three sizes, each with a fixed module layout:

- Solar Power Set™ **(S) 5.16 kWp**
  12 x Solar Full Roof™ BIPV modules | Columns x Rows: 4 x 3
  Area measurements: 7060 x 3475 mm | Active area: 24.53 m^2

- Solar Power Set™ **(M) 6.88 kWp**
  16 x Solar Full Roof™ BIPV modules | Columns x Rows: 4 x 4
  Area measurements: 7060 x 4615 mm | Active area: 32.58 m^2

- Solar Power Set™ **(L) 8.60 kWp**
  20 x Solar Full Roof™ BIPV modules | Columns x Rows: 5 x 4
  Area measurements: 8815 x 4615 mm | Active area: 40.68 m^2

Each set is pre-packaged with all components needed for its layout. Components are labeled for easy identification.

Package Identification & Handling

The box side displays a visual overview of all available Solar Power Set™ configurations. The delivered set is clearly marked in the checkbox above the corresponding layout, enabling quick and clear identification.

Opening instructions: Locate the sides labeled “OPEN HERE” and open from these sides only. These labels indicate the correct opening direction for safe, controlled unpacking and easy access to all components without risk of parts falling out or being damaged.

Important Notes:

- Quantities are fixed for each set size in **Table 1** – no calculations required.
- Components are grouped and labeled to match the set.
- Before assembly, check that all components are present.
- If anything is missing or mislabeled, do not start assembly – contact support.

Figure 1 – Solar Power Set™ package

Included Components

Table 1 - Component list and essential quantities inside Solar Power Set™ package

Code	Component Name	Qty in S	Qty in M	Qty in L
C1	Flexible Flashing Tape	1,6 rolls	1,6 rolls	2 rolls
C2-1	Joint Flashing First Row	2 pcs	2 pcs	2 pcs
C2-2	Joint Flashing Regular Row	2 pcs	4 pcs	4 pcs
C2-3	Joint Flashing Last Row	2 pcs	2 pcs	2 pcs
C3	First Row Flashing	4 pcs	4 pcs	5 pcs
C4	First Row Clamps	16 units	16 units	20 units
C5	BIPV-module	12 modules	16 modules	20 modules
C6	Regular Row Clamps	24 units	36 units	45 units
C7	Bottom Joint Flashing	3 pcs	3 pcs	4 pcs
C8	Right Corner Flashing	1 pc	1 pc	1 pc
C9	Left Corner Flashing	1 pc	1 pc	1 pc
C10	Top Transition Flashing	4 pcs	4 pcs	5 pcs
C11	Top Joint Flashing	3 pcs	3 pcs	4 pcs
C12	Flashing Hook	24 units	32 units	32 units
C13	Roofing screw with drill point, 4.8x28	1 box	1 box	1 box
C14-1	Wood screw countersunk head, 5.0x40	1 box	1 box	1 box
C14-2	Wood screw countersunk head, 5.0x90	2 boxes	2 boxes	2 boxes
C15	Cable Kit 25 m	1 unit	1 unit	1 unit
C16	Extension Cable	20,4 lm	27,2 lm	34 lm
C16	Conduit Clip	25 units	25 units	25 units
C17	Self-adhesive sealing collar	1 pc	1 pc	1 pc
C18	Grounding Clamp	34 units	42 units	50 units
C19	Grounding Cable 80 cm	13 units	17 units	21 units
C20	Triangular sealing strip	23,5 lm	28 lm	30 lm

Materials Provided by the Installer

Table 2 - Material list and essential quantities provided by system installing partner

Code	Component Name	Qty for S	Qty for M	Qty for L
A1-1	Timber batten 45x95 mm for Modules	16 lm	24 lm	30 lm
A1-2	Timber batten 22x95 mm for Modules	8 lm	8 lm	10 lm
A2-1	Timber batten 22x95 mm for Flashings	12 lm	16 lm	20 lm
A3-1	Timber batten 45x95 mm for Installation Support (optional)	24 lm	32 lm	40 lm

Installation

For guidance, all installation visuals show an L **size** Solar Power Set™ example. The same steps and principles apply to any other Solar Power Set™ variation.

Preparation

Before any installation, ensure that all provided documents are complete and up to date, including the installation manual and the delivered set of components.

Project-specific documentation, such as drawings or structural calculations, is not included in this package. For any additional questions, please contact your local SOLARSTONE partner.

Tools

Necessary tools for installation can include:

- Cordless screwdriver with Torx T25 bit inserts
- Measuring tape
- Chalk line tools
- Grinder tools
- Circular saw
- Roofing blade or utility knife
- Tacker or stapler
- Hammer
- Sheet metal scissors

Electrical tools can include:

- Digital multimeter
- Insulation tester
- Clamp meter
- MC4 Solar PV Cable Crimping tool kit with stripper, cutter, spanner, and oxide inhibitor for wiring connections

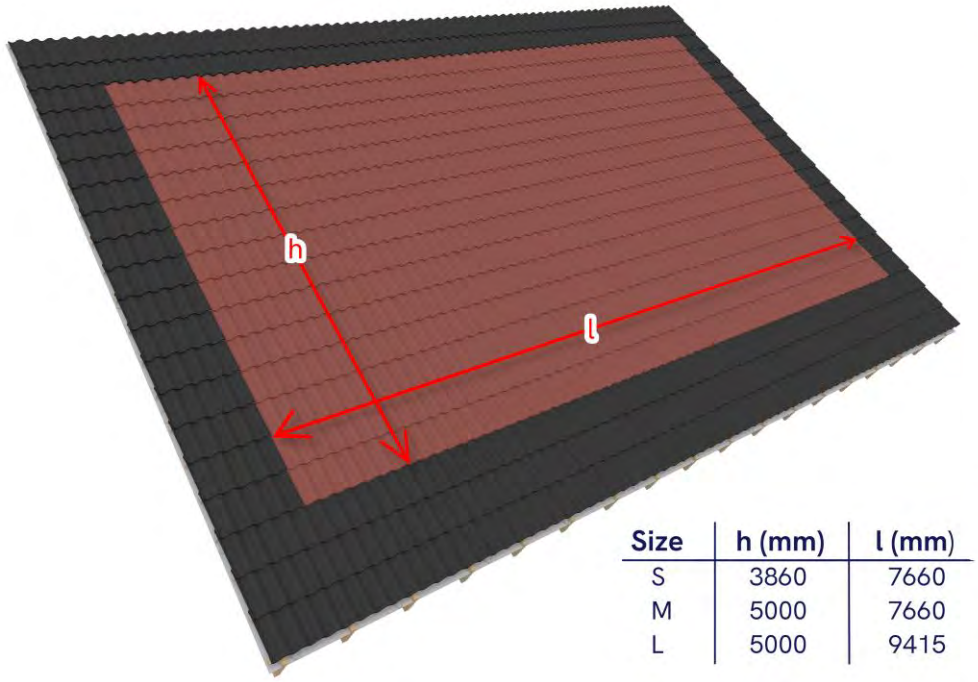
Underlayment

SOLARSTONE strongly recommends choosing underlayment that cover:

- 120 °C working temperature limit (short-term).
- High UV resistance (for at least 4 weeks).
- Considered suitable option for solar roofs.
- Water Resistance test W1.

Installation Step 1.1 | Roof Tiles

- Measure the roof area for the Solar Power Set™ installation and do not install any tiles there.
- If tiles are already in that area, measure the area and remove existing tiles before installation.
- Do not dispose of all removed tiles immediately. Keep approximately 100 tiles for possible edge and finishing work.
- Leave a clearance equal to at least one roof tile on both sides and at the top. **Note:** this clearance is already included in the dimensions shown.



Size	h (mm)	l (mm)
S	3860	7660
M	5000	7660
L	5000	9415

Legend

Roof Tile

Install / keep

Do not install / to be removed

Notes

1. The tile-free area is project-specific and depends on the selected Power Set layout.
2. Dimensions shown represent the minimum required.

Installation Step 1.11 | Underlayment replaced

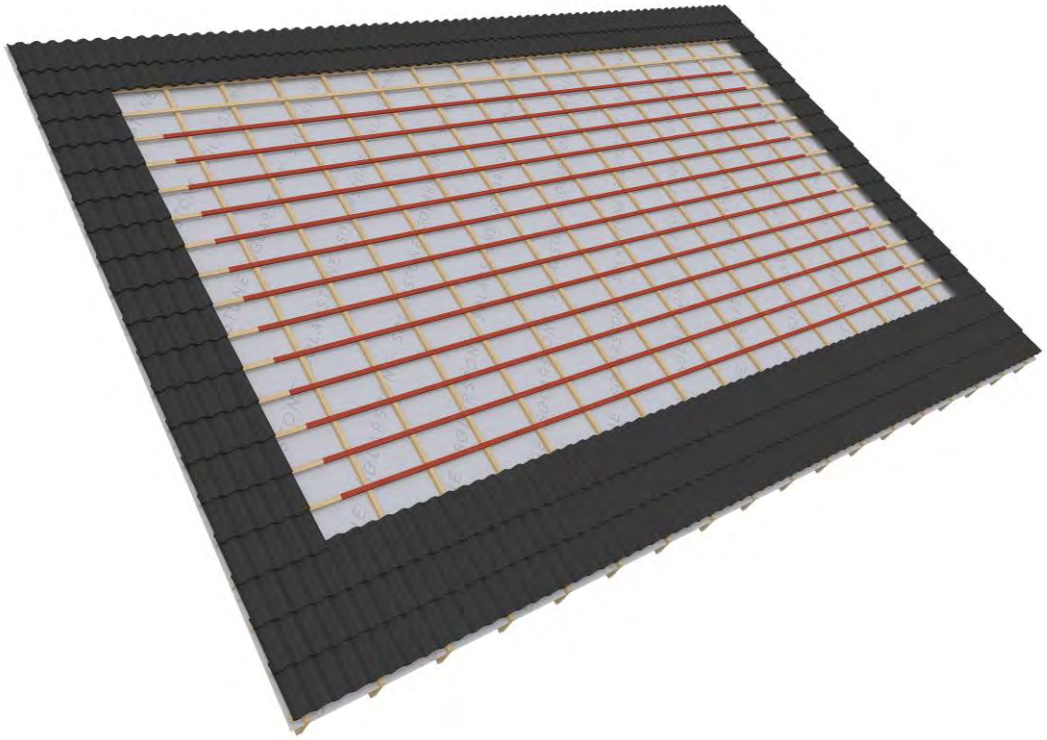
- Install new underlayment according to the manufacturer's instructions.
- If the underlayment is replaced, continue from the area reserved for the Power Set by marking battens according to **Installation Step** 1.4 , skipping **Installation Step** 1.3 **.**

Installation Step 1.12 | Underlayment not replaced

- If the underlayment is not replaced, continue straight to **Installation Step** 1.3 **.**

Installation Step 1.3 | Existing and Conditional Battens

- Remove existing battens only if they interfere with battens required for the Solar Power Set™.
- See **Installation Step** 1.5 to determine whether any removal is necessary.



Legend

Timber batten

Existing battens: remain in place
No battens: install as required

Timber batten

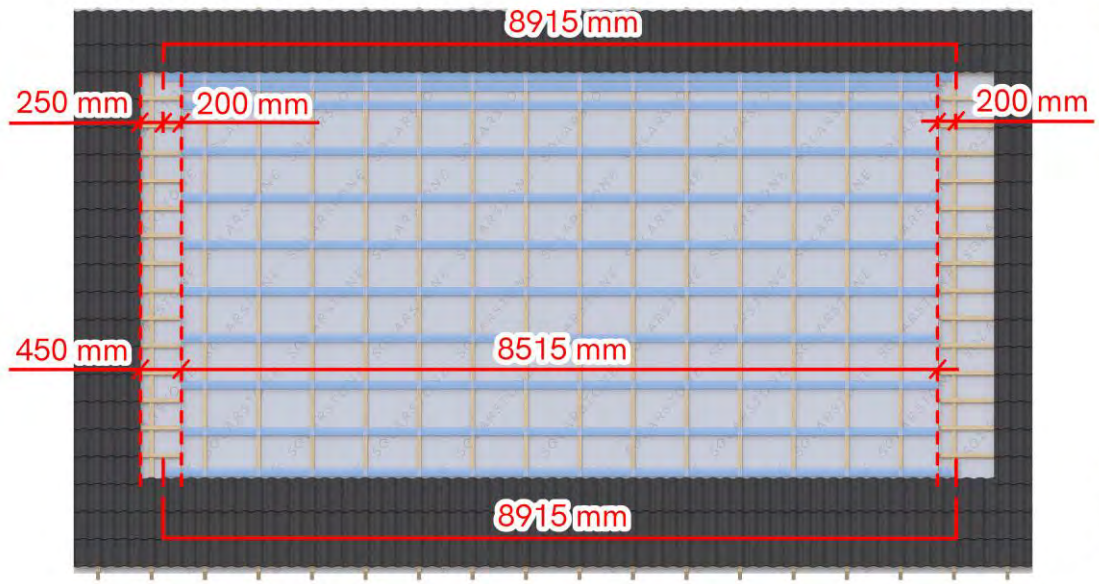
Existing battens: remove only if they interfere with projected Power Set battens; otherwise, leave in place.
No battens: do not install

Notes

1. Use Step 1.4 to check planned Power Set batten positions.
2. Refer to Step 1.5 to determine which existing battens, if any, must be removed.

Installation Step 1.4 | Power Set Batten Installation Reference Lines

- Mark battens start and end positions as shown in drawing.
- Proceed with the installation of battens after marking is complete.



Legend

Indicative Battens
To be installed

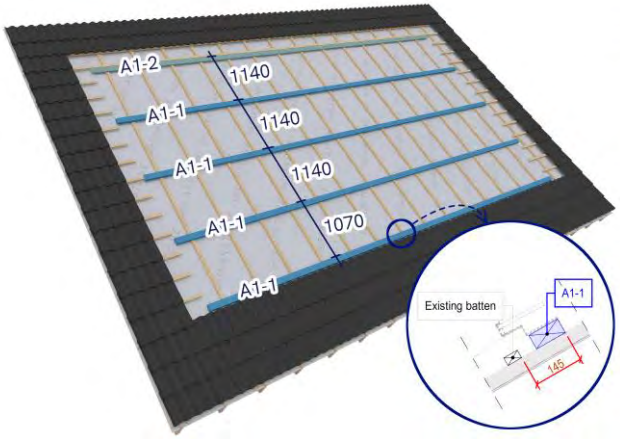
Chalk lines

Notes

1. Use chalk line tool to mark batten positons before installation.

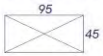
Installation Step 1.5 | Installation of Power Set Battens

- Install Timber battens A1-1 and A1-2 for modules.

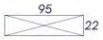


Legend

A1-1
Timber batten 45x95 mm



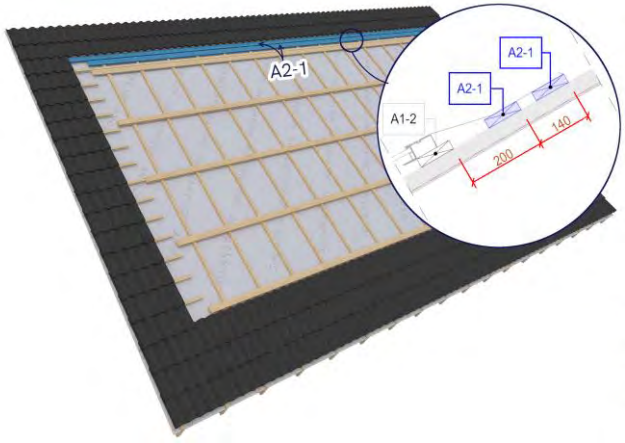
A1-2
Timber batten 22x95 mm



Notes

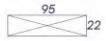
1. Quantities shall be determined in accordance with Table 2.
2. Timber batten profiles are project-specific and may vary.

- Install timber battens A2-1 for flashings.



Legend

A2-1
Timber batten 22x95 mm

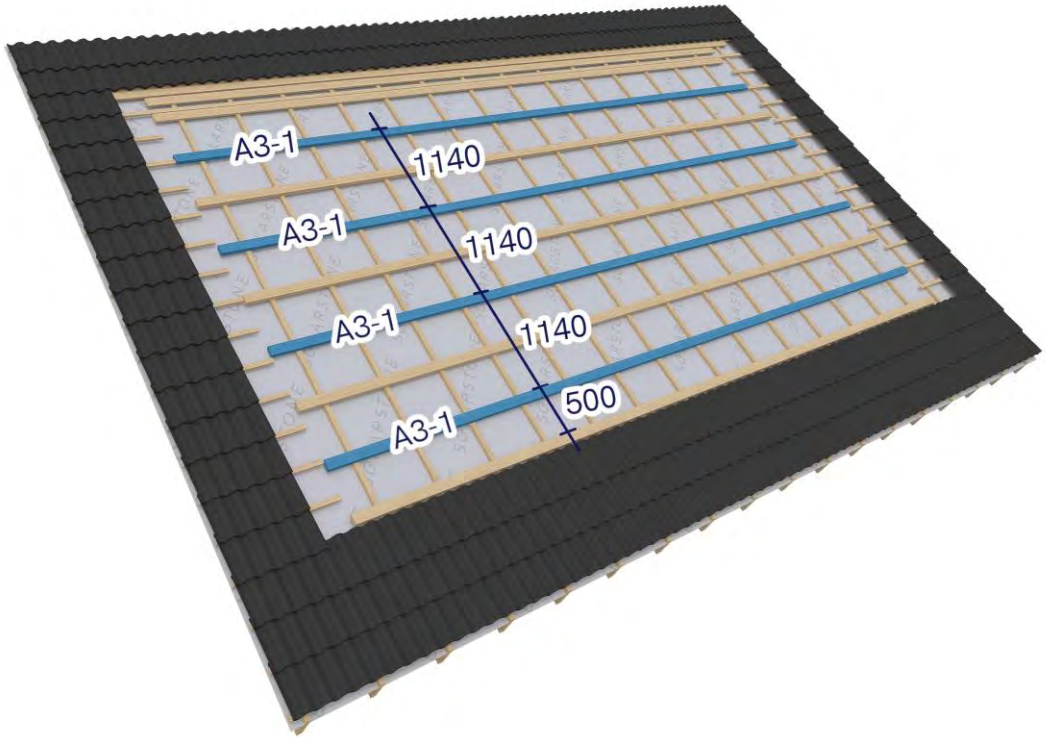


Notes

1. Quantities shall be determined in accordance with Table 2.
2. Timber batten profiles are project-specific and may vary.

Installation Step 1.51 | Installation of Power Set Support Battens

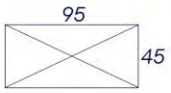
- ***Note:*** *This step is only required where there are no existing battens between A1-1 and A1-2 battens installed in* **Installation Step** 1.5 .
- Install timber battens A3-1 for installing. These battens are used only to support movement and working on the roof during installation.



Legend

A3-1

Timber batten 45x95 mm

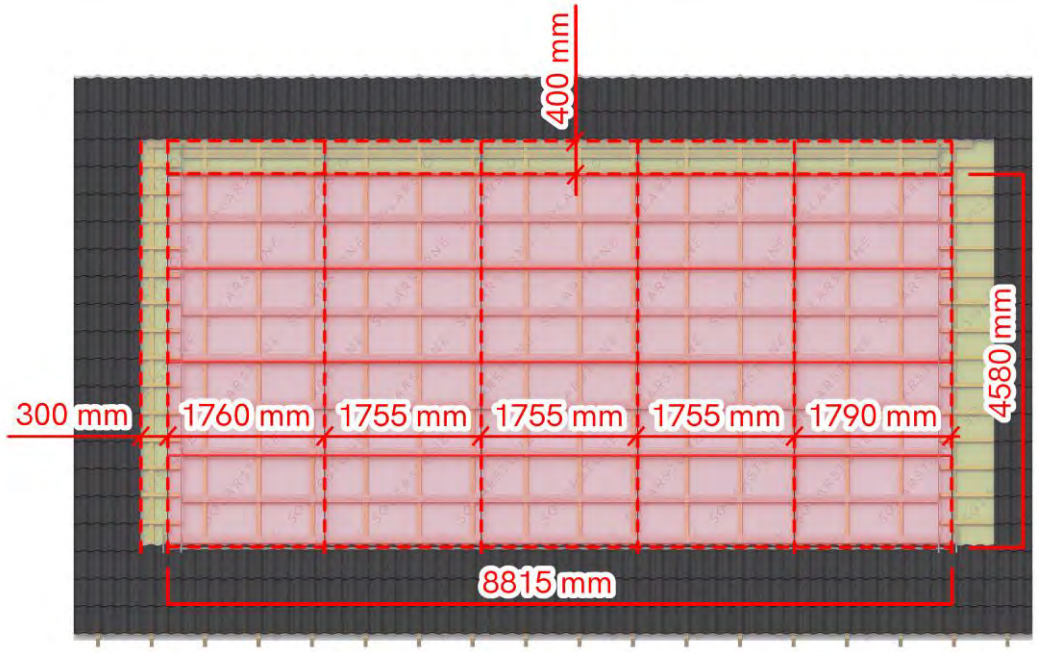


Notes

1. Quantities shall be determined in accordance with Table 2.
2. Timber batten profiles are project-specific and may vary.

Installation Step 1.6 | Power Set Installation Reference Lines

- Mark modules start and end positions as shown in drawing.
- Proceed to Solar Power Set™ components installation after marking is complete.



Legend

Solar Module area

Installation clearance area

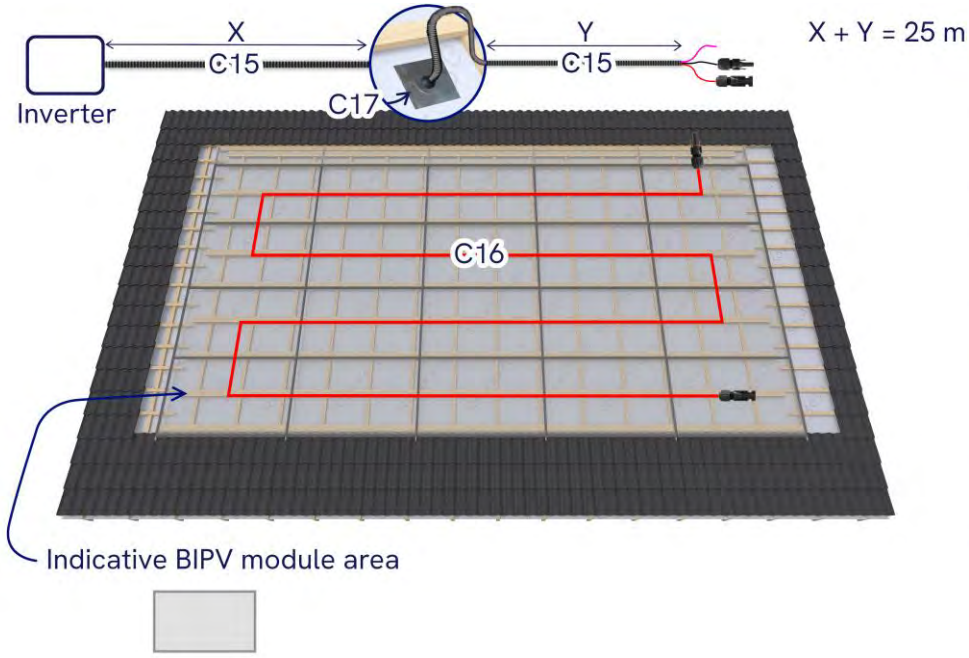
Chalk lines

Notes

1. Use chalk line tool to mark panel layout lines before installation.

Installation Step 1.7 | Cable Routing Phase 1

- Install the 25 m Cable Kit (code C15) in conduit from the inverter to the roof.
- Route the Cable Kit through the sub roof using the self-adhesive sealing collar (code C17) supplied in the Solar Power Set™.
  Ensure the collar is properly installed and watertight.
- The Cable Kit includes three cables:
  - DC string cable with MC4 connector (male) for later connection to the last BIPV-module of the group.
  - DC string cable with MC4 connector (female) for the first BIPV-module of the group, which is connected via the DC extension cable (code C16).
  - Grounding cable.
- Route the Extension cable (code C16) to an S-pattern from top to bottom along the module rows.
  Run it along the battens and make sure it clearly reaches the first BIPV-module of the group.
- Complete all cable routes shown before moving forward with the installation.



Legend

C15
Cable Kit 25 m

C16
Extension Cable

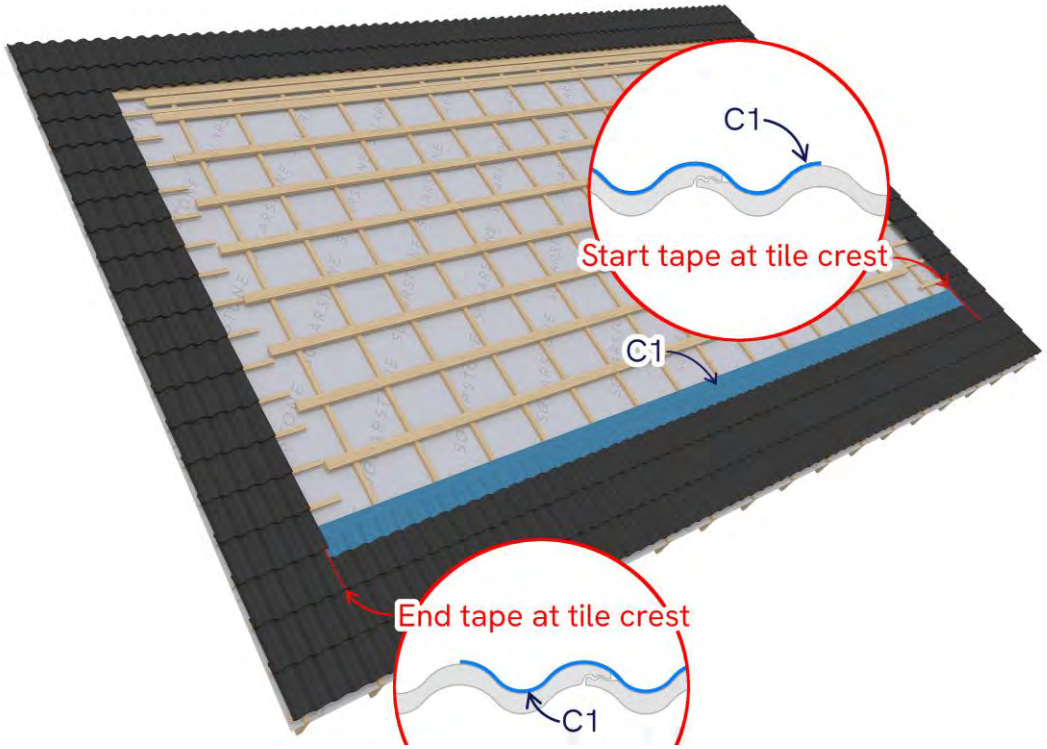
C17
Self-adhesive sealing collar

Notes

1. It is mandatory to use only inverters with arc fault detection features (AFCI).

Installation Step 2.1 | Flexible Flashing Tape

- Add Flexible Flashing Tape (code C1) on to the first Timber batten for Flashing and over to the roof tiles.
- Make sure to remove any debris, old flashing, or dirt to ensure proper adhesion. A wire brush or cloth can be used for cleaning.
- For profiled tiles the overlap of tape must follow over the next hip to the end of the water channel. Use the roller to press it firmly to the tiles to ensure tight connection.



Legend

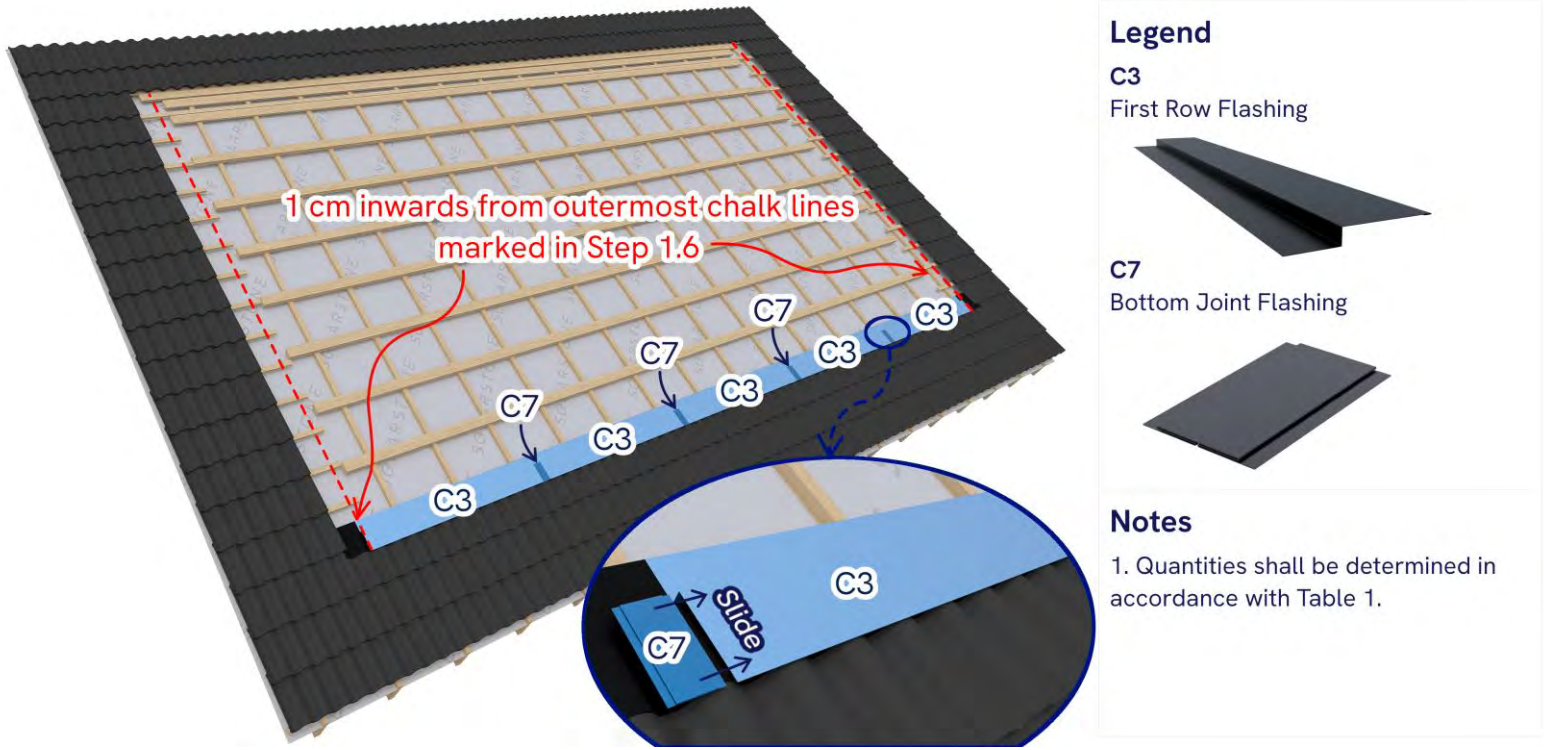
C1
Flexible Flashing Tape

Notes

1. Quantities shall be determined in accordance with Table 1.

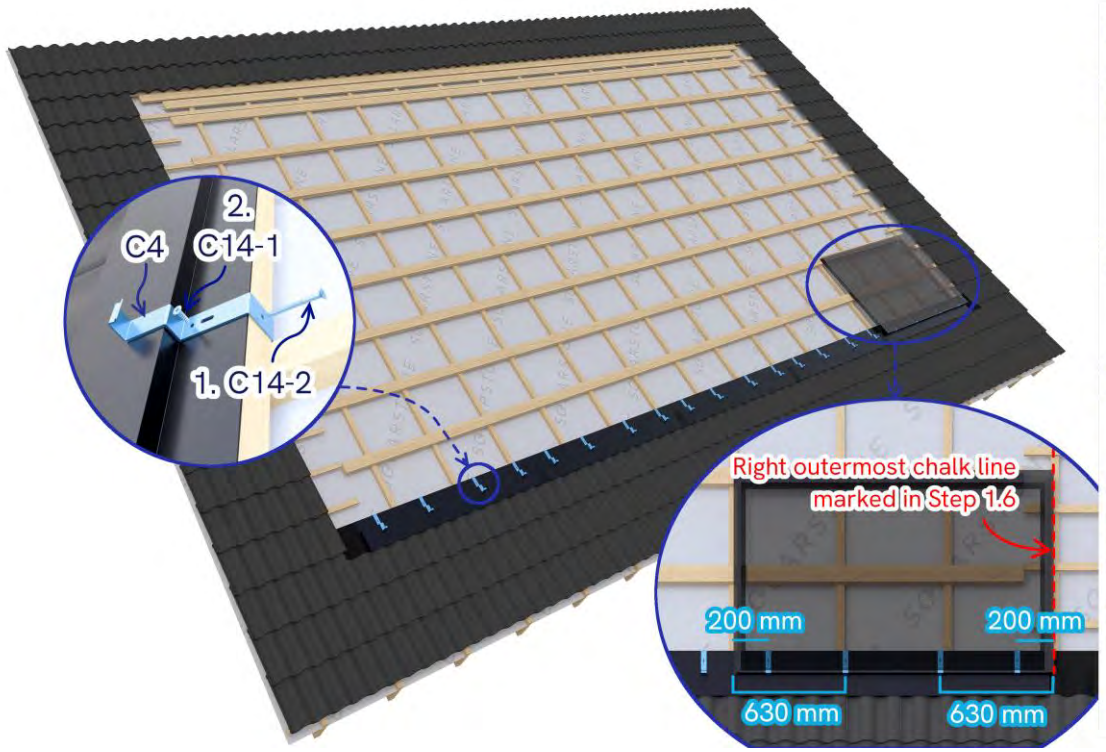
Installation Step 2.2 | First Row Flashings

- Install First Row Flashing (code C3) starting 1 cm inwards from the left outermost chalk line marked in **Installation Step** 1.6
  Use Bottom Joint Flashings (code C7) between each flashing to ensure a tight connection.
- Ensure that it entirely covers Flexible Flashing Tape underneath.
- Installation is correct when the last First Row Flashing ends 1 cm inwards from the right outermost chalk line marked in **Installation Step** 1.6 .



Installation Step 2.3 | First Row Clamps

- Place First Row Clamps (code C4) according to the picture. Each BIPV-module in the first row requires four clamps.
- First Row Clamps are positioned 200 mm and 630 mm inwards from both sides of the module.
- Use 2 wood screws with countersunk head (code C14-1 and C14-2) for fastening the clamp. Install C14-2 first, then C14-1.



Legend

C4
First Row Clamps

C14-1
Wood screw countersunk head, 5.0x40

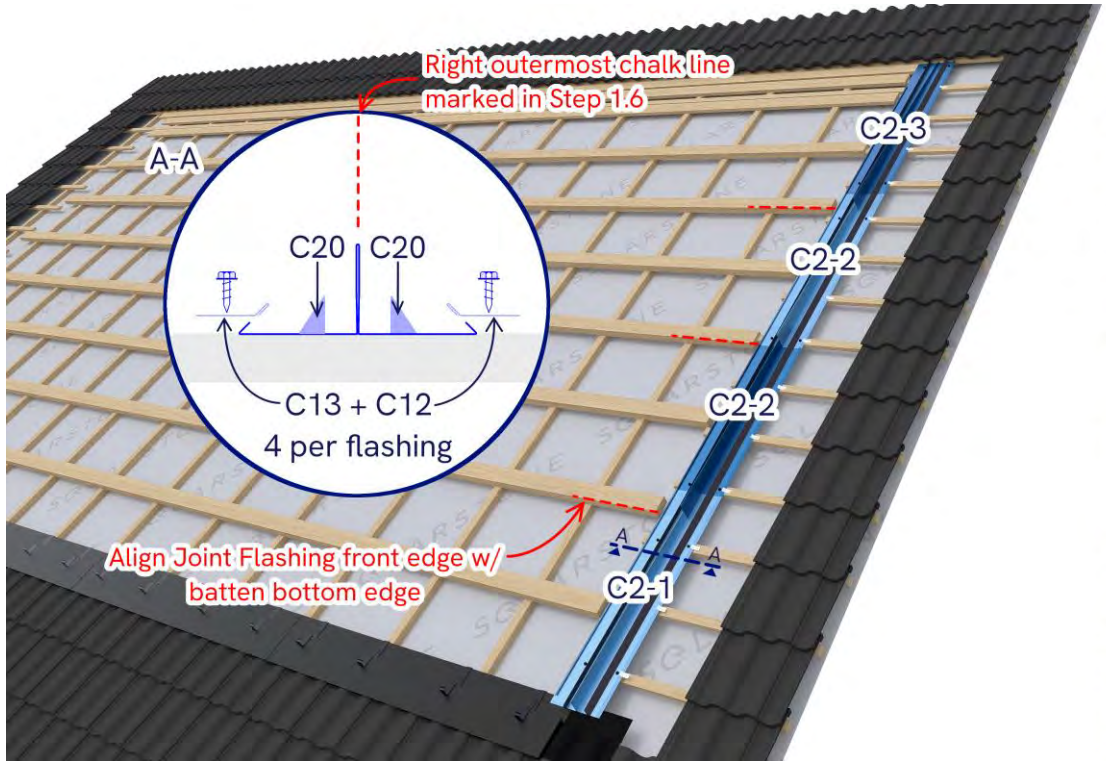
C14-2
Wood screw countersunk head, 5.0x90

Notes

1. Quantities shall be determined in accordance with Table 1.

Installation Step 2.4 | Joint Flashings Right Side

- Install Joint Flashings (code C2-1; C2-2; C2-3) according to the drawing, aligning the front edge of each flashing with the module batten bottom edge.
- Fix flashings with fixing hooks but allow flashings to be moved slightly up or down later to align with the modules.
- Place first flashing as close as possible to the flexible flashing tape without risking damage to the tape.
- Fix each joint flashing with four Fixing Hooks (code C12): two at the top (one on each side of the flashing) and two at the bottom (one on each side) with roofing screws (code C13).
- Install Triangular sealing strip (C20) along the full length of the joint flashing on both sides.



Legend

C2-1/C2-2/C2-3
Joint Flashing First Row /
Joint Flashing Regular Row /
Joint Flashing Last Row

C13 + C12
Roofing screw with drill point +
Flashing Hook

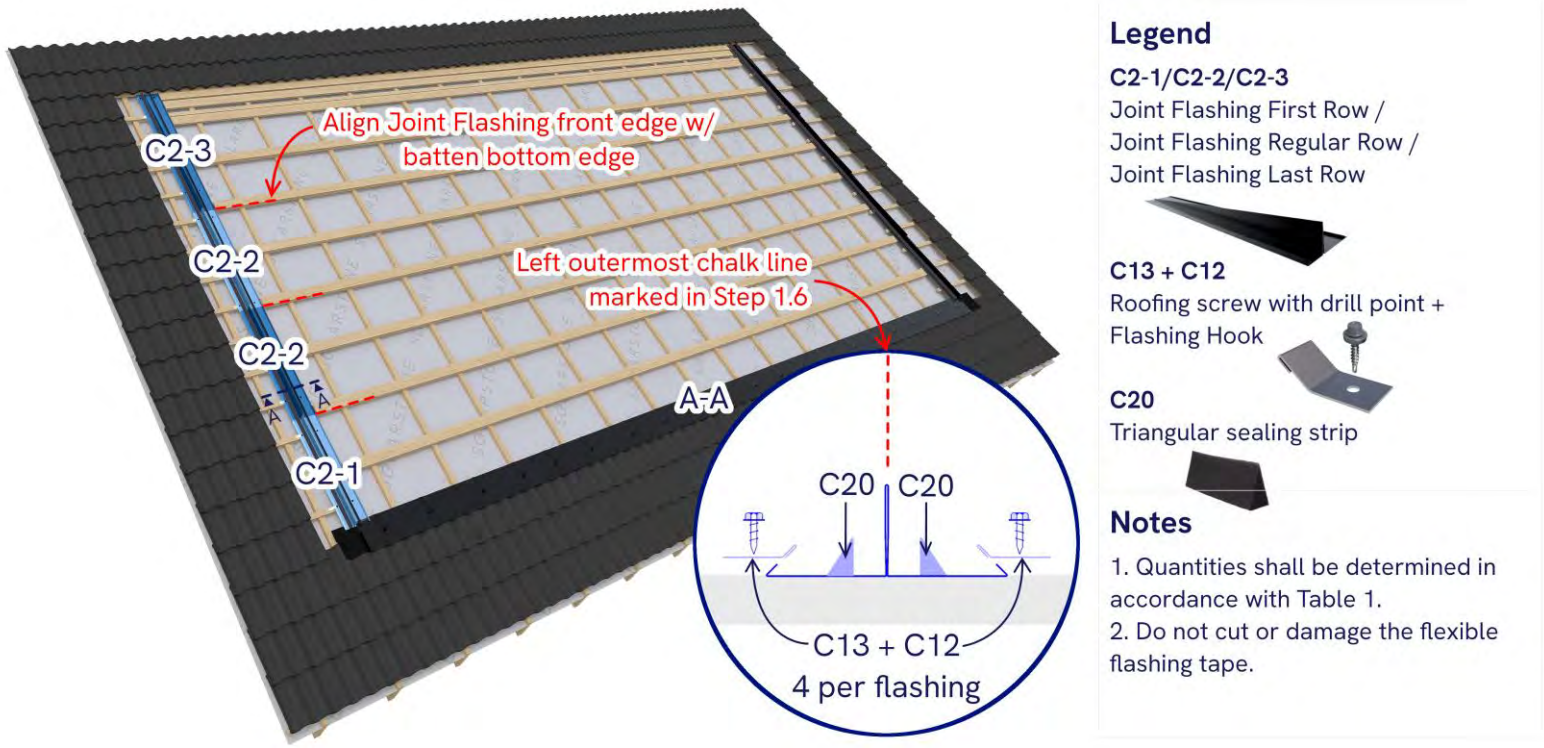
C20
Triangular sealing strip

Notes

1. Quantities shall be determined in accordance with Table 1.
2. Do not cut or damage the flexible flashing tape.
3. Leave space for right-side roof tile column installed later.

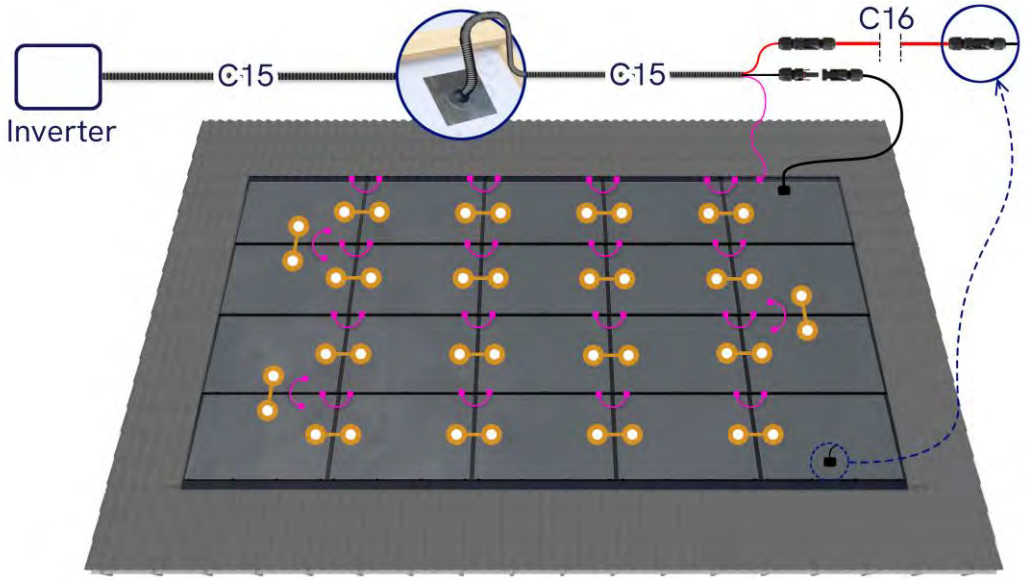
Installation Step 2.5 | Joint Flashings Left Side

- Install Joint Flashings (code C2-1; C2-2; C2-3) according to the drawing, aligning the front edge of each flashing with the module batten bottom edge.
- Fix flashings with fixing hooks but allow flashings to be moved slightly up or down later to align with the modules.
- Place first flashing as close as possible to the flexible flashing tape without risking damage to the tape.
- Fix each joint flashing with four Fixing Hooks (code C12): two at the top (one on each side of the flashing) and two at the bottom (one on each side) with roofing screws (code C13).
- Install Triangular sealing strip (C20) along the full length of the joint flashing on both sides.



Installation Step 2.6 | Cable Routing Phase 2

- Use only approved MC4 connectors. Do not mix manufacturers.
- Ensure string voltage and current remain within system limits for local temperature conditions.
- All electrical work must be carried out by a certified electrician only.
- Do not leave connectors lying on underlay.
- Always refer to international, national and local solar installation guidelines, PV module manuals and best practices.



Legend

Panel-to-panel connection

C15
Cable Kit 25 m

C16
Extension Cable

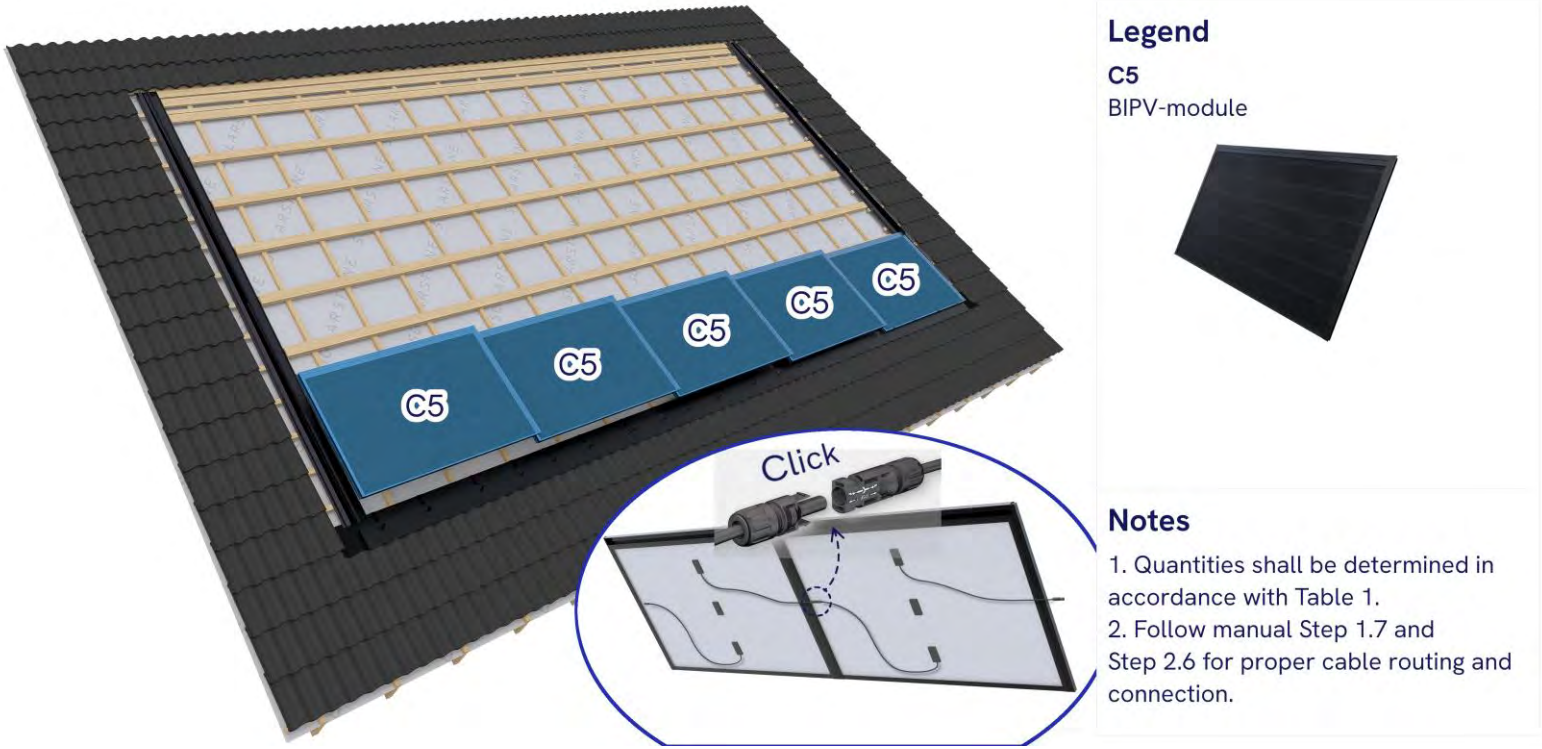
C19
Grounding Cable 80 cm

Notes

1. It is mandatory to use only inverters with arc fault detection features (AFCI).
2. Cable Kit installation (code C15) and Extension cable (code C16) routing completed in Step 1.7.

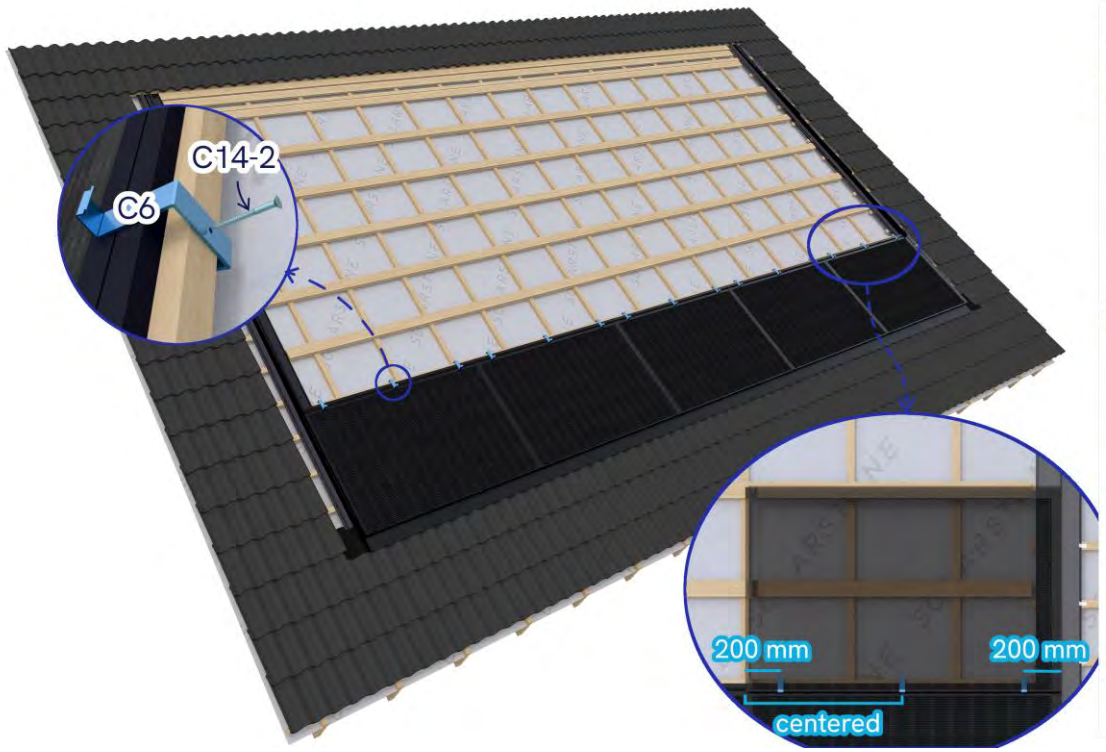
Installation Step 2.7 | First Row Modules

- Solar Full Roof™ BIPV-modules (code C5) are installed from right to left until the completion of first row.
- Follow the regular solar installation principles and manufacturer's instructions when connecting the solar cables.



Installation Step 2.8 | Regular Row Clamps

- Continue installing the Regular Row Clamps (code C6).
- For a standard installation 3 clamps are required per module. Place one clamp centered and the other two 200 mm from both sides of the module.
- Fix each clamp to the batten using a countersunk wood screw, 5.0x90 mm (code C14-2) through the clamp hole.



Legend

C6
Regular Row Clamps

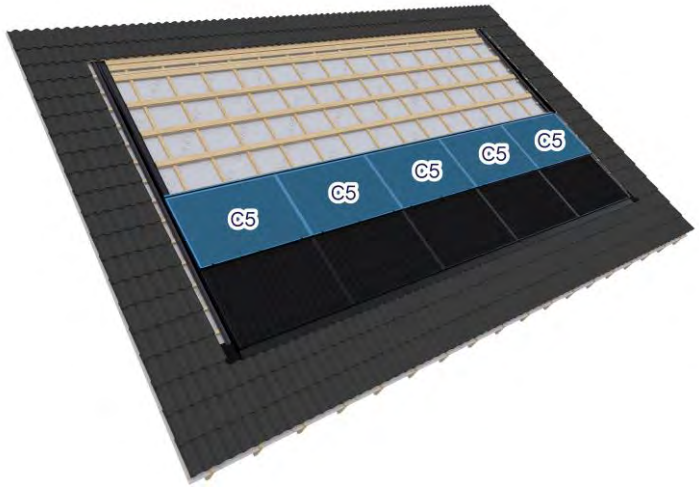
C14-2
Wood screw countersunk head, 5.0x90

Notes

1. Quantities shall be determined in accordance with Table 1.

Installation Step 2.9 | Continuation

- Continue Solar Full Roof™ BIPV-module installation following the same principles until reaching the final row.

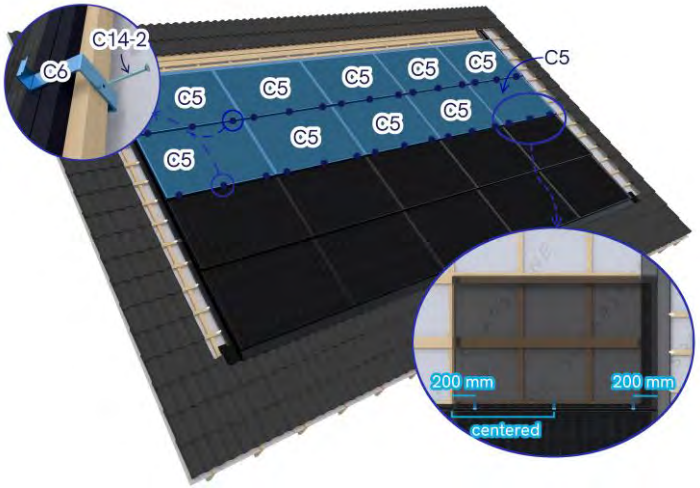


Legend

C5
BIPV- module

Notes

1. Quantities shall be determined in accordance with Table 1.



Legend

C5
BIPV-module

C6 •
Regular Row Clamps

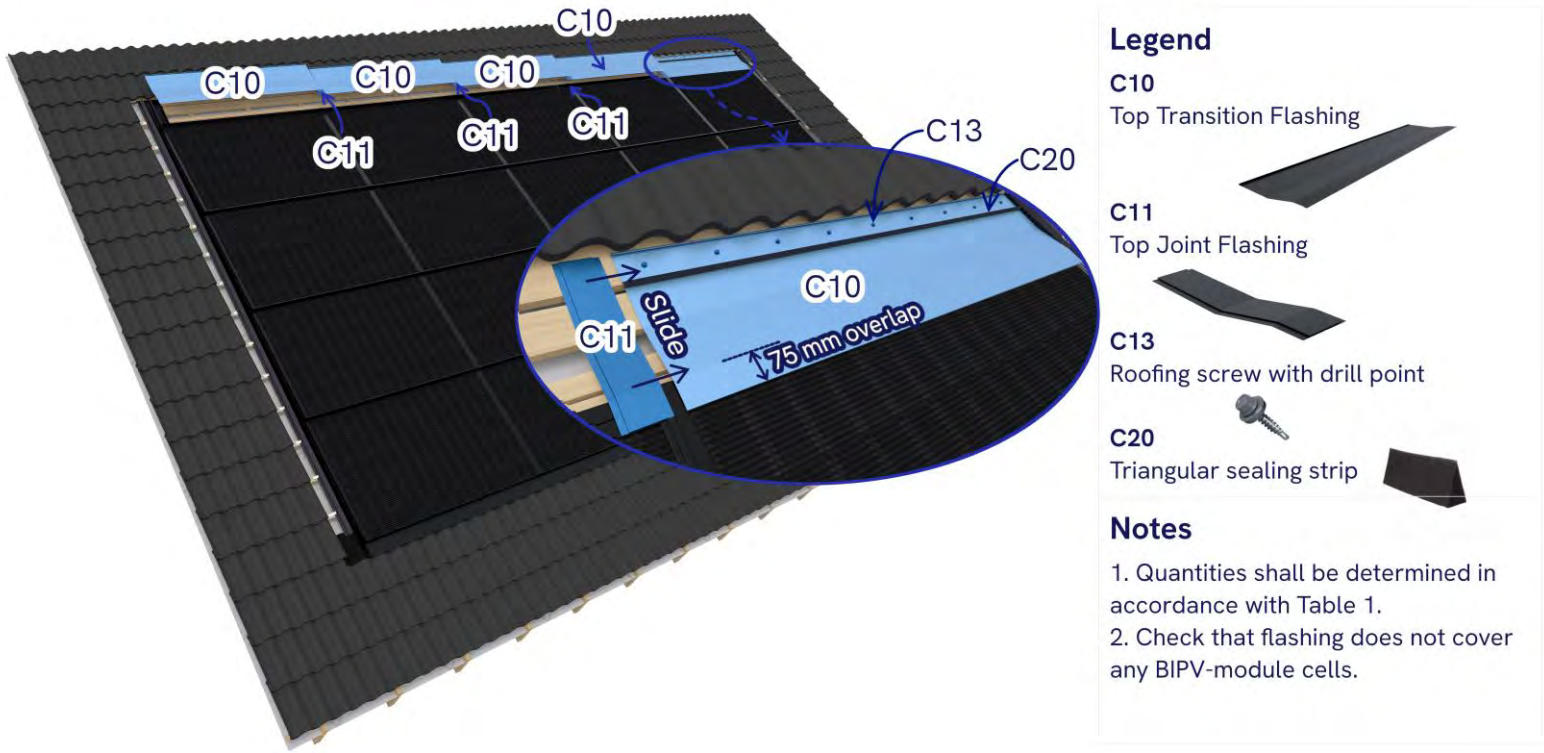
C14-2
Wood screw countersunk head, 5.0x90

Notes

1. Quantities shall be determined in accordance with Table 1.

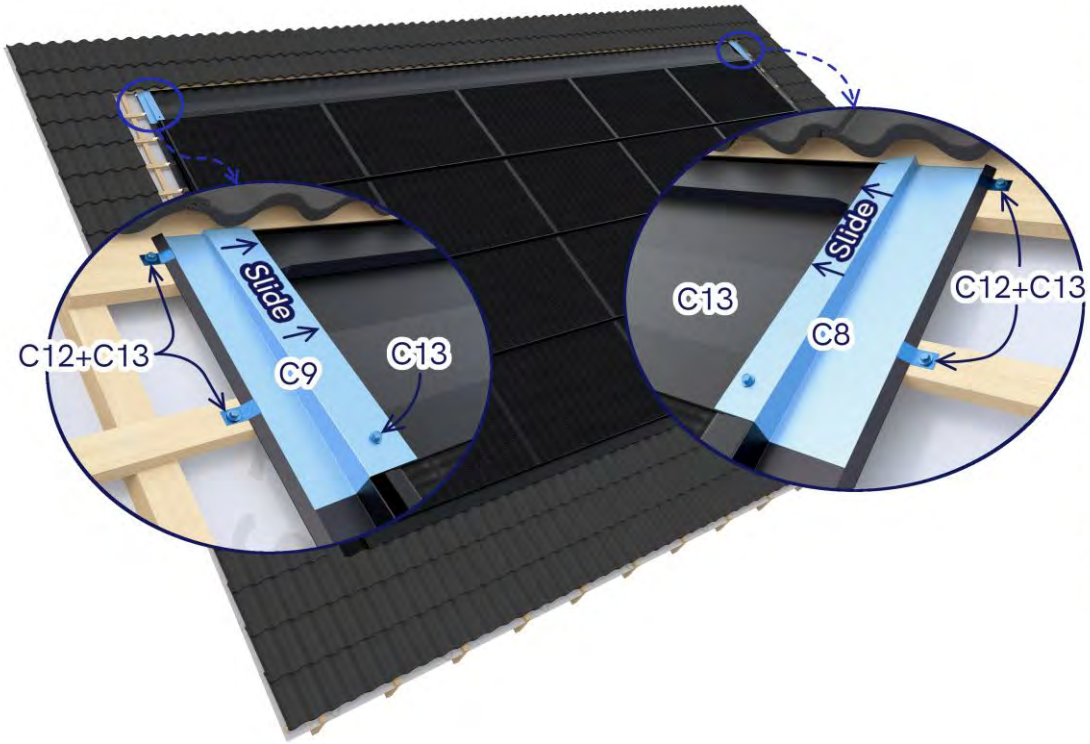
Installation Step 2.10 | Top Flashings

- Install Top Transition Flashing (code C10) from right to left. Use Top Joint Flashings (C11) between each flashing to ensure a tight connection.
- Position the first one so that its right side aligns against the Right Joint Flashing. Installation is correct when the Top Joint Flashings centerline matches the BIPV-module frame connection below.
- Secure every Top Transition Flashing with roofing screws (code C13) cc 200 mm.
- Install Triangular sealing strip (C20) along the full length of the Top flashing.



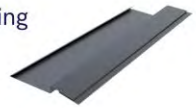
Installation Step 2.11 | Top Corner Flashings

- Install Right Corner Flashing (code C8). Slide it onto the side edge of the Top Transition Flashing (code C10) using the side channel of C8. Use Roofing screw with drill point (code C13) to fix it through the Top Transition Flashing.
- Install Left Corner Flashing (code C9). Slide it onto the side edge of the Top Transition Flashing (code C10) using the side channel of C8. Use Roofing screw with drill point (code C13) to fix it through the Top Transition Flashing.
- Fix both Corner Flashings from the side using Fixing Hooks (code C12) with roofing screws (code C13).



Legend

C8
Right Corner Flashing



C9
Left Corner Flashing

C12
Flashing Hook

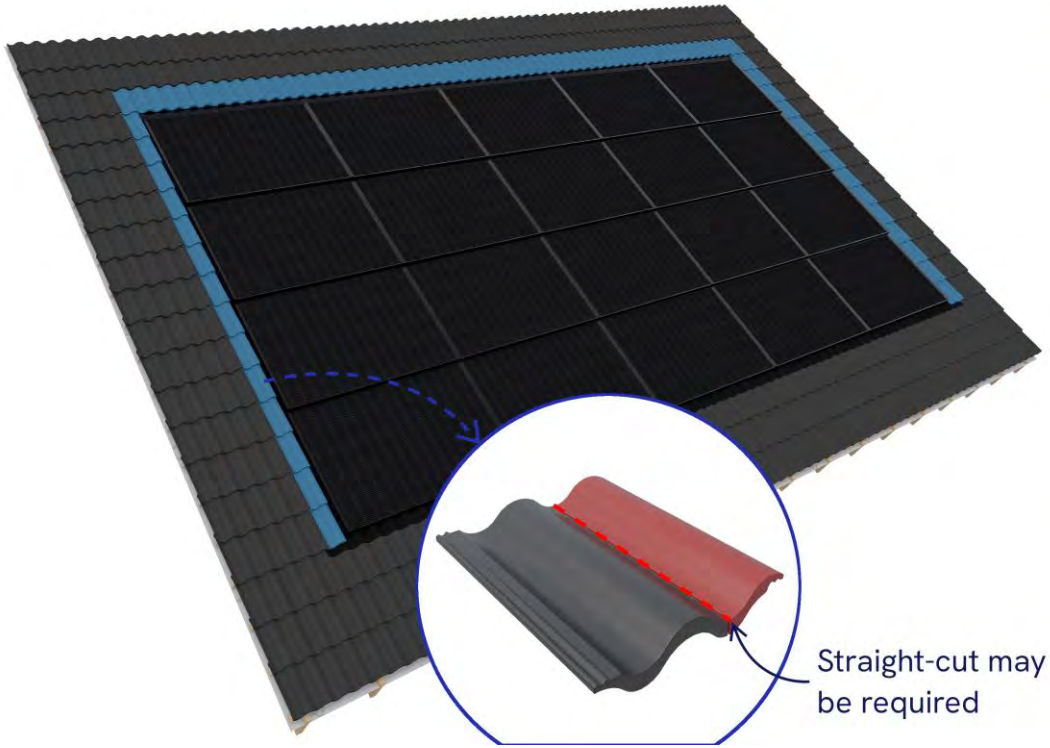
C13
Roofing screw with drill point

Notes

1. Quantities shall be determined in accordance with Table 1.

Installation Step 3.1 | Finishing with Roof Tiles

- Place missing roof tiles to the left and right side. Depending on the roof tile type and the selected Power Set option, straight-cut tiles may be required. Use diamond-tipped or masonry saw blade and always wear appropriate protective safety gear.
- If a tile “foot” would support on the flashing, cut only that one, leaving other intact.
- Install the full row of roof tiles above the top row of BIPV-modules to complete the transition.



Legend

Roof Tile

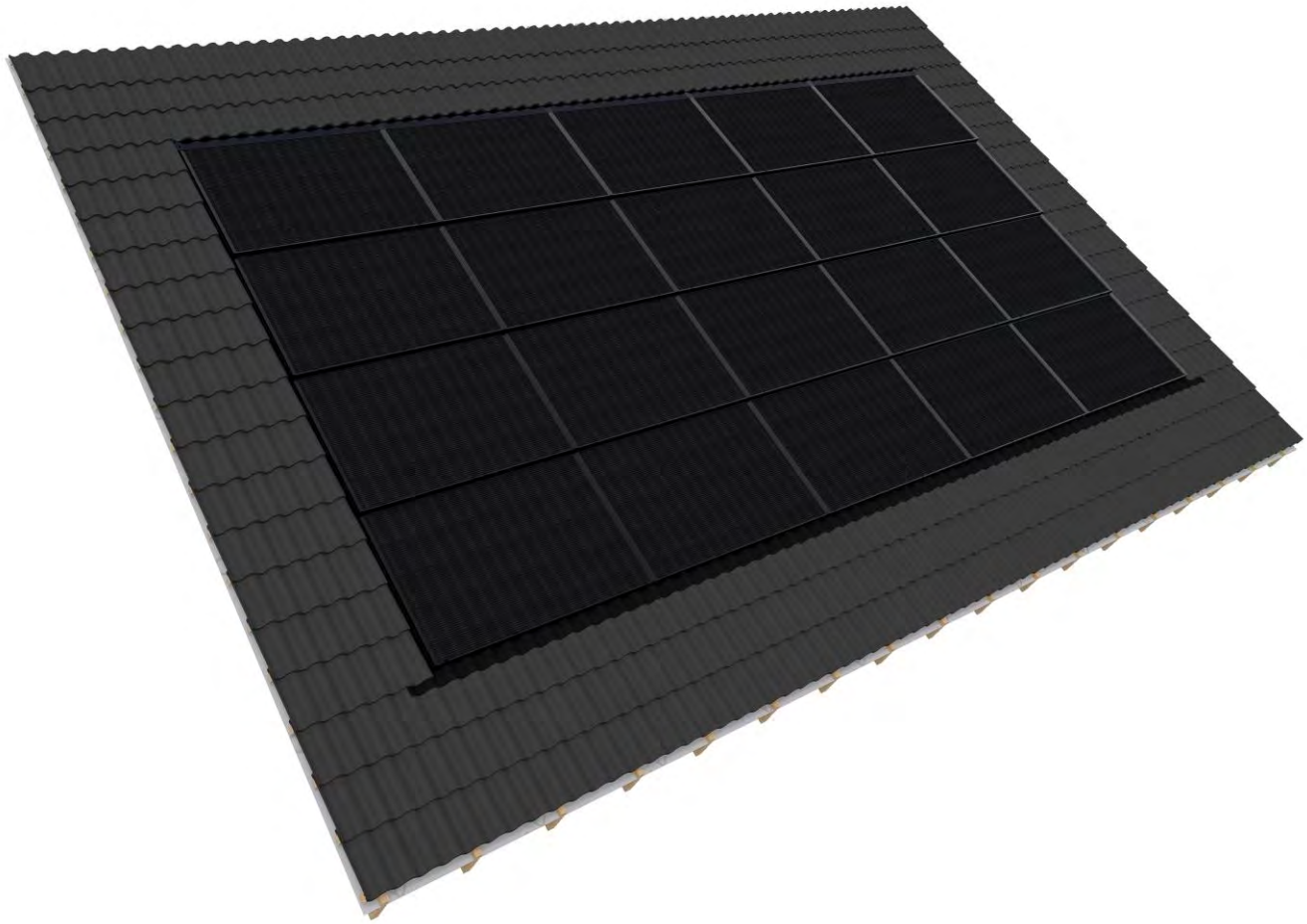
Notes

1. Roof tile cut-outs and placement depend on the specific roof tile type and the selected Power Set layout.
2. Use a diamond-tipped or masonry saw blade for cutting, and always wear appropriate protective safety gear.

Congratulations! Your Solar Power Set™ is now complete!

Solar Full Roof™
Power Set

Roof.
Design.
Power.



Installer self-control declaration

INSTALLER'S BUSINESS NAME	DECLARATION DATE
CUSTOMER FULL NAME	SITE UNIQUE ID
INSTALLATION FULL ADDRESS	

BACKGROUND	This document is the installer's self-declaration of compliance. By completing this form, the installer confirms that all inspected areas met SOLARSTONE's guidelines, and applicable local standard, regulations and building codes. This record forms part of the project's quality documentation and must be retained throughout the warranty period.

PURPOSE	This declaration promotes personal self-assessment, accountability, reduces installation errors, and provides a traceable quality record for the client, installer, and SOLARSTONE. It complements formal third-party inspections by capturing the roofer's own professional judgement at each stage.

OBJECTIVE	The installer completing this form declares that, to the best of their professional knowledge and on-site observation, roof preparation, underlayment, battening, cable management, and equipment positioning were carried out in compliance with the project documentation and SOLARSTONE's requirements. Any deviations, site-specific conditions, or observations identified during the installation have been accurately documented as found on site. Complete and accurate documentation ensures traceability and supports efficient assessment and handling of future service requests, claims, and warranty matters.

NOTES / SUMMARY

Master Roofer full name

Master Roofer signature

INSPECTED AREAS			
SITE SAFETY, ACCESSIBILITY & UTILITIES	**RESULT**		
The work area was safe and vehicle access to the site was ensured.	☐ Compliant	☐ Not Compliant	☐ Not applicable
There was sufficient space for receiving, unloading, and storing materials.	☐ Compliant	☐ Not Compliant	☐ Not applicable
A crane and/or lifting equipment can was used on site.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Scaffolding was installed and used for the installation period.	☐ Compliant	☐ Not Compliant	☐ Not applicable
An electrical connection was available for tools and charging.	☐ Compliant	☐ Not Compliant	☐ Not applicable
NOTES & REMARKS:			

PROJECT DOCUMENTATION & COMPLIANCE	**RESULT**		
Necessary approvals and permits for the work were in place.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Solarstone project documentation was available on site, valid, understood and followed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Solarstone installation manual was available on site, understood and followed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
PV-cable routing specification documentation was available and followed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Shadows from nearby obstacles were accounted for in the DC-string design.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Need for snow barriers, walking rails, and ladders were assessed and planned in project.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Maintenance walkways for larger solar areas were planned and accounted for.	☐ Compliant	☐ Not Compliant	☐ Not applicable
NOTES & REMARKS:			

ROOF CONSTRUCTION & UNDERLAYMENT	**RESULT**		
Roof pitch complied with manufacturer requirements and the design; min ≥ 18°	☐ Compliant	☐ Not Compliant	☐ Not applicable
Roof structure complies with building standards and has load capacity ≥ 16 kg/m^2	☐ Compliant	☐ Not Compliant	☐ Not applicable
Roof geometry is correct; diagonals match; tolerance ±20 mm.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Roof structure is straight and plumb; no deflection.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Underlayment is water- and UV-resistant; watertightness class ≥ W1; –40 °C to +120 °C	☐ Compliant	☐ Not Compliant	☐ Not applicable
Underlayment is watertight sealed according to the manufacturer's instructions.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Excess water on the underlayment is directed to the eaves and/or the rainwater system.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Ventilation batten dimensions are at least 45×45 mm.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Batten dimensions: Solar Power Set™ 45×95 mm.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Battening complies with the design; straightness and spacing tolerance ±2 mm.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Batten nails/screws are properly fixed, approx. 2/3 into the rafter.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Ventilation batten–underlayment–battening gaps are sealed with sealing tape.	☐ Compliant	☐ Not Compliant	☐ Not applicable
NOTES & REMARKS:			

PV-CABLE MANAGEMENT	**RESULT**		
PV cable grouping and layout follow the design.	☐ Compliant	☐ Not Compliant	☐ Not applicable
PV cables are fixed, not resting on underlayment; main route is in conduit.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Roof cable penetrations are watertight and properly sealed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
PV group open-circuit voltage measured; results marked on cable ends.	☐ Compliant	☐ Not Compliant	☐ Not applicable
NOTES & REMARKS:			

SOLARSTONE ROOF INSTALLATION	**RESULT**		
Valleys and eave flashings installed; penetrations watertight sealed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Fascia board, drip edge and gutter brackets installed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
Edge flashings properly fixed.	☐ Compliant	☐ Not Compliant	☐ Not applicable
BIPV modules correctly in clamps, straight and flush.	☐ Compliant	☐ Not Compliant	☐ Not applicable
For Solar Power Set™, panels fit tightly edge to edge.	☐ Compliant	☐ Not Compliant	☐ Not applicable
NOTES & REMARKS:			

Version

No	Date	Description	Made by	Approved by
V1.2	01.06.2026	Product name	R.Roosalu	R.Roosalu
V1.1	19.02.2026	Version published	R.Pärn, H. Lass	R.Roosalu, M. Lobjakas