VOLT-TILE.COM

VOLT
INTEGRATED
PHOTOVOLTAIC
FLAT TILE
SYSTEM

2026

INSTALLATION MANUAL

ELECTRICAL AND PHOTOVOLTAIC COMPONENTS

Applicable to only Australian installations of Volt Planum modules
VOLTPLM-110-24F, VOLTPLM-115-24F, VOLTPLM-120-24F

ISSUE 210426 – REVISION A

INDEX

VOLT INSTALLATION MANUAL

ABOUT VOLT

EXCEPTIONAL TECHNOLOGY.

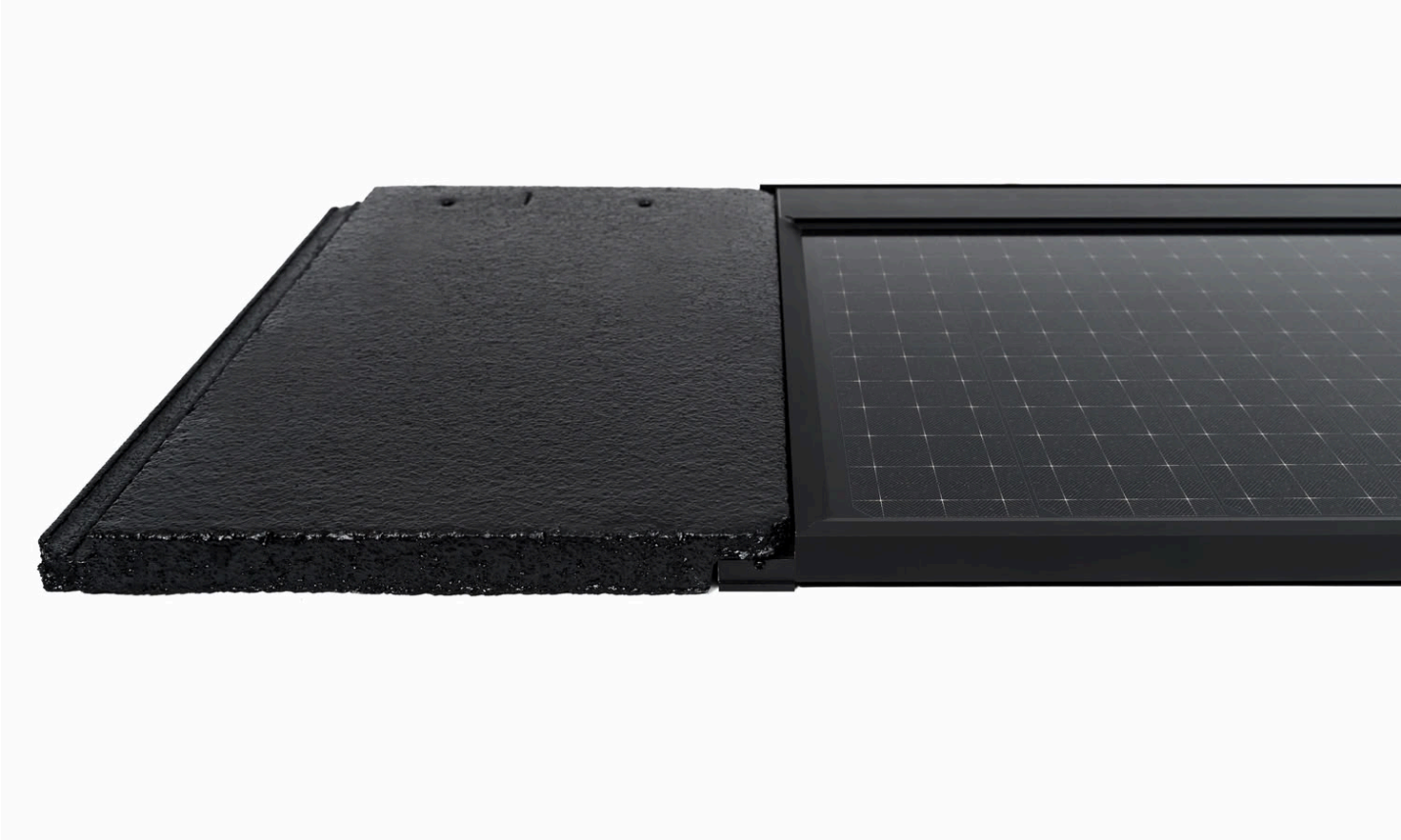
BESPOKE SOLAR.

Volt is a roof-integrated solar tile engineered with unmatched performance, captured in an elegant design. With the highest wattage available on any solar tile worldwide and an industry-leading warranty, Volt is truly the next generation of solar. Volt delivers affordable, clean energy to households to meet their sustainability goals without sacrificing the aesthetic of their new home.

VOLT ROOF INTEGRATION

VOLT PLANUM AND LODGE SOLAR TILES INTEGRATE WITH BRISTILE ROOFING'S SELECTED ROOF TILE RANGES

Volt's solar roof tile systems comply with Australian photovoltaic manufacturing regulations. The system combines renewable energy with aesthetic excellence. Product details are provided separately and are subject to change without notice. This manual should be read along with all the product details and specifications and the Planum, Prestige, Premiere and Eton H-Selection roof tile technical manual.



PLANUM UNIQUE ATTRIBUTES

Roof integration
with Bristile Roofing's Planum Roof Tile

Small Profile
with dimensions of 1908 x 443mm.

Robust
16 kg per tile.

High Quality
components including aluminum and dual glass front and back.

All-Black
design for a modern elegant look.

High Effective Efficiency
up to 16.2% based on the exposed solar tile area (1863 mm × 365 mm after row overlap).

High Power Output
up to 120 W per tile (VOLTPLM-120-24F).

PERC SOLAR CELL
technology passivated emitter and rear contact

100% Recyclable
by solar panel recycling specialists

SAFETY CONSIDERATIONS

GENERAL

⚠ WARNING. Please note that the photovoltaic modules will produce a DC voltage and current that can be fatal if exposed to any type of light source. Care must be taken when working on photovoltaic modules. The PV Array DC Isolator located at the inverter and the PV String Disconnection Point at the array will NOT turn the photovoltaic modules off; it will only isolate the array cabling between the PV Disconnection point and the inverter or between the inverter and the PV Array DC Isolator adjacent the inverter.

SHUTDOWN PROCEDURE

1. Turn off the AC “Solar Supply Main Switch” located in the switchboard.
2. Turn off the DC “PV Array Isolator” located next to or integrated with the inverter. Under no circumstances should the DC Connectors or PV Array Isolators be operated under load.

Never under any circumstances should an unqualified person work on a photovoltaic system. Only qualified and certified Electricians with Volt Solar Installer training are permitted to work on a Volt Solar Tile System.

- Potentially lethal DC voltages can be generated whenever PV modules are exposed to a light source. Avoid contact with electrically live parts, and be sure to isolate and test all circuits before attempting to make or break any connections.
- Only authorised Volt-trained personnel should have access to or perform work on the modules or solar system.
- Do not stand on, step on, damage or scratch the front or backside surfaces of the solar module.
- Broken modules cannot be repaired, and contact with any module surface can cause electrical shock. Do not use a module with broken glass or a damaged back sheet.
- Do not disassemble the modules or remove any part of the module.
- When working on electrical connections, all appropriate PPE should be worn.
- Ensure that all MC4 connectors are free from debris and moisture before connecting. Never disconnect any connectors under load.
- Ensure all MC4 connectors are of the same manufacture/make and are certified as compatible.
- Do not install or handle modules when wet or during periods of high wind.
- Ensure that all connections are securely made with no gap between the contacts. Any gap can result in electrical arcing that can cause a fire hazard and/or an electric shock.
- Make sure that the polarity of each module or string is not reversed, considering the rest of the modules or strings.
- Do not artificially concentrate sunlight on these solar modules.

SAFETY CONSIDERATIONS

- Volt Solar Tiles are certified to IEC 61730 Safety Class II and are rated for a maximum system voltage of 1500 VDC. This maximum voltage should not be exceeded at any time, and allowance in calculations must include the temperature coefficient and voltage rise at temperatures below 25 °C per AS 5033. The modules also carry a UL 790 Fire Class A roof fire rating, valid when installed per the Installation Environment section.
- Do not use water to extinguish fires of an electrical origin.
- Under normal conditions, a solar photovoltaic module will likely produce more current and /or voltage than reported under standard test conditions. Accordingly, the value of ISC marked on this module should be multiplied according to AS5033.

SOLAR TILE HANDLING

All Volt Solar Tiles should be handled with care at all times to avoid any damage. All warnings and instructions on the packaging should be observed. Follow these guidelines when unpacking, transporting, carrying, installing and/or storing solar tiles:

- Appropriate safety gloves must be used when handling solar tiles and/or packaging.
- Upon receipt of the solar tiles, the packaging should be checked for damage and any irregularities. If the packaging is damaged, all solar tiles should be checked, and a record should be made by photographing all affected components.
- Storage of packaging should be in a clean, dry place and only transported for the required time to get to the installation site. Limit exposure of packaging to weather elements. Under no circumstances should the packaging be allowed to get wet.
- Do not stack solar tile boxes.
- On-site, the modules need to be kept clean and dry. Do not unpack modules onto the ground.
- Record the serial numbers before installation and note the information in the system documentation.
- Do not use the junction box or cables as a grip when moving the solar tiles.
- Do not stand or walk on the solar tiles.
- Avoid dropping the solar tiles, as the damages caused may not be seen or apparent immediately.
- Keep all electrical contacts clean and dry.
- Do not apply force to the back sheet on the rear of the solar tile.
- Avoid using sharp or pointed objects if the solar tile or its components require marking.
- Do not use adhesives, detergents, or paints on the front or rear of the solar tile.
- Solar tiles that have been damaged or tampered with are not to be used in any way.
- Never attempt to disassemble, modify, or adapt the solar tile, back sheet, junction box, or frame in any way, as this will void the warranty.

DESIGN & INSTALLATION CONSIDERATIONS

WIND AND STRUCTURAL DESIGN

When designing a Volt-integrated solar power system, consideration must be taken for photovoltaic design, electrical design, and structural and wind loads. When designing the roof and its photovoltaic components, consideration must be taken for the following:
inverter.

1. The wind speed region;
2. The terrain category of a building site;
3. The Technical Record 440 (TR440) extension of this code, believed to be the standard for the design of products for most cyclonic areas–applies in Australia to areas north of latitude 250 south and within 50kms of the coast (including offshore islands); and
4. State and/or local statutory authority requirements and covenants (special considerations may apply to the site concerning items A, B and C).

The installation specifications in this manual are based on a basic wind speed for the greatest strength of 60m/s at a height of 6 metres from ground level. Suitable for sites in Regions A and B. It is advisable to consult both your building engineer and local Volt office concerning designated cyclonic area installation specifications areas, i.e. Regions C and D. This section will cover Volt recommended installing specifications based on the design gust wind speed, as well as:

1. Minimum roof pitch of 15° for Planum tiles and 20° for Lodge tiles;
2. Maximum roof pitch requirements;
3. Batten requirements and truss spacings;
4. Batten installation requirements; and
5. Sarking installation and requirements.

Specifiers are advised to determine local requirements before proceeding, noting that relevant local authorities may implement special specifications to the final structure. It is also advisable to consult your local Volt office, as they may recommend installing specifications based on regional experience.

For the Australian market, Building Integrated PV Module installations must comply with the requirements of the Australian National Construction Code. To comply with the AS5033 and the Clean Energy Council Guidelines regarding the design and installation of the photovoltaic modules, frames, fixings and support structure, consideration must be taken for the following standards:

- AS 1170
- AS 1170.2:2021
- AS 1170.3:2003

Due to the nature of the solar tiles being flush to the roof surface, the installation methodology remains the same for increased downward loads, i.e. snow. Care should be taken during the design phase to ensure that the potential snow levels at the planned installation location are suitable for the rated Pa of the modules and that the building itself has been designed and constructed to suit the environmental factors of the installation location.

Mechanical Design Loads
The Volt P3.5 solar tile is qualified for the following mechanical loads. Design Loads exclude the 1.5 test load safety factor and must be used for structural design calculations;
Test Loads include the safety factor and are stated for reference only.

Positive (+ / downward, e.g. snow):
Design Load +3 600 Pa
Test Load +5 400 Pa

Negative (– / upward, e.g. wind uplift):
Design Load –1 600 Pa
Test Load –2 400 Pa

Test load safety factor: 1.5, applied in accordance with IEC 61215-2.

INSTALLATION ENVIRONMENT

ALTITUDE
Volt Solar Tiles are qualified for installation at altitudes up to 2000 m above sea level without electrical derating. Installation above 2000 m requires voltage and clearance derating per IEC 60664-1; consult Volt prior to specification.

OPERATING TEMPERATURE
Permitted module operating temperature range: −40 °C to +70 °C. Module Temperature [T98] maximum is 70 °C, defined as the temperature exceeded by no more than 2% of operating hours in an ambient range of −10 °C to +40 °C. Installers shall confirm that the site ambient is consistent with these limits.

FIRE RATING AND MOUNTING CONDITIONS
The UL 790 Fire Class A rating is valid only when ALL of the following apply:
roof pitch between 15° and 60°; module fixed per the mechanical installation section;
Module installed over a roof area prepared in accordance with the approved Bristile Planum roof tile system requirements, including compliant sarking and battens to AS4200.2; no combustible materials within 50 mm of the module junction box. Departures from these conditions may reduce the fire rating and require written approval from Volt.

ELECTRICAL SPECIFICATIONS

DC CONDUCTORS

DC conductor requirements:
• Minimum conductor cross-section: 4 mm² (stranded tinned copper, Class 5 / IEC 60228)
• Minimum outside insulation diameter: 6.6 mm
• Cable type: PV1-F double-insulated, EN 50618 / IEC 62930
• Temperature rating (continuous): −40 °C to +120 °C
• Voltage rating: 1.5 kV DC minimum
• UV resistance: required (UV-stabilised for outdoor exposure)
• Minimum bending radius: six times the outside cable diameter
• Maximum permissible voltage drop: 3% (string entry to inverter input)Factory-supplied output cable: 4 mm² × 950 mm, double-insulated, UV-resistant.

PV CONNECTORS

Factory-fitted module connector: Baoding Yitong PV Science & Technology Co. Ltd, Type 18.01.Required mating connector: Baoding Yitong PV Science & Technology Co. Ltd, Type 18.01 (matched).Only connectors of the same manufacture and model may be mated together (AS/NZS 5033 Clause 4.3.11). Do NOT mix connector brands or part numbers. Ensure all connectors are free from debris and moisture before connecting; never disconnect under load.

BYPASS DIODES

Each module contains factory-installed Schottky bypass diodes within the sealed junction box:
• Diode type: Schottky
• Forward current rating: ≥ 15 A per diode
• Reverse voltage rating: ≥ 45 V per diode
• Operating temperature: −40 °C to +150
*CBypass diodes are non-serviceable. Modules with suspected diode failure shall be returned under warranty and shall not be opened or modified in the field.

SYSTEM SIZING

Maximum series and parallel module configurations (subject to inverter input window):
• VOLTPLM-110-24F: up to 78 modules per series string; up to 4 parallel strings per MPPT.
• VOLTPLM-115-24F: up to 78 modules per series string; up to 4 parallel strings per MPPT.
• VOLTPLM-120-24F: up to 77 modules per series string; up to 4 parallel strings per MPPT.Max series calculated from Voc at −10 °C cell temperature using the Voc temperature coefficient −0.30%/°C. Installers shall recalculate for site-specific low temperatures and the inverter's DC voltage limit.
Strings shall only be paralleled on separate MPPT inputs or via string fuses in both positive and negative poles per AS 5033. Different module models shall not be mixed in the same string or array unless expressly permitted by Volt in writing.

PHOTOVOLTAIC DESIGN

The design of the electrical and photovoltaic system must comply with the latest versions of AS5033 Installation of Photovoltaic Arrays, AS4509.1 and AS4509.2 Stand-alone Power Systems, AS1768 Lightning Protection, AS4777 Grid Connection of Energy Systems via Inverters, and AS3000 Electrical Installations. All standards and the standards referenced in that standard must be adhered to. Authorised Volt Partners will provide the Photovoltaic and Electrical Design for each project. Accredited installers must adhere to the design whilst ensuring that the design complies with all standards referred to in this manual and as required by each state and territory regulator. Volt can assist Volt Partners in the engineering and design of each project upon request.

ORIENTATION AND PITCH

The Volt Solar Tile system is designed for a pitch of 15° and above for the Planum range, and 20° and above for the Lodge range. The roof's orientation must be on the North, East or West and in no situation be designed or installed between 90° and 270° unless approved explicitly by Volt management on a project-specific case.

ARRAY LOCATION

The array should be located away from any shading. If the array is shaded, a shade analysis must be done, and a yield calculation, including month by month graph, is sent to the client and Volt for approval.

INVERTER AND INVERTER LOCATION

For the Australian market, Volt recommends that Volt Partners use Fronius and SMA inverters for their solar tile systems. These brands are recommended based on their compatibility, reliability, monitoring platform, connectivity, and technical support availability.

The inverter should be installed as close as possible to the main switchboard or meter panel to reduce AC cabling. The location should be out of direct sunlight if possible. The inverter manufacturer's installation instructions and design guidelines must be followed. If required, the DC isolator must be adjacent to the inverter.

DC CABLING

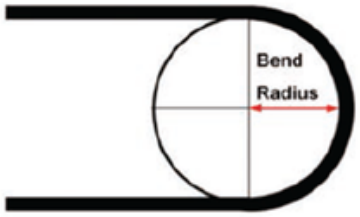
DC cabling should not have a voltage drop of more than 3%. The DC cabling must be installed within the solar tile cable containment system (cable tray). Where not installed in the cable tray, heavy-duty rated conduit must be used to protect the cable between rows of tiles. DC cable must adhere to the bending radius of the manufacturer's specification as detailed below and must not make contact with any adhesives or glues.

THE BENDING RADIUS OF THE CABLE SHALL BE NO LESS THAN SIX TIMES THE OUTSIDE DIAMETER OF THE CABLE.

All array or string cabling from the PV Array Disconnection Point to the inverter must be encased in a heavy-duty conduit as per regulations. For buildings under construction, the cabling installation should be performed at the frame stage when the Volt solar tiles are installed. All concealed cable and cable containment must be kept at least 50mm from any surface, for example:

- The conduit for the array or string cable should be fixed to the trusses; and
- The conduit for the array cable installed inside a wall must be at least 50mm from the external surface of the wall, i.e. installed in a cavity between the bricks and the wall frame or installed with minimum rating WSX3 protection as per AS3000:2018

At no stage can twin DC cables be separated and used as a single DC cable. By doing this, the cable insulation is not compliant with the manufacturer’s testing standards.



Incorrect Routing of cable

Correct Routing of cable

REVERSE CURRENT PROTECTION / STRING FUSING

At no stage should strings be paralleled to an array unless string fuses are used in both negative and positive poles. The string fuses should be installed at the inverter if required, but the design recommendation is to install each string to separate MPPT inputs of the inverter.

DC STRING AND ELECTRICAL DESIGN AND INSTALLATION

The DC strings/arrays and the electrical design and installation must adhere to the Volt design issued with each installation. The string voltage is variable as per local weather conditions and must be designed to suit the characteristics of the selected inverter allowing for all minimum and maximum voltages at VMP and VOC. All string and electrical designs must adhere to the current standards referred to in this manual.

MISMATCHED SOLAR TILES

Differing solar tile models are not to be used in the same solar power system unless expressly permitted by Volt via written communication. For inquiries on possible mismatched solar tiles or unique system designs, you may contact Volt for assistance.

CABLE TRUNKING

Cable trunking is provided on the rear of each solar tile. All DC cabling between adjacent modules is to be contained inside this cable trunking.
Where cabling passes from one course line to another, it is to be mechanically protected inside HD solar conduit, or another 'Volt' approved method of cable support and containment.
The trunking is earthed to the rest of the solar tile by the manufacturer. The earthing is required under AS5033 and must be maintained at all times.

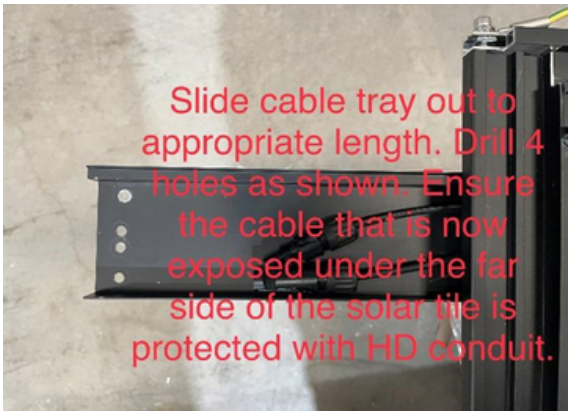
PV ARRAY DC DISCONNECTION POINTS

The PV Array Disconnection Point location must be chosen to allow easy access to the MC4s for disconnection purposes while complying with AS5033 and AS3000 “Readily Available”.
To achieve this, we recommend installing the PV Array Disconnection Point under a roof tile immediately to the left of a Volt Solar Tile, allowing the easy removal of the roof tile above the Disconnection Point.

DO NOT INSTALL THE DISCONNECTION POINT UNDER A ROOF TILE THAT HAS A VOLT SOLAR TILE DIRECTLY ABOVE IT, AS THIS WILL MAKE REMOVAL OF THE ROOF TILE TO ACCESS THE DISCONNECTION POINT DIFFICULT.

STEP 1

Each Volt crate is delivered with two spare sections of rear cable tray. These are inserted into the rear inbuilt cable tray to provide a structure for the disconnection point to attach to.



STEP 2

Drill two or four x 6mm holes through the tray as shown, depending on how many conduits are to be affixed to the tray.

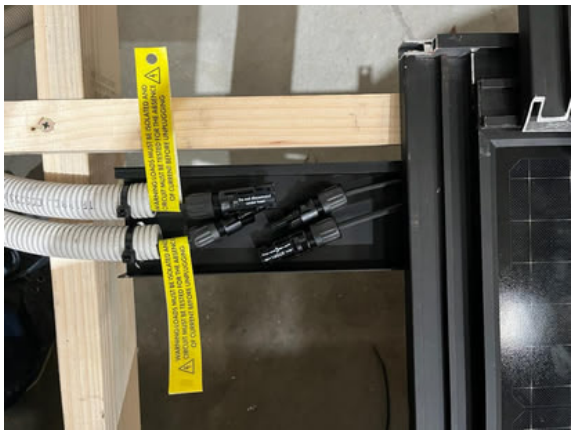
STEP 3

Run the Positive and Negative cables from the strings intended to be isolated to the installed cable tray section, taking care to mark the cables for future identification.

STEP 4

Install DC cabling to the inverter in heavy-duty rated conduit protection and cable tie the conduit/s to the previously drilled holes in the cable tray. Label the cables with the required safety warning labels as shown.

Install inverter DC cabling in HD protection and cable tie to tray using 4 holes and label cables with required labelling.



STEP 5

Terminate the cabling with compliant and compatible MC4 connectors. Install blank spare MC4 plugs into the array MC4s to make it safe. “Tag out” the MC4s as not to be connected.

⚠ WARNING: DO NOT CONNECT THE INVERTER AND ARRAY MC4S TOGETHER UNTIL THE INVERTER DC ISOLATOR HAS BEEN INSTALLED AND THE CABLING IS TERMINATED. DOING SO COULD CAUSE SERIOUS INJURY OR DEATH AND MAY CAUSE STRUCTURE FIRES.

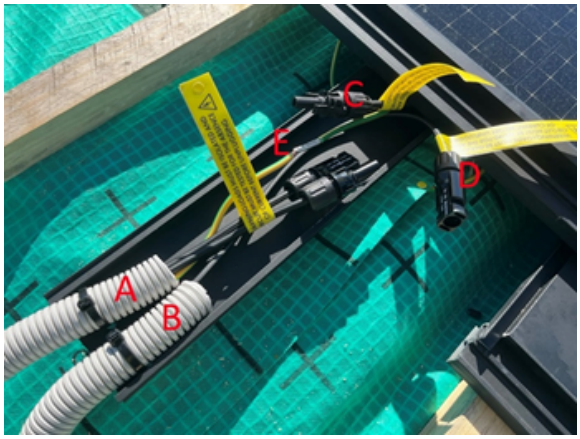
STEP 6

Install the “PV String Disconnection Point” location label to the roof tile directly above the Disconnection Point, using a suitable liquid adhesive, i.e. Sikaflex-221

Disconnection point label installed to tile.

A summary of the disconnection point is listed below and indicated in the below image.

- A” is the conduit bringing the DC cabling and earth from the inverter to the Disconnection Point at the array
- “B” is the conduit bringing the negative DC cable from the other end of the array
- “C” is the positive array cable MC4 from the junction box on the solar tile adjacent the Disconnection Point
- “D” is the negative array cable MC4
- “E” is the crimped lug joining the earth originating at the switchboard to the array earthing cable attached to the modules



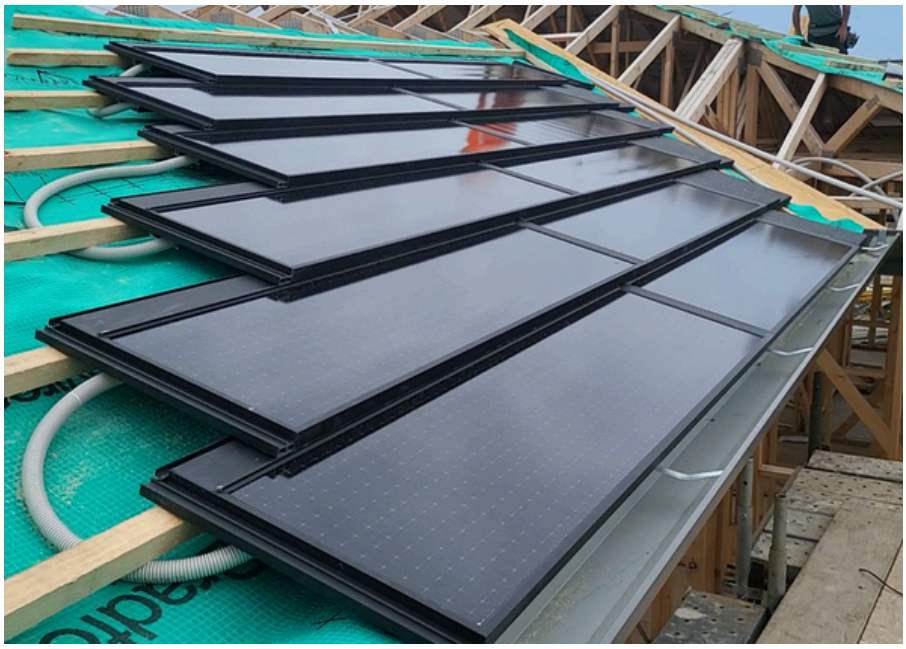
INSTALLATION GUIDE

DC CABLE INSTALLATION

The solar tile has a cable tray at the rear of the solar module; this provides both a containment system and protection for the DC cables. The cables must be installed in this cable tray, once the solar tiles are laid approximately 100mm apart the MC4 connectors are plugged together (as shown below) before the solar tile on the left is placed in it's final position over the solar tile on the right.

At the end of each row, a DC 'linking' cable is installed in a heavy-duty flexible conduit to the row above, as shown in the below image.

Swap the positive and negative leads at the rear of the modules on every second row of solar tiles so that the polarities at the end of the each row are different to the row below, this allows the DC cabling to snake up to the roof.



- DC cables are stored in the cable trunking.
- The first module is installed in the bottom right corner of the array
- Then laying modules to the left
- MC4 connectors are plugged in as the solar tiles are laid and before being screwed in place.
- The positive plug connects to the negative plug of the adjacent tile in the same row.
- Complete DC connections and check that all connectors have made full contact.
- Install DC linking cables between rows in heavy duty conduit protection.
- Check for continuous and increasing voltage at the end of each row.

EARTHING

Each solar tile is individually earthed with a manufacturer-supplied 4mm2 earth cable that comes fixed to the rear of the module. Earth lugs are provided on each solar tile. The earth cable must remain continuous, and any joints need to be soldered.

1. Run a continuous earth from the Disconnection Point (or switchboard) along the top row of solar tiles.
2. Install the first row of solar tiles, loop the earth cables attached to the solar tiles under the roof batten so it is sitting in between the battens in the row above the first row.
3. The earthing crimps on the first row of solar tiles are placed over the earth cables from the second row of tiles and crimped into place so that the housing is correctly seated
4. There is no need to remove any insulation, the crimp will displace the insulation and provide adequate bonding to the next conductor
5. Check the lugs on the side of the factory fitted section of the earth crimp to ensure they have not become loose in transit or installation.
6. Perform a pull test on the join to check it is tight.
7. Repeat this process at each solar tile.
8. Complete earth continuity testing of each solar tile to ensure they are adequately earthed to the local legislative requirements.

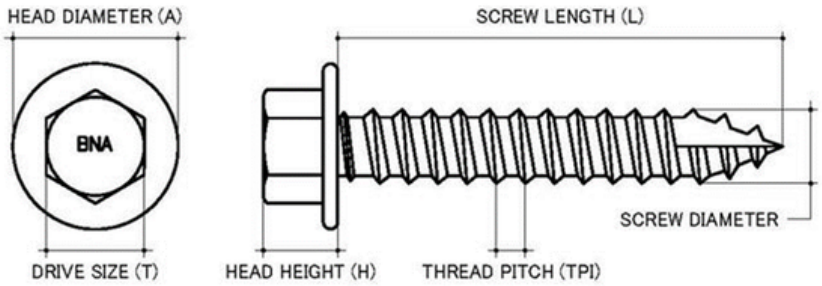
A full row of solar tiles should be installed. Then, each solar tile is fixed to the rear of the batten with two screws as per below.

Size/Diameter	14g/6.3mm
Material	The screws must be Stainless Steel
Thread type	Coarse
Drive size/type	5/16” hex socket
Screw length	15-20mm
Driver tool	Impact
Max torque	8.0 N·m (range 7.0 – 9.0 N·m)

EARTH LUG TORQUE SPECIFICATION

Earth lug bolt size	M5 (stainless steel A2-70 or better)
Bolt drive / head	5 mm hex socket
Tightening torque	4.0 N·m (range 3.5 – 4.5 N·m)
Washer	Captive toothed washer beneath bolt head
Earth cable	4 mm² tinned copper (factory-supplied)

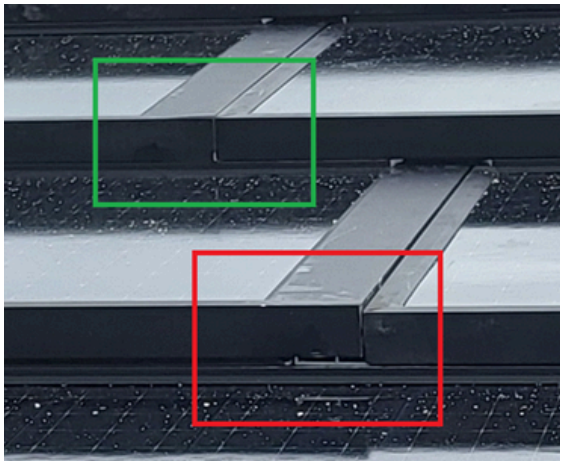
Over-tightening can deform the lug and degrade contact resistance; under-tightening can produce a high-resistance joint under thermal cycling.



Screws are to be fixed in at least two positions on the mounting frame of the solar tile, as per the image below. The fixings should be within 250mm of both ends of the solar tile.

The fixings should be screwed through the V channel located on the batten lug as shown below, this will stop the screw from moving while penetrating through the aluminium batten lug and into the timber batten.

INTERLOCKING



NOSE INTERLOCK — Each Volt P3.5 tile has a horizontal interlocking profile at its lower edge, referred to as the "nose". When the row above is laid, the nose of each upper tile engages into the matching profile at the head of the tile below, producing a weather-tight joint. Installers must confirm every tile's nose interlock has fully engaged before proceeding to the next tile. An incorrectly engaged nose interlock can cause roof leaks and is a non-compliant installation — lift the tile, confirm no debris is obstructing the profile, and re-seat before fixing the tile above.

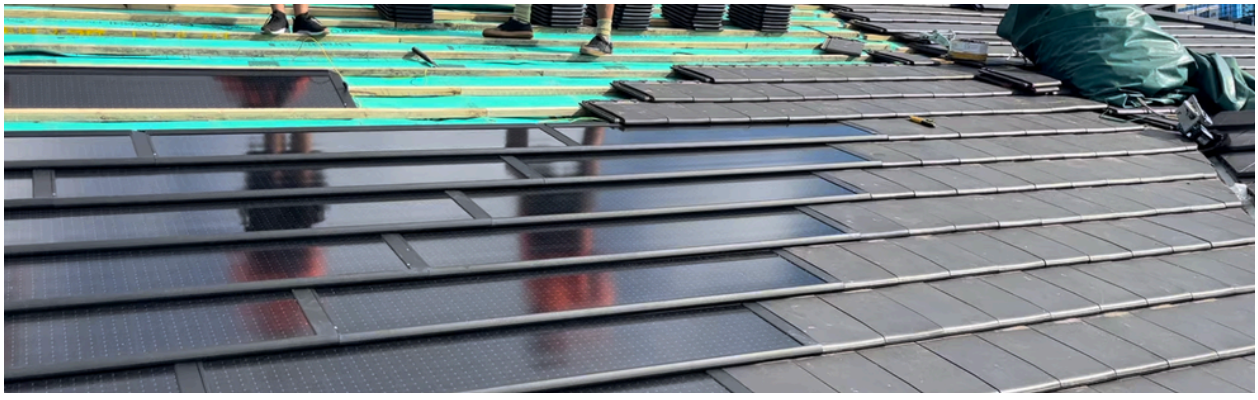
You must always ensure that the solar tile interlock has correctly engaged, the image below shows a solar tile in which the interlock has not correctly engaged (red box), and the correct engagement is shown in green. This can cause roof leaks and is a non-compliant installation

SOLAR TILE OFFSET

Volt modules are installed slightly offset to the row below, this is called 'cross-bonded' and is done to match the compatible roof tiles. Where a system needs to be installed straight up a roof without following the angle of an internal valley or external ridge it is recommended to install each new row offset to the row below by half the width of a roof tile, alternating between offsetting to the left and right of the previous row.

It is important to place a roof tile at the end of each row of Volt modules as these will be hard to install when the next row of Volt modules are installed above.

If the Volt modules need to follow the angle of the valley or ridge the offset will typically all be to one side. As an example, on a 20-25 degree roof pitch, with Planum Volt modules, each row will be offset by 1 and a half roof tiles in order to follow the valley or ridge. With Volt Lodge modules on a 20-25 degree roof pitch, you will need to alternate between half a roof tile offset and one and a half roof tile offset in order to follow the valley or ridge. As the roof pitch increases, the amount of offset decreases.



SOLAR TILE MAINTENANCE

SOLAR TILE MAINTENANCE

A full maintenance check and cleaning should be done yearly to maintain optimal system operation and safety. The complete system check and maintenance is to be carried out by a licensed professional, ideally the original installer of the system or an authorised Volt Partner. The solar power system must be connected to the Internet via a compatible inverter (recommended models included in the INVERTER AND INVERTER LOCATION section of this guide) for monitoring and maintenance purposes. All system owners must be advised of this in the handover documentation.

The installed Volt Solar Power System is a very low-maintenance photovoltaic system. Items for periodic maintenance shown below are a minimum, and all Australian Standards and Clean Energy Council Guidelines are to be adhered to.

CABLING

- Visual inspection of containment.
- Minor repairs to any loose or misplaced cabling.
- Check that all accessible cabling is mechanically protected where required.
- LV, DC and AC cabling is readily distinguishable.

SOLAR TILES

- Visual inspection of all solar tiles for damage and corrosion.

DISCONNECTION POINTS

- Visual inspection of MC4s at disconnection point.
- Visual inspection of disconnection point location label and warning labels on cables.

INVERTER

- The shutdown procedure is fixed on the inverter.
- Operating correctly.
- Check the history for fault codes (if available with inverter).

OPERATION

- Log system yield since the last service.
- Log daily yield averages (depending on the inverter).
- Check yield differences between arrays.
- Voltage test and report voltages and current are within the system design parameters.
- Operation overview.

GENERAL

- Advise the client of any vegetation which may shade the solar array, thus impacting performance.

REPORTING

- A report will be compiled on the expected generation and the actual generation of electricity from the PV System. Any down time or system faults must be noted.

SYSTEM REMOVAL

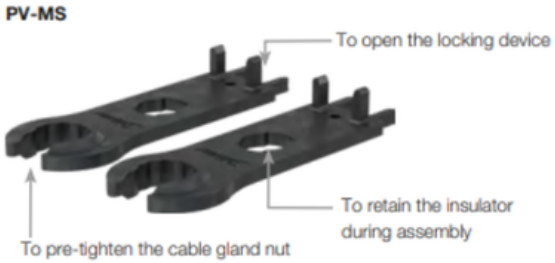
In order to remove Volt Solar Tiles, whether for replacement of damaged modules or for decommissioning, follow the below steps to ensure the safety of persons, product and structures.

1. Isolate and lock out the AC Inverter supply.
2. Isolate and lock out the DC isolator at the inverter.
3. Study the site map plan in the Main Switchboard to understand the location/s of the DC Disconnection Point/s.
4. Do not attempt to access the roof when it is wet or icy.
5. Only access the roof if it is safe to do so. Ascertain if local regulations dictate that an edge protection or scaffolding system is required to be in place. If it is not a requirement to have a guardrail or scaffolding system or it is physically not possible to install then all workers accessing the roof must be using an appropriate fall arrest system i.e. a harness attached to an anchoring point, and must be trained in the proper use of the fall arrest system. Exclusion zones should be set up below the work area to prevent any persons accessing the area where items may fall from the roof.
6. It is a requirement to check the exposed conductive parts of the array for the presence of voltage prior to working on the system.
7. Remove a border of roof tiles around the array to expose the battens and trusses to provide an easily trafficable area to walk. This will assist working on slippery roof tile types but will also give easy access to the DC bridging links that connect the rows vertically up the roof. Ensure these roof tiles are stored in a safe location so they do not slide down or off the roof. Keep the roof tiles with the “PV Disconnection Point” labels separated from the remainder of the roof tiles if the system is being reinstalled.
8. Using the appropriate tool disconnect the MC4 connectors at the PV Disconnection Points and test that there is no voltage in the DC cables connected to the inverter DC isolator.
9. Disconnect the DC bridging links on each side of the array/s.
10. Using the appropriate tool remove the fixing screws and earthing assembly on the top row of solar tiles. Starting at the solar tile on the left most side of the top row when viewed from the ground.
11. Lift the upper edge of the solar tile and pull up towards the highest point of the roof to disengage the interlock feature. Once the solar tile is out of its installed position, slide it away from the remaining solar tiles. Access the MC4 connectors underneath the solar tile and using the appropriate tool disconnect the MC4 positive and negative connectors.
12. Disconnect the earth lug from the back of the module using appropriate-sized Allen Key tool, leaving the earthing cables in place to make sure the remaining modules are still earthed as per Australian requirements.

13. Transport the solar tile to a safe place for storage, taking care not to damage any surfaces or apply pressure to the cables, backing sheet, or junction box on the rear.
14. Repeat the process along the top row until all solar modules are removed.
15. Repeat the process for the remaining rows.
16. If the system is not being re-installed the DC cables penetrating the sarking should be either completely removed or relocated into the roof space. The sarking penetrations need to be sealed using the appropriate tape.
17. Hand over the roof to the roofing contractor to install roof tiles into the uncovered area where the solar tiles were.
18. Depending on the system size and roof tile spacings, the roofer may need to re-lay the roof all the way to the far left valley/hip.

APPROPRIATE TOOL FOR DISCONNECTING MODULE CONNECTORS

Use the disconnection tool specified by the PV connector manufacturer (Baoding Yitong PV Science & Technology Co. Ltd, Type 18.01)
To open the locking device and unscrew the cable gland. An open-end spanner set (2-piece plastic, e.g. PV-MS type 32.604) is also compatible per the connector instructions MA298 / MA299.



Order Number	Type	Designation	Assembly instruction
32.604	PV-MS	Open-end spanner set (2 pcs), plastic	MA298, MA299

CLEANING

Solar tiles should be professionally cleaned to maintain optimum performance. The need and frequency for cleaning will vary depending on location, weather, and pollution levels, among other factors. It is recommended to clean the solar tiles whenever dirt can be seen on the glass surface to optimise electrical output. Solar tiles should be cleaned using only water and non-abrasive materials. No chemicals or hard compounds should be used that may damage the coating of the glass on the solar tiles. Once the maintenance check and cleaning are completed, the maintenance log should be completed, signed and dated.

RECYCLING

As part of Volt's sustainable and environmental practices all photovoltaic products should be recycled at the end of their service life. For all photovoltaic product recycling please contact your local photovoltaic recyclers.

RECOMMENDATIONS

RECLAIM PV
enquiries@reclaimpv.com
1800 732 524

LOTUS ENERGY
info@lotusenergy.io
(03) 9893 2333

INSTALLATION MANUAL

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Certificate Holder / Manufacturer: Volt Solar Tile Pty Ltd ABN 95 633 165 410

Unit 4/39 Susan St, Eltham VIC 3095, Australia.
Australian Importer: Volt Australia Pty Ltd (ABN 55 661 968 565)
Unit 4/39 Susan St, Eltham VIC 3095, Revision A
26 June 2026. Supersedes all Volt P3.5 Installation Manual.

www.volt-tile.com

Volt

APPROVED INSTALLER