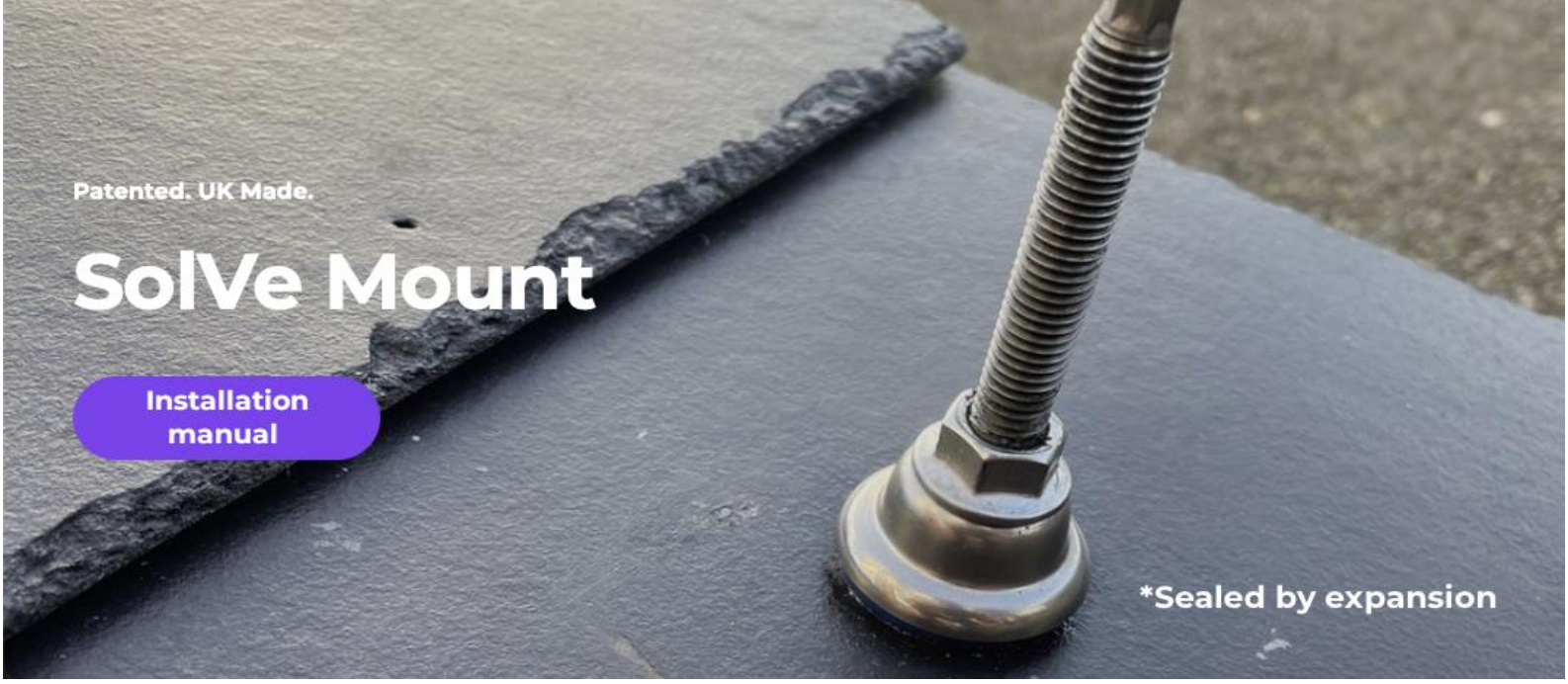


Contents

Product Overview

The Solve range of IPX8 rated roof mounts are the ultimate, fast and reliable solution for installing roof mounted solar panels on residential and commercial properties. Tiles or slates need not be removed, thanks to our patented expanding seal method, as the roof covering is penetrated and perfectly sealed without relying on site applied sealants or imposing downward force to achieve the seal.

Designed, manufactured to MCS and Eurocode 5, tested according to European regulations and standards to achieve CE and UKCA marking status, the SolVe range of roof mounts have been tested to IPX8 rating, submerged 1 meter underwater for 1 hour. The following instructions apply to our full range of roof mounts, for a quick and easy installation regardless of the kit purchased. This fast and effective method provides a stable platform to install a range of roof mounted items but is primarily designed for solar panel arrays and solar thermal collectors.

Limitations

These instructions are for the physical installation and mounting of the SolVe Roof Mount onto a mono-pitch roof of up to 70 degrees and in no way guarantee suitability of any given roof. It is the responsibility of the installer to ensure that the given roof structure and covering is suitable for a solar installation, and of sound nature.

The SolVe mount is single use only. Once installed they must not be reinstalled at another location.

The SolVe cap should be 3mm clear of the roof covering when tightened. The cap should never touch the roof covering.

Sarking:

After cutting the hole in the tile with the 28mm diamond coring bit continue to cut through the sarking until you reach the rafter – creating space for the seal.

Condition:

Only use on good condition slates or tiles with timbers proven to be sound and free from rot

If the condition or suitability of a roof is unclear, a structural engineer should be consulted to confirm.

Spacing:

SolVe Mount Spacing is typically between 600mm and 1200mm depending on zone and various environmental and georgraphical factors. Ensure sufficient

number of mounts are used for your specific system. Use the SolVe Planner to check correct spacing and number of mounts required at solveinnovations.co.uk.

IMPORTANT:

Must NOT be used with snow fences or variant there-of; snow must be free to completely slide off the solar panels. This includes roof features such as valleys where snow may gather. In such cases, in accordance to MCS_012 3.0, a structural survey should be conducted to determine suitability.

Snow zones 4 and 5 must have a mount centers no further than 600mm apart. Refer to the SolVe Installation Planner to calculate number of mounts needed.

Roofs susceptible to drift such as multi span, cylindrical and abutting must calculated on a case by case basis.

Bolts must not be substituted with a ffastening with different mechanical properties such as grade, strength or length.

When installing on any type of interlocking tiles, the SolVe mount must not be installed on an interlocking joint, nor interfere with it in any way.

Compatible Roof Coverings

This following matrix details which common roof coverings are compatible with the SolVe Mount, and those which are not. Roof coverings listed are not compatible unless explicit written approval from SolVe Innovations has been given.

ROOF COVERING	COMPATIBLE?	MCS CERTIFIED	ADJUSTMENT REQUIRED?	LIMITATIONS	Mounting Zone ⓘ
 Slate	✓	✓	None	None	0 - 70mm
 Composite Slate	✓	✓	None	None	0 - 70mm
 Heavy Slate	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	None	0 - 20mm
 Cambrian Interlocking Slate	✓	✓	None	Avoid the join and channel where possible or use a SolVe Tab to seal the 0-70mm join above the mount.	0 - 70mm
 Stone	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Longer 250mm bolts required. Do not install on a join.	0 - 20mm
 Concrete Plain Tiles	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Avoid the join and channel where possible or use a SolVe Tab to seal the 0-20mm join above the mount.	0 - 20mm
 Plain Tiles	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Avoid the join and channel where possible or use a SolVe Tab to seal the 0-20mm join above the mount.	0 - 20mm
 Clay Plain Tile	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Avoid the join and channel where possible or use a SolVe Tab to seal the 0-20mm join above the mount.	0 - 20mm
 Double Roman	✗	✓	Cannot guarantee the seal will be installed on an even surface.	N/A	N/A
 Concrete Interlocking Tile	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Avoid the join and channel where possible or use a SolVe Tab to seal the 0-20mm join above the mount.	0 - 20mm

 Ridged Concrete Tile	✗	✓	Cannot guarantee the seal will be installed on an even surface.	N/A	N/A
 Rosemary Roof Tiles	✓	✓	Thicker roof covering - Twist the seal to adjust the height. Shorter mounting zone required.	Do not install on a join - solution due Q1 2026.	0 - 20mm
 Metrotile / Metal Tile	✓	✓	Preparation step required. Use the SolVe Bi-metal & 35mm diamond hole saw. Twist the seal to adjust the height. **Advised:** Suitable corrosion prevention must be applied to metal exposed during hole preparation, such as CT1.	Avoid uneven surfaces as these would prevent the seal compressing/expanding evenly.	100 - 200mm

Don't see your roof type?

We're continuously expanding our compatibility list. If your roof covering isn't listed above, please contact us to discuss your requirements at info@solveinnovations.co.uk

Safety

This product must only be used by a competent MCS qualified installer.

It is the responsibility of the installer to ensure a safe working environment for themselves, those working around them and any member of public who may be nearby. Appropriate access must be provided and measures in place to ensure risks are as low as reasonably practicable.

Steps must be taken to check the roof does not contain hazardous substances such as asbestos and if in doubt, this product must not be used.

A Risk assessment should be undertaken for each project to help identify and mitigate hazards associated with the installation, including but not limited to, weather, working at heights, hazardous substances, use of power tools, slippery surfaces, slippery hands when using grease, house keeping, fire etc.

Essential Tools

Be sure to use the correct tool for each part of the job to achieve a quick and reliable installation. The following tools will be required:

- 28mm Diamond coring bit
- 7mm wood auger drill bit (7mm Bosch PRO Wood Auger Bit)
- SolVe Drill Guide (one per box included)
- 7mm hex socket for drill driver
- Battery drill driver with high speed function and NO Hammer action

- Tape measure
- SolVe Rafter finder App
- Chalk marker or similar
- 2 x 15mm spanners
- 1 x 17mm spanner
- Builders Square

Prohibited Tools

The following tools must not be used for the installation of the SolVe mounts. Doing so may lead to damage of the seal or tiles and will invalidate the warranty

- Non-diamond coring bit
- Blunt coring bit
- Over / under sized coring bit.
- Hammer action drill- never use hammer action when drilling the tile or timber
- Impact driver

Items Included in each pack

- Pre-assembled SolVe Mount consisting of:
    - 1 x 25mm x 70mm silicone seal
    - 1 x M10 x 200mm A4-80 hanger bolt (pre-greased)
    - 1 x 16mm long 316 Stainless steel collar
    - 1 x 316 Stainless Steel Adjustable base

- Supplied loose in the pack for use during installation
    - 1 x 316 Stainless steel cap
    - 2 x M10 A4-70 Stainless steel flange nuts
    - 1 x M10 A4-70 Nyloc nut

Items to be purchased separately

- Supporting plate or L feet/bracket for connecting rails.

Installation Instructions

TOO COMPRESSED – Bulging outside the cap

JUST RIGHT – The bulge is within the cap

Survey

A pre-installation survey should be undertaken by a trained professional to ensure the roof is of sound nature and suitable for the installation method:

- Timbers free from rot or wood boring insects
- Tiles and nails in good condition
- Tiles are of correct type for the mounting method
- Total tile and batten thickness is within limits of bolt length
- Tile surfaces are clean and free from excessive dirt and organic growth such as moss and tree sap
- Timbers regularly spaced to provide sufficient number of roof mounts to accept the load of the given solar panels and rails
- Timbers are suitably sized to accept the load from the SolVe Mounts
- Correct number of SolVe Mounts have been selected for the given Snow Zone
- No Hazardous substances (asbestos in tiles)

Marking Out

IMPORTANT:

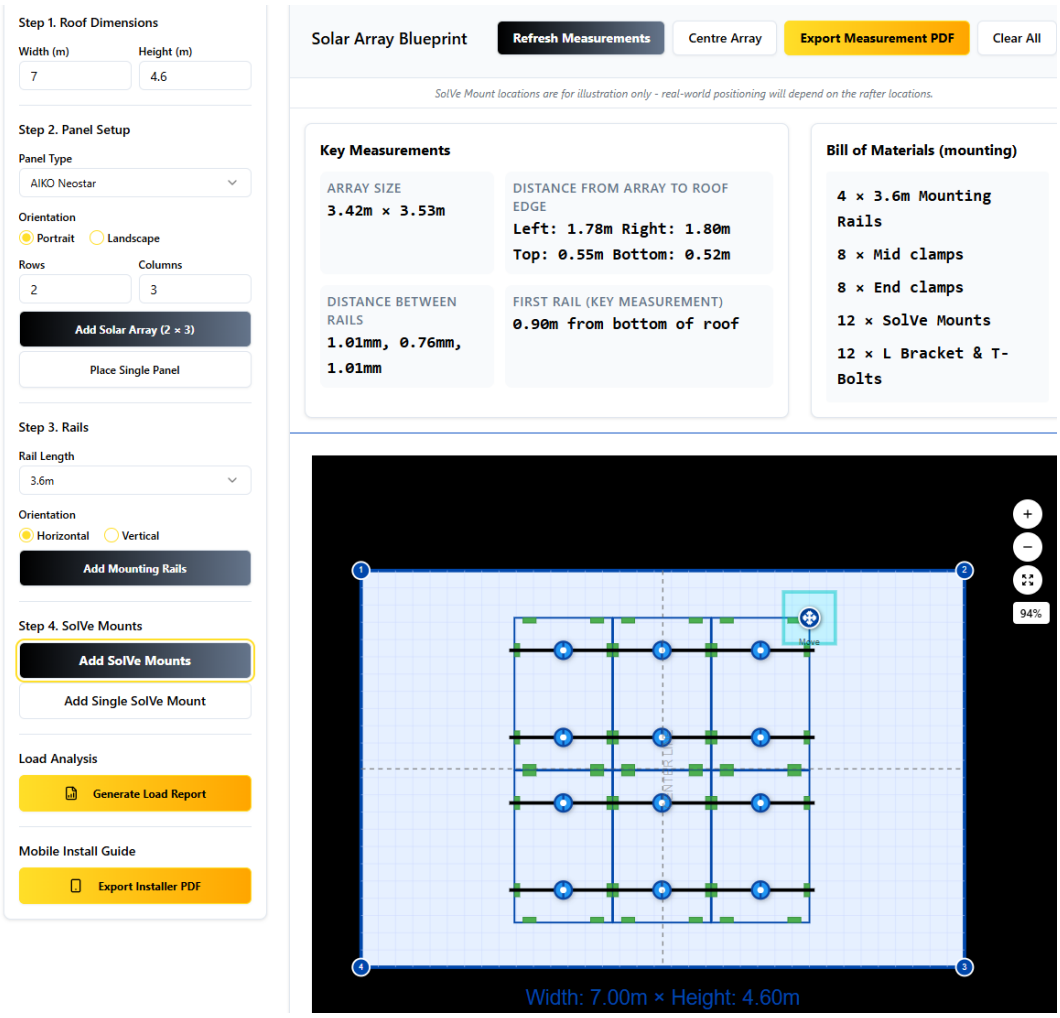
Ensure the tiles or slates are not broken before installing a SolVe Mount.

Do not install the Solve Mount through the tile joint when installing on tiles thicker than 7mm

Do not install on the joints of Concrete interlocking tiles.

Before drilling any holes, check for unexpected items behind the roof covering such as electrical wires.

1. **Calculate Mounts Required:**
   Calculate the required number of mounting points based on standard installation practices. The free online SolVe Installation Planner can be used for this at solveinnovations.co.uk



2. **Find the Rafter:**
   Use the SolVe Rafter Finder app to detect the rafter centres which require a SolVe Mount.

3. **Avoid the Battens**

   The SolVe rafter finder app will detect the battens so be sure to use this to avoid clashing with battens. Watch the installation video for instructions at our website solveinnovations.co.uk

4. **Mark out:**
   For thicker coverings such as concrete, we recommend typically measuring 40mm down from the overlapping tile above. For thin tiles such as slates or Cambrian interlocking, we recommend measuring 50mm up from the batten nail. Confirm your batten position using the SolVe rafter finder app before marking out.

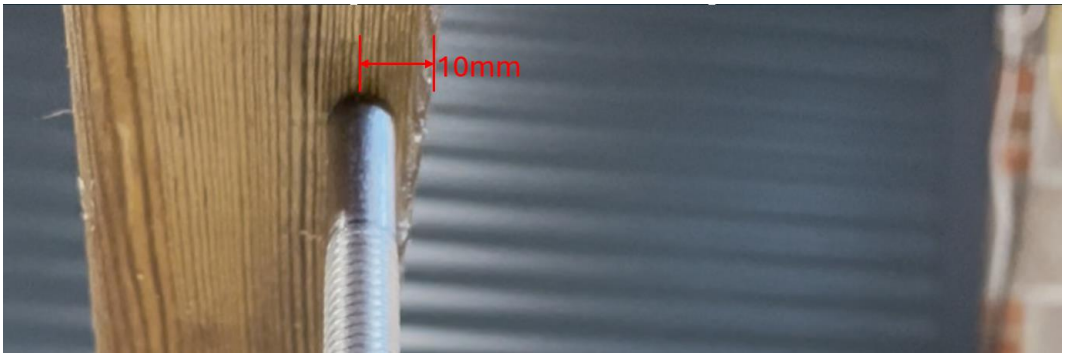
   A chalk or crayon works best- a large cross hair marking, minimum 50mm wide, makes it much easier to target the centre of the hole with your diamond coring bit.

Maximise thread length:
For thicker roof coverings, install as close as possible to the tile above without the cap making contact. This means you have more bolt length above the tile to mount your rail brackets

Low Profile:
The closer you install to the tile above, the lower the solar panels can be to the roof's surface. Just make sure the cap does not contact the tile above.

5. **Mark central to the rafter:**

The bolt centre can be as close as 10 mm to the rafter edge, however its best practice to be as central as possible.



Coring the holes

6. **Cut the 28mm hole**
   Using the 28mm diamond core bit, set the drill to the highest speed. Start cutting at a slight angle until a groove has been cut into the tile and slowly bring the coring bit perpendicular to the surface. This minimises the risk of the coring bit running away over the tile. Do not push down on the coring bit and let it do the work, gently 'wobbling' slightly as you go. Be careful not to contact the roof membrane / felt as the coring bit passes through

the underside of the tile or slate. Watch the instruction video at solveinnovations.co.uk

Sarking

Only for roof coverings with sarking installed

7. **Do not core through the sarking**:
   If your roof has battens on top of the sarking.

   Skip to the next section and install as usual. Make sure the bolt is secured into the rafter below, not just the sarking board.

8. **Core through the sarking:**
   If the tiles are directly on the sarking boards.

   After the 28mm coring bit has cut through the roof covering, continue to cut through the sarking, with the drill at maximum speed with the same technique as when cutting slate.

   Stop cutting when the coring bit has reached the rafter and remove the wooden plug.

9. **Clean up**
   Check you are on the rafter with a finger. Clean away all dust and debris with a damp cloth. This is important to ensure a good seal

10. **Insert the Drill Guide**
    Insert the SolVe drill guide into the 28mm hole and ensure it is firmly held concentrically and perpendicular to the rafter.

The drill guide may go flush into thick tiles but don't worry, you can easily pull it out by screwing a hanger bolt into the top by hand and pulling.

11. **Pre-drill the rafter**

Always use a **Brad Tip** or **wood auger** drill bit. Never use a standard drill bit as they will always wonder off centre, even with the drill guide in place.

Insert the 7mm Brad tip wood drill or auger into the drill guide, and drill 70mm into the rafter, being careful to keep the drill perpendicular to the rafter.

Mark your drill bit for 70mm hole depth
The drill guide is 60mm deep. To prevent over-drilling into the rafter, measure 130mm from the tip of the drill bit and mark this position on the shank of the bit with coloured tape. When the marking reaches the top of the drill guide, the hole will be 70mm into the rafter.

Installation

12. Install the pre-assembled SolVe Mount:

Ensure the seal has been screwed all the way to the bottom of the m10 thread until it stops, then back it off by ¼ a turn.

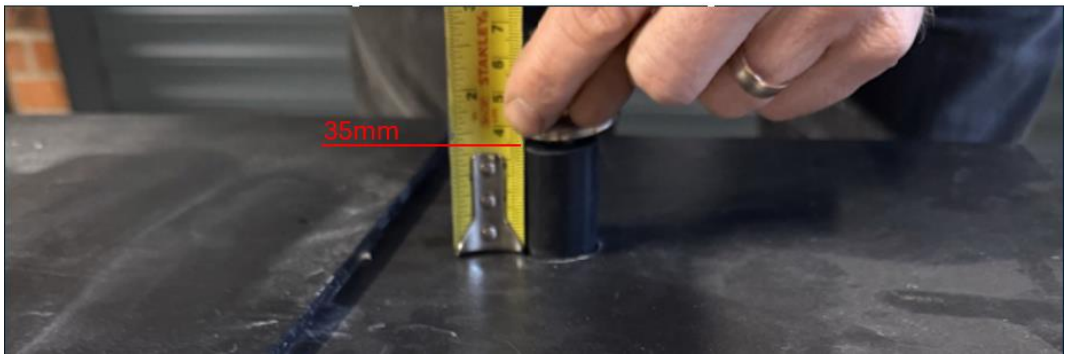
Using the 7mm hex socket and drill driver, install the SolVe mount ensuring it is concentric with the 28mm hole and perpendicular to the rafter.

IMPORTANT. Do not hold onto the seal while you drive or it will adjust it's self up the thread.

The hanger bolt should be driven until the coarse thread is fully into the rafter. This is easy to gauge because the base of the seal will stop the drill driver as it contacts the rafter. We recommend using the drill clutch to protect your wrists.

13. Check seal depth

The seal must protrude approximately **35 mm** above the roof covering.



14. Adjust the height of the seal

If the seal protudes less than 35mm, the height of the seal can be adjusted. Free off the seal by backing off the hanger bolt ½ a turn with the drill driver. Then adjust by hand by simply turning the seal. Turn clockwise to reduce the height or anti-clockwise to increase.

15. Extra clearance for thick roof coverings

For thick layered roof coverings such as natural stone or plain tiles, extra space should be provided to allow the seal to expand. In this instance, the seal should be adjusted in the same way to protrude around 40mm, allowing a larger height bulge to form. The cap should stop around 10mm from the roof covering.

16. Bolt Length check

For very thick roof coverings, a 200mm bolt may be insufficient to provide adjustment of the rail bracket so a SolVe a4-80 grade 250mm bolt may be substituted. Standard grade hanger bolts must not be used.

17. Install the cap

Slide the seal cap over the M10 hanger bolt.

18. Select the correct securing nut

Select the correct nut for your application:

a. If using adjustable L-Brackets or if the roof is flat enough that adjustment is not required, an upturned flange nut can be used to directly compress the seal, allowing for a low-profile installation.

b. When using flat-plate, non-adjustable brackets, a Nyloc nut must first be used to compress the cap before installing the upturned flange nut. This allows the flange nut to be positioned at any point along the thread for adjustment, while preventing the cap from loosening.


19. Begin to compress the seal

Push and twist the cap onto the top of the seal to make sure it is properly engaged into the small portion of the cap.

Hold the cap to prevent it from turning the seal and losing adjustment. Using a spanner, turn the M10 nut so it contacts the cap and compresses the seal.


20. Tighten until the cap is filled

Tighten the nut until the seal expansion fills the cap.

⚠ IMPORTANT: Remember the SolVe mount seals by expansion rather than compression so the seal does not need to be compressed onto the roof covering to form a seal. The seal MUST NOT expand any further than the diameter of the cap.

TOO COMPRESSED
Bulging outside the cap

JUST RIGHT
The bulge is within the cap

21. Adjust where necessary

Remember, you should have approximately 35mm of seal above thin roof coverings and around 40mm for thicker roof coverings

a. If you have too much seal above the roof covering, remove or loosen the cap and twist the seal clockwise to lower the seal.

b. If you do not have enough seal to fill the cap, twist the seal anticlockwise to raise the height.

c. Replace the cap and nut and compress the seal as usual.

The mount is now complete and a rail can be installed according to the bracket manufacturer's instructions.

20 Year Leak Free Guarantee

Register your installation on the SolVe Innovations website to validate the warranty. Unregistered installations are not covered under this guarantee.

SolVe Innovations guarantees that SolVe Mounts, when correctly installed in strict accordance with SolVe installation instructions and properly registered within 90 days of installation, will not cause roof leaks for a period of 20 years from the date of installation. The guarantee applies only

to leaks resulting solely from defects in the SolVe Mount product itself and is subject to compliance with all stated conditions, including certified installer requirements, completion of SolVe training, correct product selection, correct hole size, appropriate tightening, and successful installation registration via the SolVe Installer Portal. Full terms, exclusions, and claim procedures are available at www.solveinnovations.co.uk.