

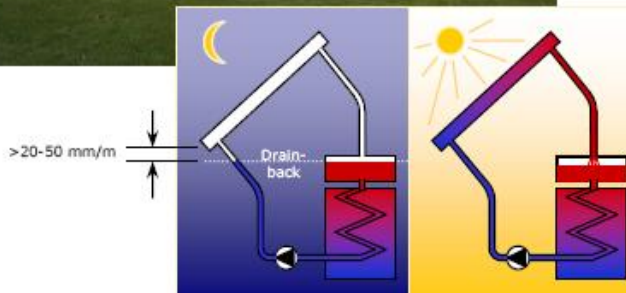
Installing a roof integrated collector (slates roof) COLLECTOR TYPE: **ZEN Renewables Thermic 4200 S**

(Also applicable for S1400, S2800, S5600)

Collector and flashing set:

The Thermic collector is designed for easy roof integration in slate roofs. Together with the flashing set it's a 6-hour job for a roofer to install the collector into a slate roof including the scaffolding. Always make sure that, before installing, you prepare the work according to current Health and Safety Regulations. See also Health & Safety instructions at the last page of this Manual.

APPLICATIONS: Small to large domestic hot water systems, industrial process and swimming pool heating.



POSITIONING:

The positioning of the collector will be determined by:

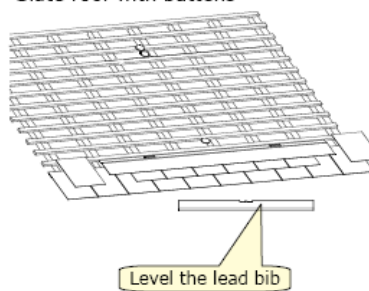
- Orientation: West, south and east is acceptable with a roof angle between 30° and 60°. See Information sheet collector orientation.
- Drain-back level (the lower connection of the collector should always be above it).
- The distance from the drain-back tank (the collector pipes should always be installed with a slope of >20-50mm/m). This to ensure that the collector circuit will drain.
- A nice looking place on the roof not too close to the edge or other obstacles on the roof. The higher in the roof the less shade a collector will have from obstacles.
- Be sure no rafters or beams are blocking the flow and return connections or the sensor location.
- Always start from a full slate directly below the collector.

POSITIONING OF THE LEAD BIB:

Positioning of the collector will be determined by:

- The exact position of the lead bib. The lead bib should be positioned above the slate (slate lath or batten) directly below the collector and lined up with the existing slates. The 2 marks left and right on the lead bib stand for the left and right side of the collector. Move the lead bib to the left or right to ensure that the gaps between the slates and the collector on the left and right side will be evenly divided. Gap 10-20mm.
- Mount the lead bib with the screws provided (a power screwdriver is recommended) on each rafter.
- *Slate roofs without battens (Scotland):* unscrew the batten attached to the lead bib before fixing the lead bib to the roof.
- Dress the lead onto the slates.

Slate roof with battens

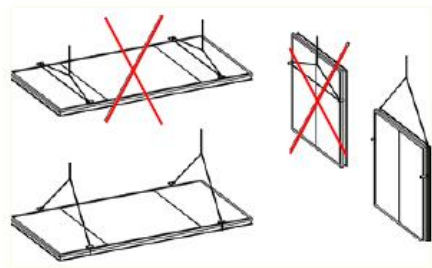


Slate roof without battens





Slate roof without battens



PREPARING PIPE AND SENSOR CONNECTION:

- Leave the tile laths (in case there are any) in place unless they are blocking one of the connections. Simply cut away only a small piece of the lath at the point of the obstruction.
- Depending on the roof construction cut out a piece of felt (80x80mm) with a knife at the location of the connections or use a hole saw of 83mm. The position of the holes can be marked out using a template or by measuring.
- Check inside the roof to ensure that there are no cables, wires or other obstacles at the location of the holes.

PLACING THE COLLECTOR:

- Do not fit pipe tails to the connections on the collector as this will hinder the placement of the collector. The connections are easily accessible from the inside of the building with a tap wrench or grips.
- Depending of the height and accessibility of the roof the collector can now be hoisted into position on the roof. Special attention is required to secure the straps around the collector in order to prevent them slipping during lifting.

The handles are not to be used as hoisting hooks.

- The lift weight per person should not exceed the weight limit of 25 kg per person.
- Once the collector is in position, slip the collector into the brackets on the lead bib and move it to the left or right to line it between the marks and to ensure that the gap between the collector and the slates on the left and right side are evenly divided.
- Slide in the top flashing.
- Fasten the sides of the collector with the screws provided.
- Remove the handles from the collector.

PLACING THE SIDE FLASHINGS:

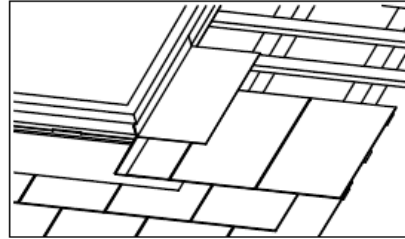
- Do not forget to slide in the top flashing before fastening the collector on the Roof boarding (or battens on the roof boarding).
- Slide in the soakers on the left and right side of the collector.
- Ensure that the soakers (standard length 600mm) slide under the top flashing and water will drain over the lead bib.
- Put a nail in each soaker to prevent it from sliding down and moving away from the collector.



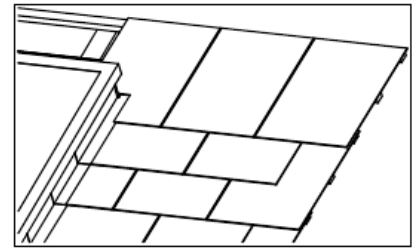


REPLACING THE SLATES:

- Start by replacing the slates on the left and right side of the collector. The gap between collector and slates should be 10-20mm.
- Cut the slates to the appropriate size as shown in the pictures.
- After replacing the slates along the sides, replace the slates above the collector.
- The gap between the tiles and the top flashing should be 20-50mm.



Place soakers and slates starting at the lead bib



Finish at the top by placing slates over the top flashing

FINISHING THE COLLECTOR INSTALLATION:

- Clean up the roof and check to see if any slates have been damaged (replace them) or moved.
- Bend open the water checks at the left, middle and right side of the lead bib to prevent water leakage.



**JOB DONE:**

- Starting time building the scaffolding 09.00h
- Finished job 16.00h.
- Wish the owner a lot of solar energy.

Health & Safety Preparations:

Always make sure that, before installing, you prepare the work according to current Health and Safety Regulations. With regard to the collector installation pay special attention to:

- Scaffolding: mount the scaffolding according to the appropriate instructions. Make sure the stabilising sections are mounted and fixed. Edge protection and toe boards must always be installed around the working platform according to current health and safety legislation.
- Ladders: only use ladders, which are approved with stabilising feet. Always secure the ladders against sliding. Never carry goods onto the ladder.
- Dust Suppression: only use approved electrical machinery with adequate dust protection whilst cutting slates, tiles or other materials.
- Personal Protection: in all cases have helmets, safety glasses, dust masks, safety shoes and ear protection ready and available. Wear them for your own safety.