

TECHNICAL DATA



SOLAR COLLECTORS

ecogise have three main types of solar collectors. In most cases we would recommend using the ECOV2.4 collectors unless the roof space is restricted or the customer requires a custom built system.

As we manufacture our systems we have the ability to custom build solar collectors to specific roof shapes. We also have the ability to design and build large commercial systems.

To achieve the optimum performance from your solar water heating system there are a few things that need to be taken into account when locating the solar collectors;

1. In New Zealand solar collectors need to be orientated facing geographical North wherever practical. A North East facing roof will have a morning bias, while a North West facing roof will have an afternoon bias to the system.
2. To achieve the greatest average performance throughout the year the pitch of the collectors should be similar to the latitude where the system is installed. Collectors pitched at under 20 degrees will be under-utilised and not self-cleaning.
3. Avoid shading of the solar collectors for at least 3 hours either side of the time at which the collectors are facing directly towards the sun (this is 12:00pm standard time and in summer 1:00pm clock time).
4. To avoid as much energy loss as possible choose the closest North facing roof to the water cylinder's location.
5. Check there is adequate roof space to mount the collectors, internal access for pipe work and the roof structure will withstand the added weight.
6. You can expect approx. 500watts of energy per sq/m of solar collector at peak ideal conditions if these criteria are met.

WATER CYLINDER AND SYSTEM SIZING

The Solar Industries Association recommend between 40–60 litres of water per person per day. This may vary from time to time depending on whether the house contains showers, baths or a spa, and household occupancy.

The saying “make hay while the sun shines” applies here. Ideally you want to store enough hot water during the day to last through the night and/or for overcast weather.

In most family sized situations we specify a 270 litre system with 2 x ECO-V2.4 solar collectors.

We also recommend that a medium pressure water system be used. With medium pressure you save on water, water heating costs, the system is cheaper and there is less pressure on system components so they will last longer.

For low and medium pressure systems we use copper water cylinders and for mains or high pressure we use stainless water cylinders. The water in the cylinder must be heated to above 65°C once a week. This is done electronically via the bottom element in the cylinder or with LPG in an off-grid home.



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MOUNTING: INSTALLATION, ROOF PENETRATIONS AND FIXINGS

Installation of the ecogise solar water heating system must be in accordance with Acceptable Solutions for Solar Water Heating (G12/AS2) and AS/NZS 3500.4. Our ecogise solar water heating systems must be installed and commissioned by an authorised ecogise installer.

Useful installation diagrams and building consent forms are available for download from our website: www.ecogise.co.nz

Orientation of the solar collectors should ideally be in an unshaded, northern direction and be pitched at an angle equal to the latitude of the location.

All of the ecogise roof fixings are designed and made by ecogise so that there is little or no weight loading on the roof cladding. The fixings penetrate through the cladding and into the purlins or extra dwangs fitted beneath the roof cladding.

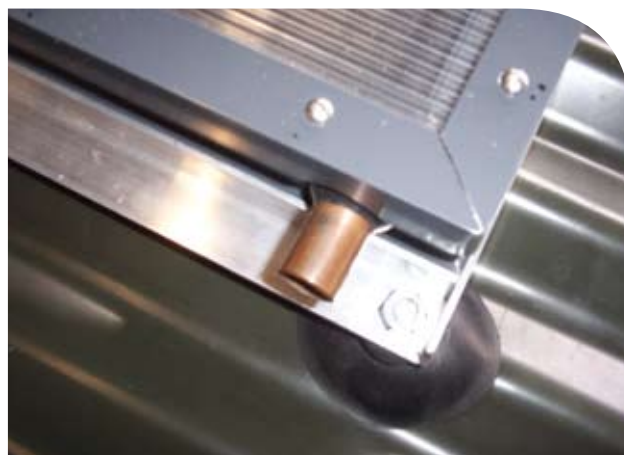
All ecogise solar panels of 1200mm x 2400mm must have at least 6 brackets fitted and extra fixings may be required in high wind areas.

Neutral spacers divide the fixing brackets from the roof cladding material.

Flexible rubber boots are used around the fittings to ensure there is no water ingress inside the roof.

There must be a 25mm gap beneath the panel so as not to restrict rainwater flow and a 50mm gap in coastal, geothermal and industrial areas for ease of cleaning the roof cladding.

ecogise - a system that works



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SYSTEM SPECIFICATIONS

These are the part numbers of complete systems. Family/user size guidelines shown in brackets. All of these systems are configured the same. The difference is the water cylinder size, the water cylinder pressure and the number of collectors.

ECO180CP24MD

(up to 3 people)
(180 litre, Closed Loop, Pumped, 2.4sq/m Collector size, Low or Medium Pressure)

ECO270CP48MD

(up to 6 people)
(270 litre, Closed Loop, Pumped, 4.8sq/m Collector size, Low or Medium Pressure)

ECO360CP48MD

(high water users, 6 or more people)
(360 litre, Closed Loop, Pumped, 4.8sq/m Collector size, Low or Medium Pressure)

ECO195CP24MA

(up to 3 people)
(195 litre, Closed Loop, Pumped, 2.4sq/m Collector size, Mains Pressure)

ECO300CP48MA

(up to 6 people)
(300 litre, Closed Loop, Pumped, 4.8sq/m Collector size, Mains Pressure)

ECO350CP48MA

(high water users, 6 or more people)
(350 litre Closed Loop, Pumped, 4.8msq/m Collector size, Mains Pressure)

Note: If any of these systems has a wetback then there will be a (W) on the end of the part number.

MAINS PRESSURE STAINLESS STEEL CYLINDERS

195 Litre – 560mmD x 1300mmH
300 Litre – 560mmD x 1920mmH
350 Litre – 560mmD x 2200mmH

LOW AND MEDIUM PRESSURE COPPER CYLINDERS

180 Litre – 540mmD x 1410mmH
180 Litre – 560mmD x 1240mmH
270 Litre – 540mmD x 2020mmH
270 Litre – 560mmD x 1800mmH
360 Litre – 610mmD x 1990mmH

NOTES

The water cylinders outlined in these systems are our most commonly used cylinders. We do have many other sizes available for fitting in roof spaces, under benches, or large custom built systems.

All ecogise systems are tested and approved to AS/NZS2712:2007 standards.