

REVISED Building Regulation Advisory Note No. 3/2013/A

Installation of Solar Arrays

Advice on new Solar Panel Exemption

New requirements to apply from 6 November 2013

Exemption provisions of the Tasmanian *Building Regulations 2004* relating to the installation of photo voltaic solar panels **have now been changed** to allow for a greater size of an array of panels to be exempted from the requirement for a building permit and to provide for the creation of a scheme for the accreditation of solar installers.

Revised exemption to apply from 6 November:

The exemption in regulation 4(r) of the *Building Regulation 2004* now reads as follows:

“Photo-voltaic solar panels installed on a building roof [are exempt] if –

- (i) the solar panels are installed by a person who holds a valid accreditation, to install solar panels, that is approved by the Director for the purposes of this regulation; and
- (ii) the solar panels are parallel with the surface of the roof and there is not more than 100 millimetres between the top of the roof and the underside of the solar panel; and
- (iii) the solar panels, or any part of the solar panels, do not overhang the roof surface at any point; and
- (iv) the solar panels are not within 200 millimetres of the edge of the plane of the roof; and
- (v) the solar panel array does not result in more than 100 kilograms of dead load being placed on any single point where the solar panel array is attached to the roof; and
- (vi) the solar panel array does not cover more than 38 square metres of –
 - (A) a single roof plane; or
 - (B) multiple roof planes that are supported by a single structure”.

Note: The previous exemption for all arrays less than 18m² has been replaced.

Where can I read the Building Regulations?

The title of the amendment is the *Building Amendment (Installation of Solar Panels) Regulations 2013*, statutory rule number 79 of 2013. This amendment has been incorporated into the provisions of the *Building Regulations 2004*. A link to *Building Regulations 2004* (including the revised regulation (r)) can be found on the Law website: www.thelaw.tas.gov.au then use the “advanced search” function using this phrase: “building regulations 2004”.

What does the new regulation mean?

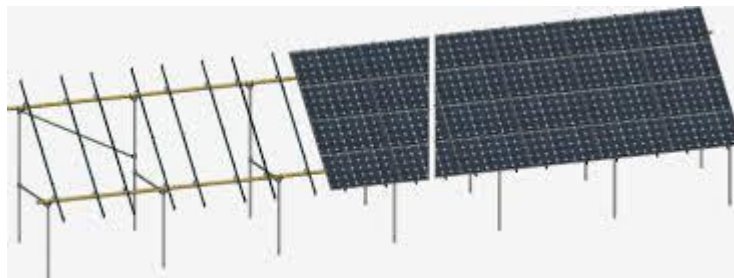
- **Size:** The maximum exempt size for an installation of solar panels parallel to the roof has been increased to 38m² (previously the maximum size of an exempt panel installation was 18m²).
- **Accreditation:** There is a future requirement that installers will need to be accredited by the Director of Building Control to undertake this type of installation work. Installers will have to undergo training in building modules that are relevant to the installation of solar panels. However this training requirement will not be commencing on 6 November. It will start in 2014 once the Director has specified suitable training courses and consulted further with installers and training providers.
- **Installation**
 1. The installation of the solar panels must be parallel with the plane of the roof and not raised more than 100mm above the roof surface. This means any panels on a roof which are tilted up at an angle on the frame do not fit within the new exemption;



Panels parallel with plane of roof-
Exempt



Panels tilted at an angle to the roof-
Not exempt



Panels supported on their own Class 10b structure are not exempt.

2. No part of the solar panels can overhang any part of the roof, and the panels must not be closer than 200mm from any roof edge, including the ridge, lower edge, a roof hip and a gable end. The roof edge does not include a roof gutter.



Not exempt!

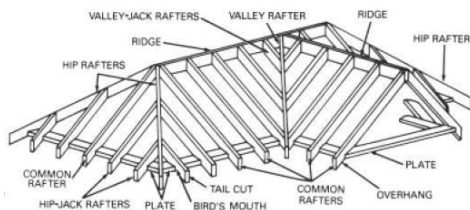
3. There is no point-loading from the array greater than 100 kg permitted on a roof structure.
4. An installation of 38m² can only be installed on any one roof plane of a building. If multiple roof planes are supported by a single structure (trusses, beams), the total area of the array cannot exceed 38m² even if the solar panel installation was split into smaller arrays on different parts of the same roof plane.
5. The use of the term “roof plane” allows more than 38m² on a total building roof provided the roof structures supporting the array are independent.



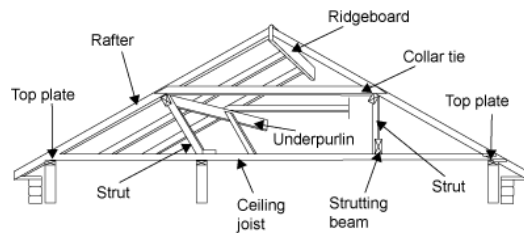
Different roof planes and independent roof structures.



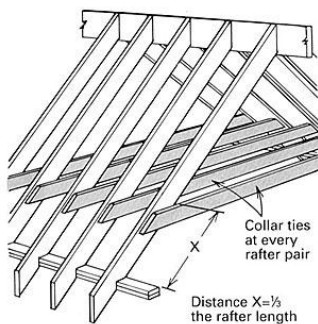
Different planes but not independent roof structures if truss construction



Conventional pitched roof. Different planes and probably independent roof structures. Internal structure not shown.



Conventional pitched roof. Different planes and independent roof structures. Loads on the left transmitted through underpurlin and strut to internal wall. Loads on the right carried by strutting beam.



Different planes. Not independent roof structures.



Different planes. Not independent roof structures.

What if a proposed installation will not fit within the requirements of the new regulation?

For any installation of panels where:

- Arrays of solar panels will be *larger than 38m² on any roof plane or roof structure*; or
- where panels are tilted up and any part of the underside is *more than 100mm* above the roof decking/ surface (for any size installation); or
- The point loading on the structure is likely to be *greater than 100kg*; or
- Panels will be *closer than 200mm* to an edge or will overhang it: -

The exemption does not apply and the owner of that building will have to obtain permission for installation. Compliance can be achieved in one of two ways:

1. If the material costs and installation/ fixing of the components supporting the panels on a roof will be \$5000 or less, then an accredited building surveyor may determine that the installation is a “*minor alteration*” and advise the council regarding their decision. The building surveyor effectively becomes the permit authority for minor alterations and minor repairs. The building surveyor will need to be satisfied that the existing roof structure is capable of taking the dead loads and wind loads imposed on it by a particular proposed solar array. This will require a level of documentation and sometimes a certificate from a structural engineer or other accredited building practitioner.
2. Alternatively, the owner will have to go through the normal process of obtaining a *building permit* from their local council as the installation of solar panels is an addition to that building. Larger arrays impose both dead loads (weight) and live loads (lifting or pushing action by wind) on structures. Proper assessment of the building’s supporting structure and design of the proposed installation are required before a permit can be granted.

Other related information:

What qualifies as a minor alteration?

To be a minor alteration of a building within the meaning of section 60(2) of the Act, the building work must not exceed \$5000. Above that amount, it cannot be “minor”. While the cost of “building work” is determined by what the owner has contracted to pay for the work, for solar array installation it is a class of *electrical work* that needs a building permit, so the actual cost of the building work component (panel mounting rails or framework and their fixing) is not the full retail price of the solar system that the client pays. If the building work component of the installation is \$5000 or less, it may be deemed to be a minor alteration by a building surveyor. The building surveyor will need to be provided with evidence from the owner of the cost of the building work components, including the relevant labour charge.

This advice is consistent with previous advice that the cost of building work for wind turbines does not include the cost of the generator and blades.

As a building permit is not required, other accredited *building practitioners* (building designer or builder) do not have to be engaged by the owner for the solar installation. If the installation work is carried out or managed by a licensed electrician an accredited builder is not required under the accreditation provisions of the Building Act. Council building permit fees and the government levies do not apply.

What is the role of the Building Surveyor?

The building surveyor effectively becomes the permit authority for minor alterations and minor repairs. The building surveyor will need to be satisfied that the existing roof structure is capable of taking the dead loads and live loads imposed on it by a particular proposed solar array. This will require a level of documentation and sometimes a certificate from a structural engineer or other accredited building practitioner.

If the solar installation cannot be determined as a minor alteration and a building permit is required, then the building surveyor will provide a Certificate of Likely Compliance as a document that is to accompany an application for the building permit.

What is the role of the Electrician?

The standard AS/NZS 5033:2012 *Installation and safety requirements for photovoltaic (PV) arrays*, requires that support structures and module mounting arrangements comply with building codes, regulations and standards. For new buildings, the electrician must be satisfied that the building surveyor was aware that a particular solar array was to be installed on the building. For existing buildings, if the solar array is over 38m², the electrician must be satisfied that a building permit has been issued for the proposed array and mounting arrangement, or have evidence that a building surveyor has determined that the building work is a minor alteration. An electrician will need documentary evidence in all cases. For a new building it will be a building permit indicating the proposed solar array. For an existing building it will be a building permit for the installation of the solar array or if it has been determined to be a minor alteration, a copy of the building surveyor's notification to the relevant council permit authority.

Solar panel installation - licensing and legislative requirements

- As mentioned earlier, the Director of Building Control will be developing an accreditation scheme for solar installers in 2014 and more details will be communicated to industry early next year.
- Electricians licensed in Tasmania who manage or perform electrical work that needs a building permit are specifically exempt from accreditation as a builder under section 23A of the *Building Act 2000*.
- For the owner to obtain Renewable Energy Certificates, installers must be accredited by the Clean Energy Council, a national industry body.
- The installation of a solar system is **not minor electrical works** and therefore under the Occupational Licensing Act it is notifiable work to the electrical safety inspection service.
- Worksafe Tasmania's Electrical Standards Branch is facilitating the testing of all solar installations in Tasmania.