

		Sheds		created	JL
				checked	OD
Tech. Bulletin	Rev.Nr. 1.1			valid from	10.10.2011

INTRODUCTION

Many sheds are not strong enough to support PV systems. A flush mounted PV array can be mounted on the roof of a shed if certain checks are made. Tilt-leg systems are not recommended for installation on shed roofs; but it is possible, if the shed frame is checked by a registered structural engineer.

BUILDING CODE & STRUCTURAL SUITABILITY

Sheds are Class 10a (non-habitable) structures under the Building Code of Australia. Furthermore, sheds with a floor area greater than 10 m² usually require a building permit.

However, many sheds have been constructed without reference to the building code, or without a building permit. In comparison with dwellings, sheds have a greater risk of being structurally unsound, or have little capacity to withstand higher loads. Therefore, caution and care should be exercised prior to installing PV arrays.

LOADS CREATED BY PV SYSTEMS

As a rough guide, a flush mounted system does not greatly increase the uplift load on the roof frame. The weight of the PV array can be supported by the roof frame if it has been designed to be “trafficable”, which is being able to support a live loading of 25 kPa (250 kg per square meter, or two heavy people standing next to each other on the roof). If the shed has been designed by an engineer according to the building code, then the roof can be assumed to be trafficable.

In contrast, tilt-leg systems can almost double the uplift load on the roof frame. This is why the roof frame needs to be checked by a structural engineer.

FLUSH MOUNTED PV ARRAYS

Prior to installing a flush mounted PV array on a shed, installers should confirm the following:

- The shed complies with the building code
- The shed was constructed according to the drawings
- The shed was constructed with a building permit

To confirm these, obtain the following information:

- a copy of the engineering certificate from the supplier of the shed
 - confirm that it is a “bolted” shed, not “Tek screwed”
- a copy of the building contract between the client and the registered builder
- a copy of the building permit from the local council

MEASUREMENTS FOR A STRUCTURAL ENGINEERING CHECK – TILT LEGS

Prior to installing a tilt-leg PV array on a shed, sales should obtain the following:

- Check general condition of the frame is acceptable (rust, borers) and confirm with photos
- Batten material, size, gauge (thickness), span and spacing
- Rafter (or truss or portal frame) material, dimensions, span and spacing
- Outside dimensions (length, width, height)
- Bay width and the location and size of any openings (windows and doors)
- Plans or a sketch of the whole shed
- Photos of the whole shed (outside) and detail photos of the internal framing

These measurements should be sent to a registered structural engineer (together with the address of the shed, and a sketch of the location of the array on the roof) to confirm that the frame can withstand the extra loads created by the PV array.

FURTHER INFORMATION

For further information contact Apollo Energy on 1300 855 484 or sunlock@apolloenergy.com.au.