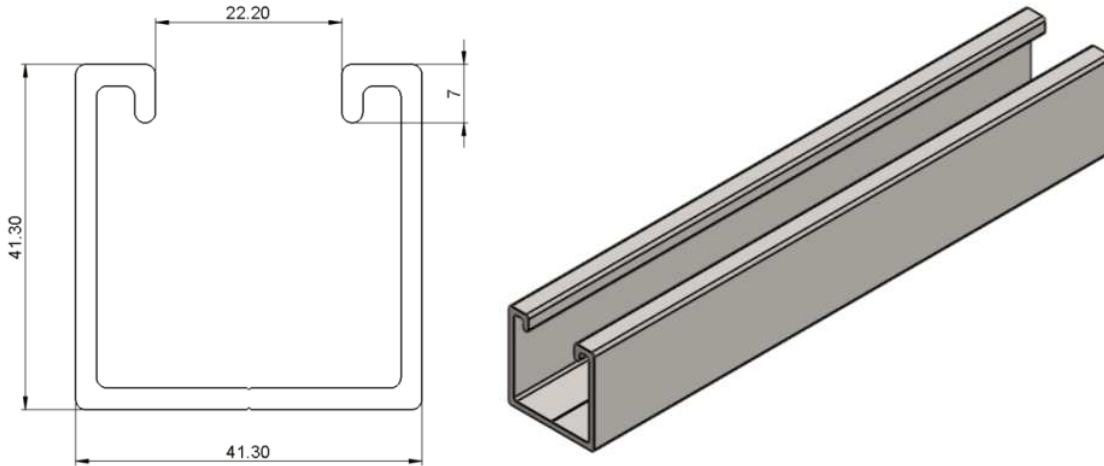


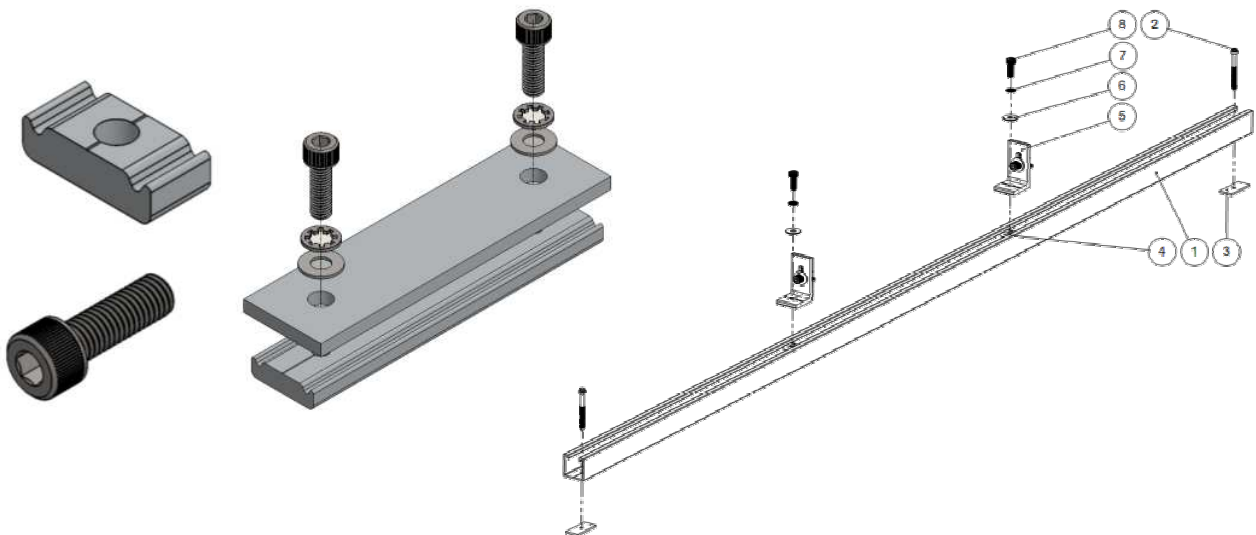
		SunLock Channel		created	JL
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Tech. Bulletin	Rev. Nr. 1.0			valid from	24.01.2012

INTRODUCTION

SunLock Channel is a lightweight and durable aluminum channel, suitable for use as a sub-frame to support SunLock solar PV frames. It is extruded from 6061-T6 aluminium for high strength and durability, and is available in custom lengths upon request.



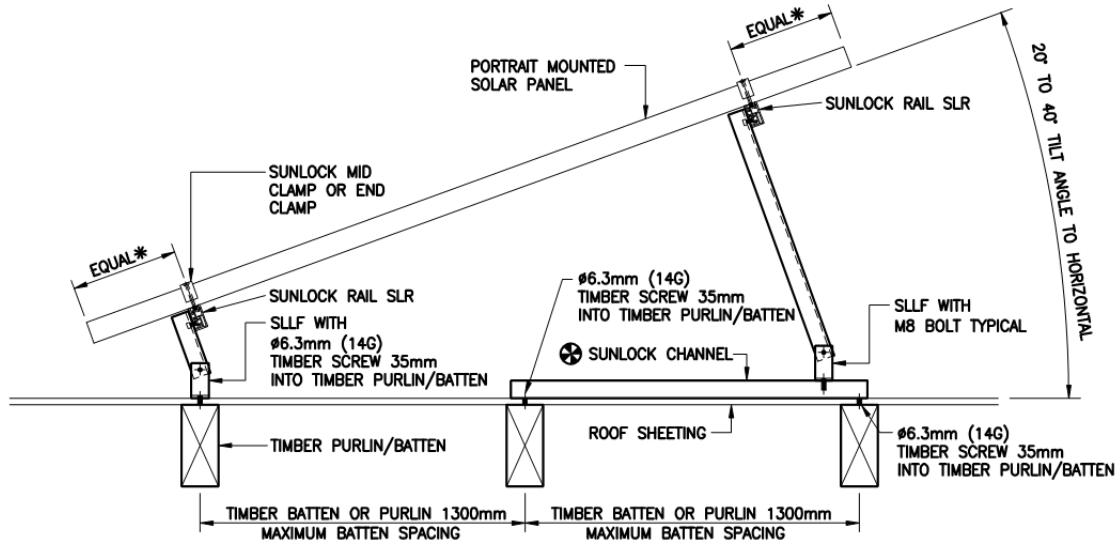
Accessories include SunLock channel nuts, M8 stainless steel machine screws and channel joiners. SunLock channel assemblies (SLCAxxxx) are also available in three lengths (1500 mm, 2000 mm and 3000 mm) and are supplied complete with roofing screws, EPDM washers, and pre-assembled with L-feet. Note: the SLCA1500 has only one L-foot.



SunLock Channel can be screwed or bolted to the roof structure using standard timber screws or steel bolts (drill a hole in the channel where required). SunLock L-feet can be attached to the channel using SunLock channel nuts and M8 stainless steel machine screws. The slots in the nut lock into the lips in the channel. The bolt goes through the SunLock L-foot and screws into the nut.

TYPICAL USES

SunLock Channel is used to support the rear leg in tilt arrays, as the rear leg is often not located directly over a purlin. Please refer to the SunLock Installation Manual v4 for further details including technical drawings.



Furthermore, SunLock channel can be used to build a sub-frame, allowing greater flexibility to position SunLock rails on the roof.

GUIDE TO USE

1. Identify where the PV array and L-feet should be located on the roof.
2. Measure the distance between purlins and cut the channel to length (the channel should overlap the fixing points by at least 40 mm).
3. Drill 7 mm diameter holes in the base of the channel for the roofing screws.
4. Fix the channel to the roof using roofing screws and EPDM washers from an L-foot. Position the EPDM washer between the channel and the roof sheet to prevent water ingress.
5. Mount the L-foot to the channel using a channel nut and a M8 machine screw. No EPDM washer is required between the L-foot and the channel.

ALWAYS USE ENOUGH FIXING POINTS

The primary aim of AS/NZS 1170.2 is to prevent injury to people and damage to infrastructure from PV arrays detaching from roofs in high winds and then hitting something. The risk of this occurring is negated by using a sufficient number of fixing points to attach the SunLock frame to the roof frame.

SunLock channel is an extra layer of framing between SunLock and the roof. It can spread the load, but does not mean that fewer fixing points can be used.

Step 1: calculate the total number of fixing points you need

Use the SunLock installation manual as usual, for the wind region and topography of the site. Use the fixing spacing from the table to calculate the total number of fixings for the whole frame. This could be, for example, 36 fixing points.

Step 2: determine how many fixing points can be attached to each channel

For example, if a section of channel crosses 4 purlins between the gutter and the ridge cap, it can use 4 fixing points.

Step 3: calculate how many sections of channels are needed

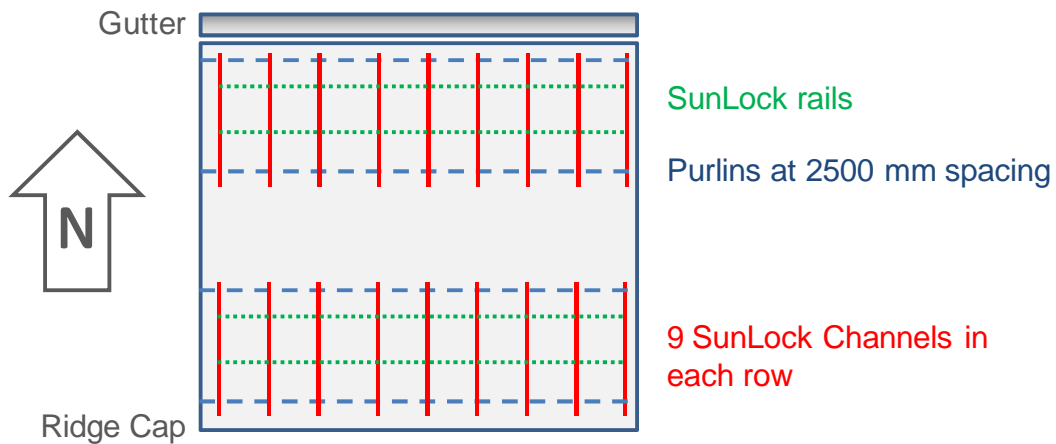
Divide the total number of fixing points for the job, by the number of fixing points per channel. For example, $36 \div 4 = 9$ channels are required. The channels can be roughly evenly spaced, based on the complexities of the site.

INSTALLATION EXAMPLE

In this case, two rows of 5 PV modules must be fixed to the roof. The problem is that the purlins are spaced at 2500 mm, which is too widely spaced to suit the SunLock rails. The site is in wind region A and the roof is pitched at 20 degrees, so we use drawing S5 from the SunLock installation manual v4. The "normal" fixing spacing can be determined by assuming a purlin spacing of 1200 mm, which produces a fixing spacing of 1100 mm in the internal zone and 555 mm in the edge zone.

The PV modules are ~1 m wide so the row of 5 modules is ~ 5 m long. In this example, the rows of fixings near the gutter and near the ridge cap are in the roof edge zone, so the fixing spacing has to be 555 mm. This results in 9 fixing points per rail = 18 fixing points per row.

SunLock Channels are laid North-South between the gutter and the ridge cap, and can attach to the roof at 4 points each (2 points per row). The number of channels required is $18 \div 2 = 9$. The channels are spaced as evenly as possible.



TECHNICAL & SUPPLY CHAIN INFORMATION

SunLock Channel Assembly

Sales code	SLCA1500, SLCA2000, SLCA3000
Material	Aluminium 6061-T6, with stainless steel fasteners.
Australian Standard Certification	Certificate of structural adequacy to AS/NZS1170.2:2011 as included in the SunLock installation manual.

SunLock Channel

Sales code	Custom lengths available on request
Material	Aluminium 6061-T6 with minimum yield strength 255 MPa. Bending strength 913 N.m (~ 3% higher than SunLock rail). Weight 0.97 kg/m.
Australian Standard Certification	Certificate of structural adequacy to AS/NZS1170.2:2011 as included in the SunLock installation manual.

SunLock Channel Nut

Sales code	SLCN
Material	Aluminium 6106-T6
Australian Standard Certification	Certificate of structural adequacy to AS/NZS1170.2:2011 as included in the SunLock installation manual.

SunLock Channel Joiner

Sales code	SLCJ
Material	Aluminium 6061-T6, with stainless steel fasteners.
Australian Standard Certification	n/a

FURTHER INFORMATION

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

