



Simple and Reliable Solar Power Generation

Segen Application Note – Schletter

Designing PV systems with the Schletter on-roof system

Introduction

Schletter is one of Europe’s largest producers of solar photovoltaic mounting systems and Segen is now stocking their standard on-roof systems, including mounting rails, roof anchors and module clips.

Mounting Rails

Segen offer a range of mounting rail strengths in standard lengths of 3.2m and 4.2m which may be cut to any length prior to shipment. These are ideal for runs of 3 or 4 X 60 cell modules.



for narrow spans

Rail **Eco05** pictured to the left is the lightest rail and **Solo05** on the right is a stronger version for wider spans.

Rails may be joined using **SLT-129001-001** for the lightweight rails and **SLT-129002-001** for the stronger rails.



for wider spans

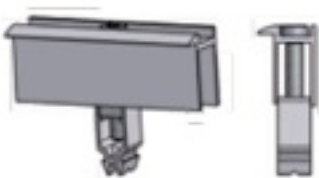
The stronger rail can be supplied with grey plastic end caps which significantly enhance the visual appearance for minimal extra cost - **SLT-129011-000**.



A fixing system for gently sloping metal roofs which allows the pitch of the solar modules to be increased by 7 degrees. Supplied in 4m (**SLT-121001-004**) or 6m (**SLT-121001-006**) lengths for the top rail pictured to the left and 4m (**SLT-121002-004**) or 6m (**SLT-121002-006**) lengths for the lower rail pictured to the right.



Module Clips



There are end clips to be used at the end of rows of modules and mid clips to fit between adjacent modules, both types are available in silver or black. The mid clips all support a range of module depths as they are simply tightened until the module is secure. The end clips come in sizes specific to the module depth or there are some universal clips which like the mid clips will work with a range of module depths

Listed on the wholesale portal on each module’s product details page are the types of mid and end clip which are most suitable for that module, either in silver or black as appropriate to the colour of the module frame colour.

The universal clips enable any size of module to be supported, but in general it is preferable to use a specific clip of the exact height to match the module being installed.

Segen stocks two ranges of clips, the Rapid2+ ones pictured above are the quickest and easiest to install but the alternative for use with a nut and bolt, pictured on the right, is cheaper to purchase thereby reducing the overall cost of the system. These require the appropriate nuts, bolts and washer which Segen suppliers and will automatically added to your quote if designed using the Segen on-line configuration tool.



Roof Anchors

The choice of roof anchors is never easy until you have gained experience and it is strongly recommended that you buy one of each type initially and use these samples when you go to site to do your site survey to help best determine the type to use on a job-by-job basis.

It is important to read the **Roof Anchor Installation** and **Wood Screw Edge Distances** manuals.



Segen is currently stocking the 35mm, **SLT-101002-000**, 45mm, **SLT-101001-000**, 55mm, **SLT-101003-000** and adjustable 40 – 54mm, **SLT-101004-000**, versions for horizontal rail mounting from the Rapid2+ range.

There is also a vertical rail mounting version: **SLT-101001-001**.



Part No: SLT-102001-000 - Roof Hook Slate Prefa

This is intended for slate roofs and can be supplied with a KlickTop attachment as Part No: **SLT-102001-003**.

A version with variable height is Part No: **SLT-102001-001**.



Part No: SLT-103001-000 - Roof Hook Plain Tile

This is intended for concrete tile roofs and can be supplied with a KlickTop attachment as Part No: **SLT-103001-004**.

A version with variable height is Part No: **SLT-103001-002**.



Part No: SLT-100001-000 - Roof hook Universal

This is the most universal of the pantile range, the roof anchor can be adjusted along the base plate and at the point of attachment to the mounting rail and can be supplied with a KlickTop attachment as Part No: **SLT-100001-001**.



Part No: SLT-100002-000 - Roof hook Eco G

The Eco G is the cheapest Schletter roof anchor and is ideal for areas with low wind loads and can be supplied with a KlickTop attachment as Part No: **SLT-100002-000**.

A version with variable height is Part No: **SLT-100003-000**.



Part No: SLT-100004-000 - Roof hook Eco S 135

The Eco is stronger than ECO G & V suitable for higher wind areas or where longer span distances are required and can be supplied with a KlickTop attachment as Part No: **SLT-100004-001**.

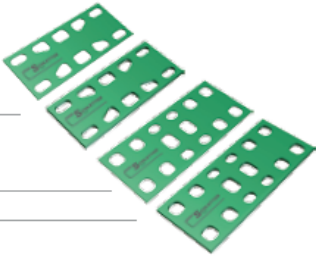
A version with variable height is Part No: **SLT-100009-000**.



Part No: SLT-109008-000 - KlickTop attachment for roof hooks

For roof anchors that do not have a KlickTop inclusive version the KlickTop attachment can be purchased separately.

Roof Anchor Adjustments



Where a fine adjustment is needed for the height of the roof anchor, you may use either 2mm, **SLT-973000-017**, or 5mm, **SLT-973000-018**, distance plates which are fixed between the roof anchor and the joist, to slightly raise the height of the roof anchor above the tile.

These are made from polyethylene and are precisely sized to fit the roof anchor base plate.

More details may be found in the **Distance Plates Data Sheet**.

Alternative Roof Anchors

Schletter make a range of other types of roof fixings for metal roofs and other applications.



A range of M10 anchor bolts in 200mm (**SLT-111110-200**) and M12 anchor bolts in 200mm (**SLT-111112-200**) and 300mm (**SLT-111112-300**) lengths. Each is supplied with a hanger bolt with vulcanized EPDM-sealing (UV resistant) and 3 flange nuts.



A range of seam clamps for various types of standing seam roofs, the most popular being the Kalzip (**SLT-112002-000**).

All the seam clamps require a Square head screw M10x25 (**SLT-943410-025**) and Flange nut M10 with locking teeth (**SLT-943912-010**).



A range of fixing for metal roofs as an alternative to the seam clamps for roofs with no standing seam to provide a base for fastening (e.g. titanium zinc metal roofs). Four versions are supplied, 200mm (**SLT-114001-000**) and 300mm (**SLT-114002-000**) or with KlickTop 200mm (**SLT-114001-001**) and 300mm (**SLT-114002-001**). When mounting on bitumen roof coverings there is an extra additional sealing rubber (**114004-000**).



A universal fastening for trapezoidal sheet metal roofs for steel and aluminum sheeting from 0.5mm / 0.02inches the **SLT-113009-100** Single Fix Solo Set. Contains 2 x Single Fix-V Solo and 4 self-tapping screws and is intended for use with the Solo05 mounting rail.



An alternative fixing for trapezoidal roofs **SLT-113002-001** Fix2000 KlickTop with rubber.

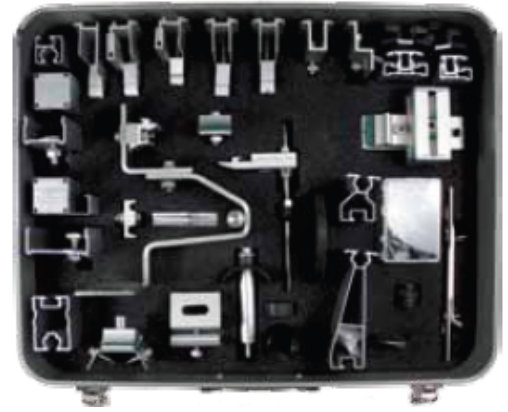
This product is only available by special order and detailed roof measurements must be taken using the gauging tool, **SLT-119009-000**. Lead time from order is typically 3 - 4 weeks with a minimum order quantity of 50 units.

Sample Case

An invaluable resource is the sample case, **SLT-195000-004**, which includes one of all the most common components of the Schletter on-roof system including;

- short sections of rails
- universal mid and end module clips
- roof anchor
- cable clips
- rails connectors
- seam clamps.

See the **Sample Case Data Sheet** for a full parts list.



Tools

There are some specialist tools available.



Left: Used for measuring a trapezoidal roof when specifying the required dimensions of the Fix2000 (**SLT-119009-000**).

Right: A drive-in device for SecuFix anti theft device(**SLT-182001-000**).



Further Documentation

Schletter provides a considerable number of documents to help you design and select the components for a roof mounting, all of which are easily downloaded from the Segen portal linked to all the relevant products.

- **Component Overview** – Contains images and a brief description of the entire Schletter range of products.
- **Roof hook mounting general application** hints and **Edge distances of wood screwings** – Provides detailed guidance on using Schletter roof anchors and how to fix them to the roof structure.
- **Mounting and project management** – Explains the mounting systems available and brief instructions on their use.
- **Data sheets** – There are numerous data sheets available for the individual product ranges.

Segen's online design tool enables you to quickly and reliably select all the components you need for a Schletter on-roof mounting system.

Please carefully read all of the Schletter documentation, which can be found on the Segen Wholesale Portal.

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