

SOLAR PV FLEX MAINTENANCE GUIDE

A GUIDE TO AXTER WATERPROOFING
SYSTEM MAINTENANCE



SOLAR PV FLEX

Solar PV Flex Maintenance Guide

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The following inspection and routine maintenance instructions are in addition to and must be read in conjunction with Axter's standard maintenance instructions for waterproof membranes.

A grid connected General Solar PV system is a potentially dangerous, high voltage electrical generator and should be inspected at least every six months to ensure that all system components are working correctly.

Appropriate maintenance should occur at least before the onset of both summer and winter. Axter recommend that all General Solar PV systems are fitted with monitoring software as this can give advance warning of potential problems and can provide the opportunity to perform corrective action before a problem becomes serious.

CAUTION

General Solar PV photovoltaic modules produce electrical energy when exposed to the sun, including under cloud, or other light sources. The power of an individual module is not considered dangerous but when connected in series and / or parallel the danger of an electric shock will increase.

The DC voltage produced by General Solar PV modules can reach up to 1000V during the day even if the inverter is not switched on. The module surface can become slippery when wet and operatives must follow appropriate safe working practices when accessing General Solar PV systems.

GENERAL ADVICE

- » Ensure that appropriate safety signs are in place at each access point to the installation.
- » When working on a roof, ensure you are properly tethered and that your safety equipment is in safe operating condition.
- » Avoid walking on photovoltaic modules and utilise access routes where provided.
- » Do not cut or fold the photovoltaic modules for any reason.
- » Do not apply screws, nails etc. and avoid letting pointed or heavy objects fall onto any part of the module. Such action could cause shock, generate flame, and invalidate any warranty.
- » Do not place any device on top of the photovoltaic modules.
- » Do not work on a Solar PV array when it is under standing water.

MAINTENANCE CHECKLISTS

Recommendations:

- » Identify product and system-specific inspection tasks and frequency
- » Ensure provisions are made for a competent person to carry these out, as necessary

As with other installed technology and appliances (for example, domestic and commercial boilers), all solar PV systems need professional inspection and maintenance to identify and resolve technical and other problems before and as they arise. Planned professional maintenance is important for:

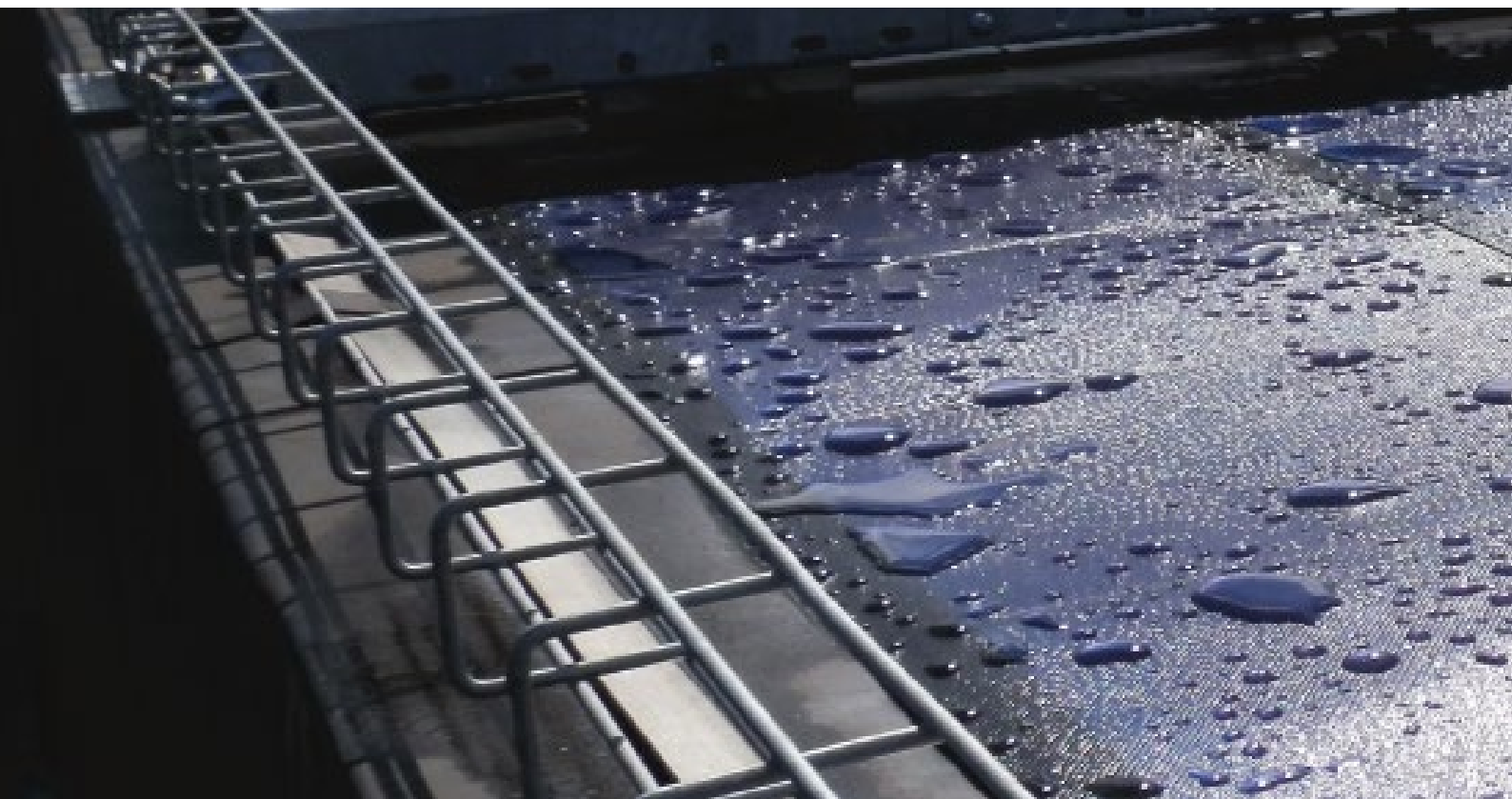
- » The mechanical and electricity safety and security of a system.
- » Performance and longevity.
- » Ensuring the system meets its owner's expectations.

Note that the suggested frequencies provided for non-domestic systems are recommendations for systems over 50KW in size. The Microgeneration Certification Scheme (MCS) has recently published an updated version of its Solar PV Standard, and Solar Energy UK recommends consulting this document for systems of less than 50KW in size, to which MCS applies. All three-phase electrical systems should be professionally inspected on at least an annual basis. For systems over 100KW, a six-monthly check is advisable, and for systems over 500KW, quarterly checks are advisable.

See section 6.2 (Occupier) & 6.3 (Competent person) of the SEUK O&M manual for the frequency and tasks recommended as part of a maintenance plan. Your Axter Solar PV Installer can provide a cost for this.

INSPECTION & MAINTENANCE GUIDANCE

- » Visually check that each laminate is bonded perfectly to the waterproof membrane. If any areas of the laminate are NOT perfectly bonded, mark the product with a permanent marker or crayon. If this de-bonding gets worse over subsequent maintenance visits, carry out the following repair advice:
- » Re-establish the adhesion by a combination of hot air and pressure from a Teflon coated roller or by applying Axter Solar fill glue and pressing the two elements together until they adhere.
- » Check the top surface of each laminate for any scratches or surface damage. Patch any surface damage in accordance with module manufacturer repair guidelines (contact your Axter representative) without delay. If the PTFE top surface becomes damaged and is not repaired quickly, system performance can be degraded and the laminate could fail.



CLEANING

The frequency with which a solar panel system should be cleaned depends on many factors. These include manufacturer requirements, the specific local soiling issues, and the environment – for example, birdlife in the area – as well as the actual installation itself. Solar arrays in size, design, panel angle and roof type and access, among other differences.

It is therefore important that cleaning is considered on a site-by-site basis, on with the individual needs of the site and its level of cleanliness considered in the context of the cost of cleaning and any impact on financial performance. Systems with module-level power electronics, which allow real time reporting of performance, will help enable detailed assessments of when cleaning should take place.

CLEANING PROCEDURE

Clothing: anti-slip rubber shoes and gloves.

Tools: soft brush, dry cotton mop or clean broom; low pressure water or portable pressurised water tank; biodegradable, non-abrasive mild detergent; clean water source.

- » Check earth connection of PV modules and inverter.
- » Examine the roof for damaged modules or persistent staining.
- » Remove all waste matter lying on the modules.
- » Wet the area avoiding the electrical cables.
- » Using a soft brush remove excess dirt.
- » Pressurised power washers should NOT be used directly on the laminates. If these devices are being used to clean the roof around a solar array, ensure that the nozzle of the power washer remains at least two feet away from the surface of the laminates at all times while cleaning.
- » When spraying a module, do NOT spray water directly on the electrical connections or at the leading edge of the PV laminate.
- » Use caution when cleaning PV modules, as the combination of water and electricity may present a shock hazard.
- » Use a soft brush to scrub stubborn stains, be careful not to scratch the surface.
- » Rinse with water to remove all traces of detergent.
- » Dry any puddles left on the roof post cleaning.





Axter Ltd

Harbour Landing, Fox's Marina,
The Strand, Wherstead,
Ipswich IP2 8NJ

axter.co.uk

01473 724056 technical@axterltd.co.uk
Registered in England No. 1446923