

Solar PV: Quality Bulletin

Solar PV Quality Guidance Series 2025-06-001 SPV

Introduction

Microgeneration is undergoing increasing popularity with homeowners. This is a big opportunity for your business. However, if we are going to scale up together, we need to bring about serious improvements in the quality of installations.

This bulletin outlines common technical non-compliance issues noted by SEAI for Solar PV installations. The information below is intended as guidance. All measures must be installed as per the <u>Domestic-Technical-Standards-and-Specifications.pdf (seai.ie)</u> and in accordance with the <u>SPV Code of Practice (seai.ie)</u>.

In Appendix 2 of the <u>Solar PV QADP (seai.ie)</u> document contains a full list of checks, used by SEAI inspectors. This list should be used to check your work, prior to completing and signing the Declaration of Works (DOW) form. **Nominated Personal must not sign the DOW stating that the works have been completed to standard if non-compliances are outstanding.**

Important Reminder:

As the top fails the following issues will face increased scrutiny by inspectors until standards are improved.

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- 1. Inverter installation
- 2. Battery installation
- 3. DC Cabling
- 4. Labelling
- 5. Documentation

1. Inverter Installation

Incorrect installation of inverters has become a common source of error and results in payment delays & reworks.

Inverters must be installed,

- On a flat vertical, fire-resistant (concrete/masonry) surface.
- In an accessible location
- Where not installed on a fire-resistant surface (such as attic spaces), they must be installed on a fire-resistant substrate (Class o) which extends to a **minimum of 150mm** beyond the edge of the inverter.
- According to manufactures specification.

See Code of Practice for all other requirements.

There has been increased instances of Installers overlooking the manufacturers specifications and only adhering to the 150mm rule above. Manufacturers have recommended installation distances that must be taken into account when installing on concrete/masonry or fireresistant substrate.

See example below of manufacturers requirements and inverter not adhering to such.



2. Battery Installation

Since 16th February 2022, Battery Energy Storage Systems (BESS) are no longer funded under the Solar PV Scheme. Inspectors are coming across increasingly high numbers of BESS that are failing inspection, however, as they remain a part of many systems it's important to ensure they are installed safely and to code.

Batteries must be installed,

- Wall mounted BESS must be installed on a flat vertical surface, according to manufacturer's recommendations, with adequate surrounding space to allow for ventilation.
- Floor mounted BESS must be fixed in place on a flat horizontal surface, according to manufacturer's specifications, with adequate surrounding space to allow for ventilation.
- Where BESS are not installed on a fire resistance surface (such as in attic spaces), they must be installed on a fire-resistant substrate (Class o) which extends to a **minimum of 150mm** beyond the edge of the battery.

See Code of Practice for all other requirements.

Like with inverters, many contractors are overlooking the manufacturers recommend installation guidelines. These must be taken into account along with the requirements from the SEAI Code of Practice.

See example below of incorrect installation of battery in unsuitable space and without adequate fire-resistant materials used.



3. DC Cabling Mechanical Protection

Third most common non-compliance inspectors are finding is with DC Cabling protections on the array and at point of entry to attic.

DC Cables must,

- Be suitably secured when routed from the PV module array across the roof area to the entry point to the building.
- Cables must not be exposed to excessive movement from wind or any other mechanical stress due to their installation.
- DC Cables must be mechanically protected at points of entry from wear and tear.
- Existing weather tightness must not be compromised at point of entry.

See Code of Practice for all other requirements.

Lack of mechanical protection at entry point is a recurring failure on inspections, see below on left. Cables MUST be secured to protect from fraying, as seen in image on right.





4. Labelling

Incorrect and missing labelling of SPV installations and the associated boards continues to be the highest On-Site non-compliance recorded during inspections, accounting for over 20% of all failures so far in 2025. Labelling is an integral part of a successful installation and is a very important safety feature in the event of an emergency.

Please pay particular attention to check for potential sub boards in external sheds and outhouses. These are often overlooked when labelling the installation.

The required safety labels are as follows:

- In ESB meter cabinet. Add locations of emergency switches
- In/On consumer unit and all distribution boards. Add locations of emergency switches
- At breakers in consumer unit and sub-boards.
- At/On inverter AC Isolator
- At/On PV System DC Isolator
- At/On battery AC or DC isolator
- On String Invertors
- On Automatic Isolator
- On all off-grid AC supplied boards and equipment
- At check meter
- DC Cabling

All Safety and Information labels can be found in the <u>SPV Code of Practice</u>, in section 7 Annex Labels.

Take time to brief new and existing crews on the importance of good labelling practice. For each label missed the Homeowner is notified that their grant is delayed, the Contractor must revisit the house & provide evidence, Impacting on time, productivity, cost and inspection rate.

5. Documentation

Missing and incomplete homeowner documentation is the second highest Non-compliance noted by inspectors so far this year. All the below documents are required for each & every application. Please ensure you have a process in place for efficiently gathering this information and sharing it with the Homeowner.

Please pay particular care to ensure there is a **HARD COPY** of **Start-up/Shutdown Manual** on site and this is easily accessible to both homeowner and emergency personal in the event of an issue. These manuals should be laminated and located close to the SPV System and preferably secured by a tie wrap or other device.

The following documents are required for inspections-to be shared with Homeowner.

- Basic start up, shut down, safety, operation and maintenance document (Hard Copy)
- O&M Equipment Manuals
- Datasheets for PV modules, Inverters, BESS system
- Warranties for PV modules, BESS system
- Estimation of system performance calculated using common estimator tool, considering location, orientation, pitch, shading etc.

Please ensure to discuss with Homeowner the importance of retaining these documents for future use and that they will be required for inspection if their property is selected.

See image below, Basic Start Up/ Shut Down document fixed in an easy accessible position in close proximity to the system.







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