

## Solar Energy South Africa

# Photovoltaic panel grounding wire aperture requirements



**Low Voltage  
Lithium Battery**

**6000+** Cycle Life



## Overview

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Always use #6 AWG bare copper wire for outdoor grounding to meet National Electric Code requirements and pass inspections. What are equipment grounding requirements for PV systems?

Equipment grounding requirements for PV systems are covered in 690.43. These requirements include the bonding and grounding requirements for exposed metal parts of PV systems such as metallic module frames, electrical equipment, and conductor enclosures [690.43 (A)].

Do solar PV systems need to be grounded?

Key points from the NEC: The code requires all non-current-carrying metal parts of the solar PV system to be grounded. It specifies the minimum size of grounding conductors (more on this later). The NEC also outlines requirements for grounding electrodes (like ground rods) and how they should be installed.

Do solar arrays need grounding?

Hi, Do solar arrays (the frames) need grounding?

The inverters in most cases are DC (and isolated from mains) and indeed micro-inverters are class 2 with isolated DC inputs from the array. I think if the installation has a TN-C-S earthing system, connecting the roof frame to ground would potentially cause an issue if there was a PEN fault.

Do I need a grounding electrode for a PV array?

While a separate grounding electrode system is still permitted to be installed for a PV array, per 690.47 (B), it is no longer required to be bonded to the premises grounding electrode system. In PV systems with string inverters, the equipment grounding conductor from the array terminates to the inverter's grounding bus bar.

Does a PV array need a grounding conductor?

Since the PV array and other electrical equipment in PV system, e.g., inverters, are often located remotely from one another, 690.43 (B) requires that an equipment grounding conductor (EGC) be run from the array to other associated equipment.

What is a solar substation grounding guide?

Abstract: This guide is primarily concerned with the grounding system design for photovoltaic solar power plants that are utility owned and/or utility scale (5 MW or greater). The focus of the guide is on differences in practices from substation grounding as provided in IEEE Std 80.

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### The Ultimate Guide on How to Ground Solar Panels

Step 3: Connect grounding conductor: Connect a grounding conductor, typically a copper wire, from the grounding electrode to the solar panel mounting structure or inverter. Ensure proper sizing of the conductor based on ...

### How to Ground Solar Panels: A Simple Step-by-Step ...

The solar panel frame grounding and solar panel mounting grounding are very important here. It's crucial to connect these parts well to the grounding electrodes. This way, electricity flows safely into the ground. Good ...



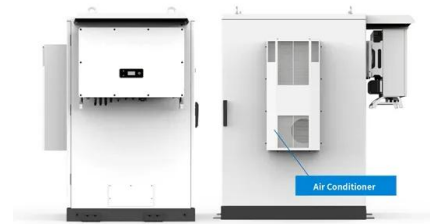
### 64-4-\* Wiring methods for solar photovoltaic systems

Ontario Electrical Safety Code - Bulletins  
 ©Electrical Safety Authority Bulletin 64-4-4 Page 5 of 9 Photo B4 - Examples of acceptable screening for protection against rodents 4) Accessibility to ...

### Guidelines for Designing Grounding Systems for Solar ...

Grounding and bonding is a subject area that can be confusing to many. In this blog post, we summarize key points according to the NEC. The

NEC is the primary guiding document for the safe designing and installation ...



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