

Technical guidance sheet 2.5

Earthing



This guidance provides further information to support installers' understanding of applicable requirements in AS/NZS 5139:2019 *Electrical installations – Safety of battery systems for use with power conversion equipment* in relation to correct and adequate earthing.

To help installers maintain standards, this document includes installation advice and examples of installations that may not be meeting the requirements relating to earthing of battery energy storage systems.

Standards referenced:

- » AS/NZS 3000:2018 *Electrical installations "Wiring Rules"*.
- » AS/NZS 4777.1:2016 *Grid connection of energy systems via inverters Part 1: Installation requirements*.
- » AS/NZS 5033:2021 *Installation and safety requirements for photovoltaic (PV) arrays*.
- » AS/NZS 5139:2019 *Electrical installation – Safety of battery systems for use with power conversion equipment (PCE)*

This guidance is part of a series we commissioned TechSafe Australia (sheets 2.1 and 2.2) and Grey Sky Solar Consulting (sheets 2.3 – 2.5) to develop. Energy Safe Victoria has also reviewed this guidance.

In series 2:

- 2.1 Physical protection of battery systems
- 2.2 Battery system protection against the spread of fire and battery system protected locations
- 2.3 Protection of wiring and wiring systems
- 2.4 Labelling

2.5 Earthing (this sheet)

Correct and adequate earthing:

For Grid Connected Battery Energy Storage Systems (GC BESS)

Manufacturers may require specific points on their equipment to be earthed.

It is a fundamental principle that manufacturers' installation instructions shall be followed.

Standards referenced:

- » AS/NZS 3000:2018 Clause 1.7.1 (c)
- » AS/NZS 4777.1:2016 Clause 2.1
- » AS/NZS 5139:2019 Clause 3.1.



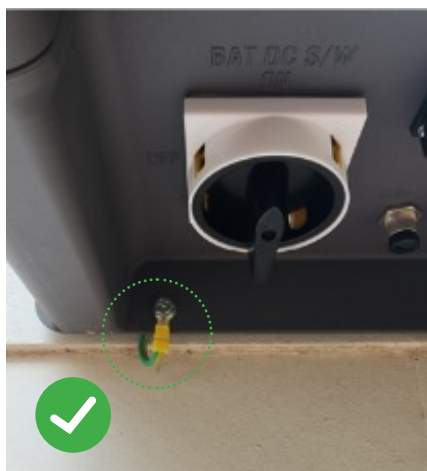
Figure 1.1

Note: The manufacturer's earth point in the above image has not been correctly earthed.

For installations comprising a single Battery Energy Storage System (BESS) with a voltage greater than DVC-A, all metallic equipment enclosures associated with the BESS shall be bonded together to the earthing system of the electrical installation to prevent a shock hazard using a minimum bonding conductor size of 6mm².

Standards referenced:

- » AS/NZS 5139:2019 Clause 5.3.1.7



More information

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