

## New standard for renewable energy battery storage installations

AS/NZS 5139 *Electrical installations-Safety of battery systems for use with power conversion equipment* outlines safety requirements for installation of renewable energy battery storage equipment.

The Electrical Safety Office investigated a fire in a battery installation in a home in December 2018 that caused significant damage. The battery installation was of poor design and there have been other fires in battery systems throughout Australia. While such fires are not epidemic in Australia, they highlight a need for consistent application of requirements for battery storage installations.

Designers and installers in Queensland have a duty under the *Electrical Safety Act 2002* to ensure their battery storage installs are, as far as is reasonably practicable, electrically safe. As such the information in AS/NZS 5139 should be considered immediately for new battery storage installations. This standard should be read in conjunction with other relevant standards including AS/NZS 3000 wiring rules, AS/NZS 4777 series for grid connect systems or AS/NZS 4509 series for standalone systems. AS/NZS 5139 will be referenced in AS/NZS 3000 in due course.

This new standard provides:

- requirements for safe installation of battery systems connected to power conversion equipment (inverters) for the supply of power to an electrical installation
- a risk-based process to ensure appropriate installation methods are applied depending on identified hazards
- requirements for grid connected inverter energy system and standalone power system installations
- requirements if the battery system is constructed on site and used in conjunction with an inverter
- requirements if the battery system is a pre-assembled integrated battery energy storage system (BESS) (e.g. a pre-built battery and inverter integrated in one equipment enclosure)
- requirements if the battery system is pre-assembled battery system equipment (BS) (e.g. a self-contained pre-built battery box to be connected to an inverter)
- a substantial number of informative components so that the level of knowledge and understanding in this new field of technology and its application is increased.

Designers and installers should consider using a pre-assembled integrated battery energy storage system (BESS) and pre-assembled battery system equipment (BS) that are shown to comply with the [Best Practice Guide: battery storage equipment - electrical safety requirements, V1.0 2018](#) . The installation requirements in AS/NZS 5139 are streamlined for equipment that complies with the guide. Independent evidence of battery equipment complying with the guide could be a certificate from an Australian accredited certifier or be on an industry association listing such as the [CEC approved batteries list](#) .

## Further information

Find more information,

- for the community at [electricalsafety.qld.gov.au](https://electricalsafety.qld.gov.au)
- for electrical workers at [WorkSafe.qld.gov.au](https://WorkSafe.qld.gov.au)

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