

The following signage should be used for battery storage systems:

- Sign indicating that there is a battery energy storage system onsite;
- Sign indicating that the switchboard has an alternative backup power system (if backup function is present);
- Danger of battery explosion from open flames, sparks and smoking, electrolyte burns etc (install only relevant signage);
- System shutdown procedures;
- Indicating which circuits are connected to the BESS;
- Warning sign that switchboard when operating in backup power mode that the neutral and earth circuits could still be live (if backup function is present);
- Battery cables should be labelled at a minimum of every 2 metres;
- If multiple distinct and serviceable battery systems are onsite, they should be distinctly labelled;
- Main switch of Inverters connected to battery source must read “main switch (inverter supply) – BESS” or otherwise indicate that it is an inverter supply of a battery source.

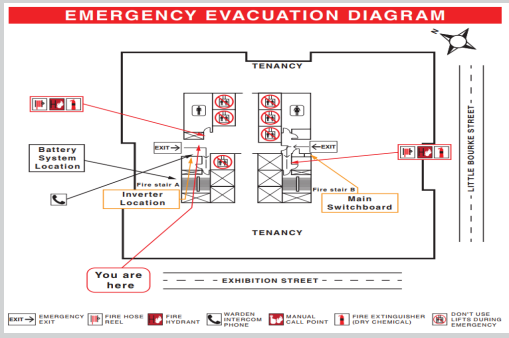


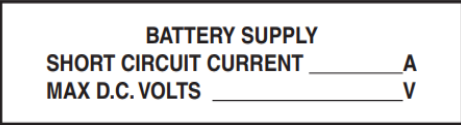
#### AUSTRALIAN STANDARDS

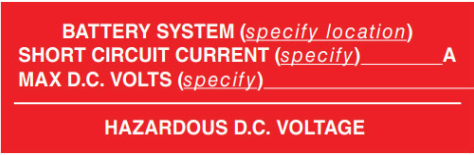


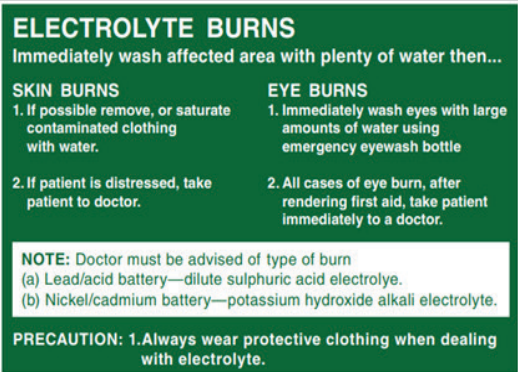

Signs from **AS/NZS 5139:2019** should be adhered to. In addition, the signage required for grid-connect inverter systems as specified in **AS/NZS 5033:2014** and **AS/NZS 4777** (series) should be adhered to.

#### REMEMBER

Typical examples of signs relating to the battery system or BESS can be found in **AS/NZS 5139:2019** Appendix B.

**Table 10.2:** Example warning signs for a grid-connected PV system with battery storage.

<p><b>Main switchboard and main metering panel</b></p> <p>Example of battery location signage</p> <p><b>AS/NZS 5139:2019</b> Clause 7.4</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Typical sign for restricted access</p> <p><b>AS/NZS 5139:2019</b> Clause 7.5</p>	
<p><b>Adjacent to the restricted access sign</b></p> <p>Typical sign for specific PPE requirements</p> <p><b>AS/NZS 5139:2019</b> Clause 7.5</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Typical sign for battery system voltage</p> <p><b>AS/NZS 5139:2019</b> Clause 7.6</p>	

<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Typical sign for battery system with voltage greater than DVC-A</p> <p><i>AS/NZS 5139:2019</i> Clause 7.6</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Example sign for explosion hazard</p> <p><i>AS/NZS 5139:2019</i> Clause 7.8</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Example sign for toxic fume hazard</p> <p><i>AS/NZS 5139:2019</i> Clause 7.9</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Example sign for electrolyte burns</p> <p><i>AS/NZS 5139:2019</i> Clause 7.10</p>	
<p><b>Adjacent to the battery enclosure or on all doors to the battery room</b></p> <p>Example sign for arc flash hazards</p> <p><i>AS/NZS 5139:2019</i> Clause 7.11</p>	

<p><b>Adjacent to the battery system</b> Spill safety signage labelling</p> <p><b>AS/NZS 5139:2019</b> Clause 7.19</p>	<div data-bbox="1026 253 1422 479"> <p><b>IN THE EVENT OF LIQUID DETECTED IN THE BUND, USE LABELLED SPILL KIT AND PPE TO REMOVE LIQUID. REPORT FAILURE IMMEDIATELY TO SUPPLIER UN: _____</b></p> </div>																
<p><b>Adjacent to each BESS</b> Example battery enclosure source label where there are multiple battery supplies. To be located on individual battery enclosures.</p> <p><b>AS/NZS 5139:2019</b> Clause 7.6</p>	<div data-bbox="968 526 1434 685"> <p><b>MULTIPLE BESS SUPPLIES</b></p> <p><b>BESS # 1/4</b></p> <p><b>SHORT CIRCUIT CURRENT _____A</b></p> <p><b>MAXIMUM D.C. VOLTS _____V</b></p> </div>																
<p><b>Main switchboard and main metering panel</b> Example of energy storage label required for emergency workers, including the UN number. Ensure the UN number of battery chemical type displayed is indicative of the battery chemistry installed. The table displays the UN number for common battery types.</p> <p><b>AS/NZS 5139:2019</b> Clause 7.3</p>	<div data-bbox="1102 734 1313 931"> <p><b>ES</b> UN: 3480</p> </div> <table border="1" data-bbox="986 947 1444 1184"> <thead> <tr> <th>UN number</th><th>Battery chemical type</th></tr> </thead> <tbody> <tr> <td>UN 3480</td><td>Lithium ion (including ion polymer)</td></tr> <tr> <td>UN 3090</td><td>Lithium metal batteries</td></tr> <tr> <td>UN 2794</td><td>Flooded lead acid battery</td></tr> <tr> <td>UN 2800</td><td>Valve regulated lead acid battery</td></tr> <tr> <td>UN 3496</td><td>Nickel-metal hydride battery</td></tr> <tr> <td>UN 2795</td><td>Nickel cadmium battery</td></tr> <tr> <td>UN 3292</td><td>Sodium ion batteries</td></tr> </tbody> </table>	UN number	Battery chemical type	UN 3480	Lithium ion (including ion polymer)	UN 3090	Lithium metal batteries	UN 2794	Flooded lead acid battery	UN 2800	Valve regulated lead acid battery	UN 3496	Nickel-metal hydride battery	UN 2795	Nickel cadmium battery	UN 3292	Sodium ion batteries
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<p><b>Adjacent to PCE connected to the multiple battery systems</b> Typical warning sign for inverters connected to multiple battery systems</p> <p><b>AS/NZS 5139:2019</b> Clause 7.12.3</p>	<div data-bbox="971 1234 1450 1361"> <p><b>WARNING</b></p> <p><b>MULTIPLE BATTERY SYSTEMS</b></p> <p><b>TURN OFF ALL BATTERY SYSTEM ISOLATORS TO ISOLATE EQUIPMENT</b></p> </div>																
<p><b>Adjacent to each disconnecter for DVC-B and DVC-C systems</b> Typical warning sign for isolation switches for battery systems above DVC-A</p> <p><b>AS/NZS 5139:2019</b> Clause 7.12.4</p>	<div data-bbox="1015 1429 1409 1556"> <p><b>WARNING</b></p> <p><b>DO NOT DISCONNECT UNDER LOAD</b></p> </div>																
<p><b>Adjacent to the PCE and visible from the equipment to be operated in the event of a shutdown</b> Battery safe isolation procedure located at the battery system isolation point</p> <p><b>AS/NZS 5139:2019</b> Clause 7.16</p>	<div data-bbox="983 1612 1428 1919"> <p><b>SHUTDOWN PROCEDURE</b></p> <p><b>INSERT APPROPRIATE STEPS FOR SAFE SHUTDOWN</b></p> <div data-bbox="997 1832 1422 1919"> <p><b>WARNING</b></p> <p><b>BATTERY SYSTEM D.C. ISOLATORS DO NOT DE-ENERGISE THE BATTERY SYSTEM AND BATTERY SYSTEM CABLING</b></p> </div> </div>																

**Isolation devices**

Battery isolator signage in a prominent location

**AS/NZS 5139:2019** Clause 7.12.2 and 7.13.1



Where an external RCD is required for an inverter, warning signs are required indicating the type of and rating of the RCD required.

The installer should ensure that appropriate DRM labelling is either already provided on the inverter by the manufacturer or is applied to the inverter as required. This label shall indicate the demand response modes of which the unit is capable. It shall indicate on the label which functions have been connected and enabled.

## 10.11 Safety Equipment

The system should include the installation of all relevant safety equipment in accordance with the relevant standards. Examples of safety equipment that could be included:

- Eye wash bottles;
- Bicarbonate of soda;
- Water storage;
- Goggles and gloves as well as any additional PPE specified such as a bib apron, boots, etc.

**AUSTRALIAN STANDARDS**

See **AS/NZS 5139:2019** and **AS/NZS 4509.1:2009** for safety equipment related to PV systems and battery storage.