|  |
| --- |
| Understanding the Battery Audit Checklist Version 1.4 |
| Auditors for the Solar Homes Program use this checklist when they conduct audit inspections of solar battery installations. |

## This checklist:

Is specific to the Solar Victoria solar battery rebate stream.

Comprises the questions for the audit of rebated solar battery installations nominally performed within six months of the solar battery installation date – focusing on safety and standards.

Is NOT an audit checklist for solar battery installations more broadly.

Is NOT a checklist for installing a solar battery system.

## 

## What do auditors look at when they conduct inspections?

Auditors will assess the following components of an installed battery system

Page

[Switchboard and Labelling 2](#_Toc103768159)

[Existing Solar](#_Toc103768160)

[Battery General](#_Toc103768161)

[BESS (Sect. 4 of 5139)](#_Toc103768162)

[BS (Sect. 5 of 5139)](#_Toc103768163)

## What do these ratings mean?

Auditors will apply one of these ratings to each question in this document:

|  |  |
| --- | --- |
| **Unsafe** | This means there is a safety hazard which poses an imminent risk of damage to property or persons and that the system will be shut down. |
| **Needs Rectification** | This means the system does not meet key safety and quality clauses in the standards/guidelines for installation. The installation does not pose an imminent safety risk but may be at risk of becoming unsafe in the future. |
| **Improvements Identified  (For Information)** | This means the system does not pose a safety risk but was found to not comply with all standards and guidelines. Improvements identified are provided as information and guidance for retailers and installers. |
| **Adequate** | This means no evidence of material non-compliance with standards or guidance was found and that the system was installed satisfactorily. |

They will also document other details for information purposes only.

\* Grey fill and **bolded** checklist items indicate new questions.

\* Grey fill checklist items indicate changes to ratings or wording.

# Switchboard and Labelling

| **Checklist item** | **Question** | **Relevant standards/ reference** | **Applicable rating** |
| --- | --- | --- | --- |
| Label 2 | Is signage, consisting of circular, green reflector of at least 100mm in diameter, with the letters "ES", installed immediately on or adjacent to the meter box and switchboard, and is readily available to be seen by approaching emergency workers? | AS/NZS 5139:2019 CL7.3, Appendix B CLB2 | Needs Rectification |
| Label 3 | Is the United Nations number for the primary chemistry installed below the "ES" lettering, e.g. UN3480? | AS/NZ S5139:2019 CL7.3, Appendix B CLB1 | Improvements Identified |
| Label 4 | If the Battery Energy Storage System is not easily located, is there a plan or drawing showing the location of the Battery Energy Storage System located at the main switchboard which includes the location of shutdown procedures? | AS/NZS 5139:2019 CL7.4, Appendix B example Figure B.2 | Improvements Identified |
| Label 6 | If the Battery Energy Storage System is located adjacent (i.e. next to or adjoining without obstruction and within arm’s reach) to the switchboard and if multiple battery systems or BESS are installed, is there a sign for each that provides an identifiable number together with the total number of systems installed? For example, BESS 1 of 3? | AS/NZS5139:2019 CL7.6 | Improvements Identified |
| Label 8 | Is there a Safety Data Sheet installed within a document holder at the main switchboard or meter box?  *Note to auditor: In Australia, the SDS for the battery system shall be included within a document holder at the main switchboard or meter box, and, where available, at the fire control and indicator panel. The SDS shall ensure a local contact (country contact in Australia) within the document. SDS document for battery systems shall be made of suitably durable materials to prevent degradation in the location of storage* | AS/NZS5139:2019 CL7.7 | Improvements Identified |
| Label 9 | If battery/inverter system is connected to the main switchboard has the grid supply main switch been labelled "MAIN SWITCH (GRID SUPPLY)" or similar, alternatively if the battery/inverter system has been connected to a distribution board has a sign containing the words "MAIN ISOLATOR (NORMAL SUPPLY)" or similar been placed adjacent to the isolator for the normal supply to the distribution switchboard. | VIC SIRS 2014 with Amdt 1 CL 5.4 and 6.9.2.3.  AS/NZS 4777.1:2016 Cl 6.2 | Improvements Identified |
| Switchboard 1 | What is the size of circuit breaker controlling ‘Main Switch Grid Supply’? | Size refers to Label 9 | Information only – no rating applied |
| Label 10 | Where applicable, is there an AC circuit breaker in or adjacent to the switchboard for the system labelled “Main Switch Inverter Supply” or "Main Switch Battery Supply"? | VIC SIRS 2014 with Amdt 1 CL 5.4 and 6.9.2.3; AS/NZS 5033:2014 Inc. Amdt 1 Section 5 Cl 5.4.1; AS/NZS 4777.1:2016 Cl 6.2 | Improvements Identified |
| Switchboard 2 | What is the size of circuit breaker controlling 'Main Switch Inverter Supply' or "Main Switch Battery supply"? | Size refers to Label 10 | Information only – no rating applied |
| Switchboard 3 | Is the AC circuit breaker suitably sized to protect the cable supplying the Battery Energy Storage System/Inverter? | AS/NZS 4777.1 Cl 3.4.2; AS/NZS 3000:2018 Cl 2.5; V13 CEC Installation Guidelines 10.5.1 | Needs Rectification |
| Label 11 | For system with standalone functionality have all alternative energy sources been provided with a main switch and has the main switch been appropriately labelled to indicate its type e.g., standalone-supply, or alternative supply or similar | AS/NZS 4777.1 clause 6.11, AS/NZS 3000 clause 2.3.3.2 & 7.3.3 | Needs Rectification |
| Switchboard 6 | Is there a standalone supply from the BESS? |  | Information only – no rating applied |
| Switchboard 7 | Do the stand-alone circuits have appropriate RCD protection? | AS/NZS 4777.1 Cl. 5.4.4 | Needs Rectification |
| Switchboard 8 | Is the stand-alone supply earth referenced? | AS/NZS 4777.1 Cl. 5.4.3 | Needs Rectification |
| Switchboard 9 | Does the changeover device maintain neutral continuity? | AS/NZS 3000 Cl. 7.3.8.1.2 | Unsafe |
| **Switchboard 11** | **Has a warning label been installed at the main switchboard and intermediate distribution boards to indicate a multimode inverter has been installed with backup functionality and the requirement to follow the shutdown procedure for safe isolation? Additionally, is the text "Neutral and earth circuits may be live under fault conditions" included on this sign?** | **AS/NZS 4777.1 Cl 6.11** | **Needs Rectification** |
| Label 13 | Does the switchboard contain the label "Multiple Supplies Isolate all Supplies before Working on this Switchboard”? | AS/NZS 4777.1:2016 Cl 6.2 | Needs Rectification |
| Label 14 | Are circuits that are backed up when the grid is not available grouped and appropriately labelled? | AS/NZS 3000 Clause 2.10.5.2 | Improvements Identified |
| Label 15 | Are all required labels associated with the PV installation that are relevant to the BS present? Add notes in comments section below |  | Improvements Identified |

# Existing Solar

| **Checklist item** | **Question** | **Relevant standards/ reference** | **Applicable rating** |
| --- | --- | --- | --- |
| PV 1 | Is the solar PV system operational at commencement of the audit? |  | Information only – no rating applied |
| PV 3 | Inverter Nominal AC Power rating |  | Information only – no rating applied |

# Battery General

| **Checklist item** | **Question** | **Relevant standards/ reference** | **Applicable rating** |
| --- | --- | --- | --- |
| BG 1 | Is the Battery Energy Storage operational at commencement of the audit? |  | Information only – no rating applied |
| BG 3 | Classification- Pre-assembled Integrated BESS/Pre-assembled BS/Other | AS/NZS 5139:2019 | Information only – no rating applied |
| BG 4 | If response to BG3 is Pre-Assembled Integrated BESS, complete the following Section: [BESS (Sect. 4 of 5139)](#_BESS_(Sect._4)  If response to BG 3 is Pre-Assembled BS, complete the following Section: [BS (Sect. 5 of 5139)](#_BESS_(Sect._5)  If response to BG3 is Other, the Battery does not meet Solar Victoria’s requirements (e.g. Recalled). |  | Information only – no rating applied |
| BG 5 | What is the serial number of the inverter? |  | Information only – no rating applied |

# BESS (Sect. 4 of 5139)

Please note, this section should be completed for lithium ion pre-assembled integrated BESS only.

| **Checklist item** | **Question** | **Relevant standards/ reference** | **Applicable rating** |
| --- | --- | --- | --- |
| Integrated 1 | This section applies to installations of lithium ion pre-assembled integrated Battery Energy Storage System (BESS) as defined in AS/NZS 5139:2019 CL 4.1 | AS/NZS 5139:2019 CL 4.1 | Information only – no rating applied |
| Integrated 2 | Are there any signs of alterations or additions that would result in the lithium ion pre-assembled integrated BESS no longer conforming to the Best Practice Guide: Battery Storage Equipment- Electrical Safety Requirements? | AS/NZS 5139:2019 CL 4.4.2.3 | Needs Rectification |
| Integrated 10 | If yes to Integrated 2, are the signs of alterations or additions that make the lithium-ion pre-assembled integrated BESS no longer conforming such that it is unsafe? | AS/NZS 5139:2019 CL 4.4.2.3 | Unsafe |
| Integrated 3 | Where is the lithium-ion pre-assembled integrated BESS installed? What location is it installed in (internal or external)? |  | Information only – no rating applied |
| Integrated 4 | What is the make of the lithium-ion pre-assembled integrated BESS? |  | Information only – no rating applied |
| Integrated 5 | What is the model of the lithium-ion pre-assembled integrated BESS? |  | Information only – no rating applied |
| Integrated 57 | What is the serial number of the lithium-ion pre-assembled integrated BESS? |  | Information only – no rating applied |
| Integrated 6 | What is the total battery storage capacity in KWh? |  | Information only – no rating applied |
| Integrated 7 | Does the battery appear operational (e.g., no warning lights)? |  | Information only – no rating applied |
| Integrated 8 | What is the nominal AC output rating of the lithium-ion pre-assembled integrated BESS? |  | Information only – no rating applied |
| Integrated 9 | What is the peak AC output rating of the lithium-ion pre-assembled integrated BESS? |  | Information only – no rating applied |
| Integrated 51 | Was the lithium-ion integrated BESS an approved product on the Solar Victoria "Approved battery list" at the time of installation? |  | Needs Rectification |
| Integrated 52 | Was the lithium-ion integrated BESS an approved product on the Clean Energy Councils "Approved battery list" at the time of installation? |  | Needs Rectification |
| Integrated 53 | Has the lithium-ion integrated BESS been recalled by the manufacturer or regulator? |  | Needs Rectification |
| Label 1 | Is there a sign adjacent to the lithium-ion pre-assembled integrated BESS that states?   1. Battery System or Battery Energy Storage System 2. The correct short-circuit current (specifying current in amperes) 3. The correct maximum dace voltage (specifying voltage in volts)   For systems over DVC-A, the sign should also state "Hazardous d.c voltage". | AS/NZS 5139:2019 CL 7.6 | Improvements Identified |
| Label 16 | Is there a site-specific shutdown procedure that details the sequential steps to safely shutdown the BESS? The shutdown procedure shall be:   1. installed adjacent to the PCE to which the battery system is connected; and 2. placed adjacent to and visible from the equipment to be operated in the event of a shutdown.   The shutdown procedure shall also state that isolation of the battery system by isolation and shutting down the PCE may not de-energize the battery system and further action may be required. The shutdown procedure should also include emergency contact information for manufacturer or supplier. Where the PCE (and all other listed equipment to be operated in the event of a shutdown) is not adjacent to the switchboard it is directly connected to, the shutdown procedure should also be placed within the switchboard. | AS/NZS 5139:2019 CL 7.16 | Needs Rectification |
| Label 17 | Is the "Danger, Risk of Battery Explosion" installed in a prominent position approaching the battery system? | AS/NZS 5139:2019 Table 3.1  AS/NZS 5139:2019 CL 7.8 | Needs Rectification |
| Label 18 | Is the "Danger, toxic fumes" sign installed adjacent to the enclosure or on all doors to the room where the battery system is located detailing the specific fault conditions (e.g. fire) under which the fumes will be present? This sign should also include PPE requirements for entering the room/working with the battery system. | AS/NZS 5139:2019 CL 7.9 | Needs Rectification |
| Label 19 | If the battery chemistry is categorised with a chemical hazard, is there a sign specifying what to do if the skin, eyes or other body parts are exposed to the chemical? This sign shall be installed either adjacent to the enclosure or on all doors to the room where the battery system is located. | AS/NZS 5139:2019 Table 3.1  AS/NZS 5139:2019 CL 7.10 | Needs Rectification |
| Label 20 | If the battery chemistry is categorised as having an arc flash hazard above "minor" (see Table 6.1), is there a sign specifying the dangers of the arc flash? This sign shall be installed either adjacent to the enclosure or on all doors to the room where the battery system is located. |  | Needs Rectification |
| **Label 22** | **Where multiple energy sources (e.g. solar and battery) are connected to the one inverter, has a warning sign been installed to indicate all energy sources be turned off to achieve complete isolation?** | **AS/NZS 4777.1 Cl 6.10** | **Improvements Identified** |
| Integrated 12 | Has the lithium ion pre-assembled integrated BESS been installed in accordance with manufacturers installation requirements, including reference to the relevant SDS? | AS/NZS 5139:2019 CL 4.2.1 | Needs Rectification |
| Integrated 54 | Has a battery isolation device that is able to be secured in the open position, and that operates all inputs and outputs, been provided adjacent to the battery system? | AS/NZS 4777.1:2016 Cl 4.5 | Needs Rectification |
| **Integrated 58** | **If the battery/inverter is not adjacent to the switchboard it is connected to, has an AC isolation device/s, that is able to be secured in the open position, been provided adjacent to the battery/inverter to isolate both grid and backup supplies if applicable?** | **AS/NZS 4777.1 Cl 3.4.3** | **Needs Rectification** |
| Integrated 13 | Is the a.c interconnection of the lithium-ion pre-assembled integrated BESS to the switchboard or distribution board in accordance with AS/NZS 3000? | AS/NZS 5139:2019 CL 4.2.1  AS/NZS 5139:2019 CL 4.3.1.1 | Needs Rectification |
| Integrated 49 | If the a.c interconnection of the lithium-ion pre-assembled integrated BESS to the switchboard or distribution board is not in accordance with AS/NZS 3000, is it such that it constitutes a safety hazard which poses an imminent risk? | AS/NZS 5139:2019 CL 4.2.1  AS/NZS 5139:2019 CL 4.3.1.1 | Unsafe |
| Integrated 14 | Has the pre-assembled BESS been installed in a location where it is protected from mechanical damage? This also includes inappropriate or poorly installed infrastructure aimed at protecting it from mechanical damage. Such as a Bollard to prevent damage by impact. | AS/NZS 5139:2019 CL 4.2.2.1 | Needs Rectification |
| Integrated 17 | If installed indoors does the location of the lithium-ion pre-assembled integrated BESS allow access to the connections and any serviceable equipment, doors and panels that are required to be accessed for installation and maintenance | AS/NZS 5139:2019 CL 4.2.2.1 (a)  AS/NZS 5139:2019 CL 4.2.5 - 600mm min, 900mm if accessing 230V | Improvements Identified |
| Integrated 19 | Does the location of the lithium-ion pre-assembled integrated BESS conform to the requirements for damp situations defined by AS/NZS 3000:2018 Section 6? | AS/NZS 5139:2019 CL 4.2.2.1  AS/NZS 3000:2018 Section 6 | Needs Rectification |
| Integrated 20 | If installed in a corridor, hallway or lobby does the lithium-ion pre-assembled integrated BESS have at least 1 metre of clearance to allow for safe egress? | AS/NZS 5139:2019 CL 4.2.2.1 | Needs Rectification |
| Integrated 21 | Is the location for the installation of the lithium-ion pre-assembled integrated BESS not within the Restricted locations listed under AS/NZS 5139:2019 CL 4.2.2.2? | AS/NZS 5139:2019 CL 4.2.2.2 | Needs Rectification |
| Integrated 22 | Is the lithium-ion pre-assembled integrated BESS installed in a habitable room? | AS/NZS 5139:2019 CL 4.2.2.2 | Needs Rectification |
| Integrated 23 | Is any equipment not associated with the lithium-ion pre-assembled integrated BESS not installed within the restricted zones shown in AS/NZS 5139:2019 Figure 4.1? | AS/NZS 5139:2019 CL 4.2.2.2 | Needs Rectification |
| Integrated 24 | If the lithium-ion pre-assembled integrated BESS installed does not conform to AS/NZS 60079.14, is the installation not in a location defined to be a hazardous area in AS/NZS 3000:2018 Section 7? | AS/NZS 5139:2019 CL 4.2.2.2  AS/NZS 60079.14  AS/NZS 3000:2018 Section 7 | Needs Rectification |
| Integrated 25 | Is the lithium-ion pre-assembled integrated BESS installed away from hazardous areas for gas cylinders containing heavier-than-air gasses and gas relief vent terminals as defined in AS/NZS 3000:2018 Section 4? | AS/NZS 5139:2019 CL 4.2.2.2  AS/NZS 3000:2018 Section 4 | Needs Rectification |
| Integrated 27 | Is the lithium-ion pre-assembled integrated BESS installed in a location that will not expose it to temperatures lower than the minimum or greater than the maximum temperatures as specified by the manufacturer? | AS/NZS 5139:2019 CL 4.2.3  AS/NZS 5139:2019 CL 4.2.3.2 | Improvements Identified |
| Integrated 28 | Is the lithium-ion pre-assembled integrated BESS installed in a location where it can be protected against damage that might reasonably be expected from the presence of water, high humidity, dust, vermin or direct sunlight? | AS/NZS 5139:2019 CL 4.2.3  AS/NZS 5139:2019 CL 4.2.3.2 | Needs Rectification |
| Integrated 29 | Is the lithium-ion pre-assembled integrated BESS installed in a location that will not expose it to localised or general heat sources? Such as direct sunlight, generators, stream pipes, hot water systems, air conditioners or space heaters. There should also be no direct airflow from any appliance directed at it. | AS/NZS 5139:2019 CL 4.2.3  AS/NZS 5139:2019 CL 4.2.3.2 | Needs Rectification |
| Integrated 32 | Is the lithium ion pre-assembled integrated BESS located on, or placed against the wall, or mounted on the floor within 300mm of the wall or structure separating it from a habitable room, and where the surface of the wall is not made of a suitably non-combustible material, has a suitably non-combustible barrier been placed between the pre-assembled integrated BESS and the surface of the wall or structure to the required dimensions shown in AS/NZS 5139:2019 Figure 4.2? | AS/NZS 5139:2019 CL 4.2.4.2  AS/NZS 5139:2019 Fitchgure 4.2 | Needs Rectification |
| Integrated 50 | Have all penetrations larger than 5mm through non-combustible material within restricted zones been filled with a fire-retardant material. | AS/NZS 5139:2019 CL 4.2.4.2 | Needs Rectification |
| Integrated 34 | Do all grid connections of the pre-assembled BESS meet the requirements of AS/NZS 4777.1? | AS/NZS 5139:2019 CL 4.3.1.2  AS/NZS 4777.1 | Improvements Identified |
| Integrated 35 | Has the earthing of the lithium ion pre-assembled integrated BESS been installed to manufactures requirements and meet the earthing requirements in AS/NZS 3000? | AS/NZS 5139:2019 CL 4.3.1.3.1  AS/NZS 3000 | Needs Rectification |
| Integrated 36 | If required by the manufacturer of the pre-assembled BESS, has an earth fault alarm been installed? | AS/NZS 5139:2019 CL 4.3.1.3.2 | Needs Rectification |
| Integrated 37 | Has the pre-assembled BESS been installed in accordance with manufacturer's instructions to limit the exposure to an arc flash hazard during installation and for maintenance? | AS/NZS 5139:2019 CL 4.3.2 | Needs Rectification |
| Integrated 38 | If mounted on the ground, does the ground appear to be suitable to support the weight of the BESS? | AS/NZS 5139:2019 CL 4.3.3(a) | Needs Rectification |
| Integrated 39 | If mounted on a wall or structure, does the wall or structure appear to have the structural integrity to withstand the weight of the BESS? | AS/NZS 5139:2019 CL 4.3.3(b) | Needs Rectification |
| Integrated 40 | If the lithium ion pre-assembled integrated BESS is installed in a room, has a smoke alarm been installed? | AS/NZS 5139:2019 CL 4.3.4 | Needs Rectification |
| Integrated 41 | Where the lithium ion pre-assembled integrated BESS is categorized as having an explosive gas hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer? | AS/NZS 5139:2019 CL 4.3.5  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Integrated 42 | Where the lithium ion pre-assembled integrated BESS is categorized as having an explosive gas hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer including any venting and containment requirements? | AS/NZS 5139:2019 CL 4.3.6  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Integrated 43 | Where the lithium ion pre-assembled integrated BESS is categorized as having a toxic fume hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer? | AS/NZS 5139:2019 CL 4.3.7  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Integrated 44 | Does the lithium ion pre-assembled integrated BESS have an alarm system provided that will cause an action to be initiated to correct the fault? This could be audible, visual or via an electronic communication. | AS/NZS 5139:2019 CL 4.3.8 | Improvements Identified |
| Integrated 45 | Is there a full system manual readily available for the lithium ion pre-assembled integrated BESS containing the key system information as required? | AS/NZS 5139:2019 CL 4.4.1.1 | Improvements Identified |
| Integrated 46 | Is there access to any exposed live parts | AS/NZS 3000 | Unsafe |
| Integrated 47 | Has all electrical work associated with the installation of the lithium ion pre-assembled integrated BESS been installed in line with Australian standards? | AS/NZS 3000 | Needs Rectification |
| Integrated 48 | Has any electrical work associated with the installation of the lithium ion pre-assembled integrated BESS not been installed in line with Australian standards such that it constitutes a safety hazard which poses an imminent risk? | AS/NZS 3000 | Unsafe |
| Integrated 55 | Are there any loose connections in integrated BESS and associated wiring with no signs of heat | AS/NZS 3001 | Needs Rectification |
| Integrated 56 | Are there any loose connections in integrated BESS and associated wiring with signs of heat | AS/NZS 3002 | Unsafe |

# BS (Sect. 5 of 5139)

Please note, this section should be completed for lithium-ion pre-assembled BS only.

| **Checklist item** | **Question** | | **Relevant standards/ reference** | | **Applicable rating** |
| --- | --- | --- | --- | --- | --- |
| Pre-assembled 1 | | This section applies to installations of a lithium-ion pre-assembled Battery System (BS) as defined in AS/NZS 5139:2019 CL 5.1 | AS/NZS 5139:2019 CL 5.1 | | Information only – no rating applied |
| Pre-assembled 2 | | Are there any signs of alterations or additions that would result in the lithium-ion pre-assembled BS no longer conforming to the Best Practice Guide: Battery Storage Equipment- Electrical Safety Requirements? | AS/NZS 5139:2019 CL 5.4.2.3 | | Needs Rectification |
| Pre-assembled 104 | | If yes to pre-assembled 2, are the signs of alterations or additions that make the lithium ion pre-assembled BS no longer conforming such that it is unsafe? | AS/NZS 5139:2019 CL 5.4.2.3 | | Unsafe |
| Pre-assembled 3 | Where is the lithium-ion pre-assembled BS installed? | |  | | Information only – no rating applied |
| Pre-assembled 4 | What is the make of the lithium-ion pre-assembled BS? | |  | | Information only – no rating applied |
| Pre-assembled 5 | What is the model of the lithium-ion pre-assembled BS? | |  | | Information only – no rating applied |
| Pre-assembled 106 | What is the serial number of the lithium-ion pre-assembled BS? | |  | | Information only – no rating applied |
| Pre-assembled 6 | What is the total battery storage capacity in KWh? | |  | | Information only – no rating applied |
| Pre-assembled 7 | What is the Decisive Voltage Classification (DVC) of the lithium-ion pre-assembled BS? DVC-A <60 VoltsDC , DVC-B <120 VoltsDC, DVC-C >120 VoltsDC | | AS/NZS 5139:2019 CL 1.3.29(Definition)  AS/NZS 5139:2019 CL 3.2.3.2  AS/NZS 5139:2019 Table 3.2  AS/NZS 5139:2019 Appendix A  AS/NZS 4777.2:2015 CL 9.3.3[h] | | Information only – no rating applied |
| Pre-assembled 11 | Is there a sign adjacent (i.e. next to or adjoining without obstruction and within arm’s reach) to the lithium ion pre-assembled BS that states:   1. Battery System or Battery Energy Storage System 2. The correct Short-circuit current (specifying current in amperes) 3. The correct Maximum d.c voltage (specifying voltage in volts)   For systems over DVC-A, the sign should also state "Hazardous d.c voltage" | | AS/NZS 5139:2019 CL 7.6 | | Improvements Identified |
| Pre-assembled 12 | Is there a site-specific shutdown procedure that details the sequential steps to safely shutdown the BS? The shutdown procedure shall be:   1. installed adjacent to the PCE to which the battery system is connected; and 2. placed adjacent to and visible from the equipment to be operated in the event of a shutdown.   The shut down procedure shall also state that isolation of the battery system by isolation and shutting down the PCE may not de-energize the battery system and further action may be required. The shutdown procedure should also include emergency contact information for manufacturer or supplier. Where the PCE (and all other listed equipment to be operated in the event of a shutdown) is not adjacent to the switchboard it is directly connected to, the shutdown procedure should also be placed within the switchboard | | AS/NZS 5139:2019 CL 7.16 | | Needs Rectification |
| **Pre-assembled 110** | **If the battery/inverter is not adjacent to the switchboard it is connected to, has an AC isolation device/s, that is able to be secured in the open position, been provided adjacent to the battery/invert to isolate both grid and backup supplies if applicable?** | | **AS/NZS 4777.1 Cl 3.4.3** | | **Needs Rectification** |
| **Pre-assembled 111** | **Have all DC energy sources (e.g. solar and battery) been provided with a separate isolation device that is able to be secured in the open position, and that operates all inputs and outputs, and that is adjacent to the inverter?** | | **AS/NZS 4777.1:2016 Cl 4.5** | | **Needs Rectification** |
| **Label 23** | **Where multiple energy sources (e.g. solar and battery) are connected to the one inverter, has a warning sign been installed to indicate all energy sources be turned off to achieve complete isolation?** | | **AS/NZS 47771. Cl 6.10** | | **Improvements Identified** |
| Pre-assembled 13 | If required, is the "Danger, Risk of Battery Explosion" installed in a prominent position approaching the battery system? | | AS/NZS 5139:2019 Table 3.1  AS/NZS 5139:2019 CL 7.8 | | Needs Rectification |
| Pre-assembled 14 | Is the “Danger, toxic fumes” sign installed adjacent to the enclosure or on all doors to the room where the battery system is located and does it detail the specific fault conditions (e.g. fire) under which the fumes will be present? This sign should also include PPE requirements for entering the room/working with the battery system. | | AS/NZS 5139:2019 CL 7.9 | | Needs Rectification |
| Pre-assembled 15 | If the battery chemistry is categorised with a chemical hazard, is there a sign specifying what to do if the skin, eyes or other body parts are exposed to the chemical? This sign shall be installed either adjacent to the enclosure or on all doors to the room where the battery system is located. | | AS/NZS 5139:2019 Table 3.1  AS/NZS 5139:2019 CL 7.10 | | Needs Rectification |
| Pre-assembled 16 | If the battery chemistry is categorised as having an arc flash hazard above "minor" (see Table 6.1), is there a sign specifying the dangers of the arc flash? This sign shall be installed either adjacent to the enclosure or on all doors to the room where the battery system is located. | |  | | Needs Rectification |
| Pre-assembled 17 | Was the lithium-ion pre-assembled BS an approved product on the Solar Victoria "Approved battery list" at the time of installation? | |  | | Needs Rectification |
| Pre-assembled 18 | Was the lithium-ion pre-assembled BS an approved product on the Clean Energy Councils "Approved battery list" at the time of installation? | |  | | Needs Rectification |
| Integrated 10.1 | Has the lithium-ion pre-assembled BS pre-assembled BESS been recalled by the manufacturer or regulator | | AS/NZS 5139:2019 CL 5.4 | | Needs Rectification |
| Pre-assembled 19 | Is there a full system manual, as required in AS/NZS 5139:2019 CL 5.4 readily available at the time of inspection? | | AS/NZS 5139:2019 CL 5.4 | | Improvements Identified |
| Pre-assembled 20 | Has the lithium-ion pre-assembled BS been installed in accordance with manufacturers installation requirements, including reference to the relevant SDS? | | AS/NZS 5139:2019 CL 5.2.1 | | Needs Rectification |
| Pre-assembled 21 | Has the lithium-ion pre-assembled BS been installed in a location where it is protected from mechanical damage? This also includes inappropriate or poorly installed infrastructure aimed at protecting it from mechanical damage | | AS/NZS 5139:2019 CL 5.2.2.1 | | Needs Rectification |
| Pre-assembled 24 | If installed indoors does the location of the lithium-ion pre-assembled integrated BESS allow access to the connections and any serviceable equipment, doors and panels that are required to be accessed for installation and maintenance. | | AS/NZS 5139:2019 CL 5.2.2.1 (a)  AS/NZS 5139:2019 CL 5.2.5  See line 49 | | Improvements Identified |
| Pre-assembled 26 | Does the location of the lithium-ion pre-assembled BS conform to the requirements for damp situations defined by AS/NZS 3000:2018 Section 6? | | AS/NZS 5139:2019 CL 5.2.2.1  AS/NZS 3000:2018 Section 6 | | Needs Rectification |
| Pre-assembled 27 | If installed in a corridor, hallway or lobby does the lithium-ion pre-assembled BS have at least 1 metre of clearance to allow for safe egress? | | AS/NZS 5139:2019 CL 5.2.2.1 | | Needs Rectification |
| Pre-assembled 28 | | Is the location for the installation of the lithium-ion pre-assembled BS not within the Restricted locations listed under AS/NZS 5139:2019 CL 5.2.2.2? | | AS/NZS 5139:2019 CL 5.2.2.2 | Needs Rectification |
| Pre-assembled 29 | | Is the lithium-ion pre-assembled BS installed in a habitable room? | | AS/NZS 5139:2019 CL 5.2.2.2 | Needs Rectification |
| Pre-assembled 30 | | Is equipment not associated with the lithium-ion pre-assembled BS not installed within the restricted zones shown in AS/NZS 5139:2019 Figure 5.1? | | AS/NZS 5139:2019 CL 5.2.2.2  AS/NZS 5139:2019 Figure 5.1 | Needs Rectification |
| Pre-assembled 31 | | If the lithium-ion pre-assembled BS installed does not conform to AS/NZS 60079.14, is the installation away from a location defined to be a hazardous area in AS/NZS 3000:2018 Section 7? | | AS/NZS 5139:2019 CL 5.2.2.2  AS/NZS 60079.14  AS/NZS 3000:2018 Section 7 | Needs Rectification |
| Pre-assembled 32 | | Is the lithium-ion pre-assembled BS installed away from hazardous areas for gas cylinders containing heavier-than-air gasses and gas relief vent terminals as defined in AS/NZS 3000:2018 Section 4? | | AS/NZS 5139:2019 CL 5.2.2.2  AS/NZS 3000:2018 Section 4 | Needs Rectification |
| Pre-assembled 33 | | Is the lithium-ion pre-assembled BS installed near combustible materials? | | AS/NZS 5139:2019 5.2.3 | Improvements Identified |
| Pre-assembled 35 | | Is the lithium-ion pre-assembled BS installed in a location that will not expose it to temperatures lower than the minimum or greater than the maximum temperatures as specified by the manufacturer? | | AS/NZS 5139:2019 CL 5.2.3  AS/NZS 5139:2019 CL 5.2.3.2 | Improvements Identified |
| Pre-assembled 36 | | Is the lithium-ion pre-assembled BS installed in a location where it can be protected against damage that might reasonably be expected from the presence of water, high humidity, dust, vermin or direct sunlight? | | AS/NZS 5139:2019 CL 5.2.3  AS/NZS 5139:2019 CL 5.2.3.2 | Needs Rectification |
| Pre-assembled 37 | Is the lithium-ion pre-assembled BS installed in a location that will not expose it to localized or general heat sources? This may include direct sunlight, generators, stream pipes, hot water systems, air conditioners or space heaters. There should also be no direct airflow from any appliance directed at it. | | AS/NZS 5139:2019 CL 5.2.3  AS/NZS 5139:2019 CL 5.2.3.2 | | Needs Rectification |
| Pre-assembled 40 | | If the lithium ion pre-assembled BS is located on, or placed against the wall, or mounted on the floor within 300mm of the wall or structure separating it from a habitable room, and the surface of the wall is not made of a suitably non-combustible material, has a suitable non-combustible barrier has been placed between the pre-assemble integrated BESS and the surface of the wall or structure to the required dimensions shown in AS/NZS 5139:2019 Figure 4.2? | | AS/NZS 5139:2019 CL 5.2.4.2  AS/NZS 5139:2019 Figure 5.2 | Needs Rectification |
| Pre-assembled 105 | | Have all penetrations larger than 5mm through non-combustible material within restricted zones been filled with a fire-retardant material? | | AS/NZS 5139:2019 CL 5.2.4.2  AS/NZS 5139:2019 Figure 5.2 | Needs Rectification |
| Pre-assembled 41 | | If the lithium-ion pre-assembled BS is located in a room, is it located so that access to the battery system is not obstructed by the structure of the building, fixtures and fittings within the room? | | AS/NZS 5139:2019 CL 5.2.5 | Improvements Identified |
| Pre-assembled 42 | | If the lithium-ion pre-assembled BS is located in a room, is the room clean, dry and ventilated? | | AS/NZS 5139:2019 CL 5.2.5 | Improvements Identified |
| Pre-assembled 43 | | If the lithium-ion pre-assembled BS is located in a room, does the room provide and maintain protection against detrimental environmental conditions and other external factors? | | AS/NZS 5139:2019 CL 5.2.5 | Needs Rectification |
| Pre-assembled 44 | | If the lithium-ion pre-assembled BS is located in a room, is the room suitable to minimize the likelihood of a build-up insect or vermin infestation or other materials on or around the lithium-ion pre-assembled BS? | | AS/NZS 5139:2019 CL 5.2.5 | Improvements Identified |
| Pre-assembled 45 | | If the lithium-ion pre-assembled BS is located in a room, does the size of the room allow for sufficient clearance around the lithium-ion pre-assembled BS to provide safe handling and access for installation, removal and maintenance? | | AS/NZS 5139:2019 CL 5.2.5 the minimum unimpeded access shall be:  [a] 900 mm with the doors open  [b] 600 mm with the doors open for battery systems that have  [I] voltage no greater than DVC-A; and  [ii] a calculated arc flash energy at the output terminals of the battery system not greater than 4.0 cal/cm²; or  [c] the clearance specified by the manufacture, whichever is greater | Improvements Identified |
| Pre-assembled 47 | | If the lithium-ion pre-assembled BS has a voltage of DVC-A, is it connected to an inverter that has at least simple separation between the battery system d.c port and the a.c port or grid port of the inverter? | | AS/NZS5139:2019 CL 5.3.11 | Needs Rectification |
| Pre-assembled 48 | | If the lithium-ion pre-assembled BS has a voltage greater than DVC-A, does all cabling and installation requirements meet the requirements for DVC-C if a non-separated PCE other than an inverter is installed? (e.g., solar charge controller)? | | AS/NZS 5139:2019 CL 5.3.1.1 | Needs Rectification |
| Pre-assembled 49 | | Is overcurrent protection installed in all live conductors? Excluding control and monitoring circuits. | | AS/NZS5139:2019 CL 5.3.1.2.1 | Needs Rectification |
| Pre-assembled 50 | | Is the overcurrent protection device installed adjacent to the battery system?   1. of a non-polarized type. 2. d.c. rated 3. have a voltage rating greater than the battery system's maximum voltage under all normal and abnormal conditions. 4. meet the requirements of AS/NZS 3000:2018 Section 2; and 5. have a current rating to protect the cabling from the pre-assembled battery system | | AS/NZS5139:2019 CL 5.3.1.2.1 | Needs Rectification |
| Pre-assembled 51 | | Where the overcurrent protective device is not integrated into the lithium-ion pre-assembled BS, are the either a HRC fuse or miniature circuit breaker that meet the requirements of AS/NZS 5139:2019 CL 5.3.1.2.1? | | AS/NZS5139:2019 CL 5.3.1.2.1 | Needs Rectification |
| Pre-assembled 52 | | If the overcurrent protection device is a circuit breaker, does it meet the requirements of AS/NZS 5139:2019 CL 5.3.1.2.2? | | AS/NZS5139:2019 CL 5.3.1.2.1  AS/NZS5139:2019 CL 5.3.1.2.2 | Needs Rectification |
| Pre-assembled 53 | | If the overcurrent protection device is a HRC fuse, does it meet the requirements of AS/NZS 5139:2019 CL 5.3.1.2.3? | | AS/NZS5139:2019 CL 5.3.1.2.1  AS/NZS5139:2019 CL 5.3.1.2.3 | Needs Rectification |
| Pre-assembled 54 | | Where the overcurrent protective device is integrated into the lithium-ion pre-assembled BS, does it meet the requirements of AS/NZS 5139:2019 CL 5.3.1.2.4? | | AS/NZS5139:2019 CL 5.3.1.2.1  AS/NZS5139:2019 CL 5.3.1.2.4 | Needs Rectification |
| Pre-assembled 55 | | If the overcurrent protection device is external, is it installed as close as practical to the output terminals of the battery system and no greater than 2m away? | | AS/NZS5139:2019 CL 5.3.1.2.5 | Needs rectification |
| Pre-assembled 56 | | Has a means of disconnection been installed to isolate the pre-assembled BS from the PCE and vice versa, to allow for maintenance, repair, fault finding and inspection tasks to be carried out safely? | | AS/NZS 5139:2019 CL 5.3.1.3.1 | Needs Rectification |
| Pre-assembled 57 | | Is it possible to isolate the PCE from all poles of the pre-assembled BS using one of the following load breaking disconnection methods installed?   1. An adjacent and physically separate disconnection device. 2. A disconnection device integrated into the PCE. 3. A disconnection device integrated into the pre-assembled BS. | | AS/NZS 5139:2019 CL 5.3.1.3.2 | Needs Rectification |
| Pre-assembled 58 | | If a switch-disconnector has been used as the load breaking disconnection device, does it meet the following requirements:   1. conform to AS 60947.3. 2. be of the non-polarized type. 3. be d.c rated. 4. have a voltage rating than the battery system's maximum voltage under all operating conditions. 5. be rated to withstand the maximum short-circuit current. 6. have a current rating greater than the maximum d.c current for the BESS. 7. be rated to interrupt for full load. 8. meet the requirements of AS/NZS 3000:2018 Section 2 for isolating device selection. 9. be rated for independent manual operation. 10. have a minimum pollution degree 3 classification. 11. be able to be secured in the open position and only secured when the main contacts are in the open position; 12. conform to requirements for isolation including marking requirements for an isolation device; and 13. have a utilization category of at least DC21B. | | AS/NZS 5139:2019 CL 5.3.1.3.3 | Needs Rectification |
| Pre-assembled 59 | | If an adjacent or physically separated disconnection device is installed indoors, is the disconnection device mounted in an enclosure that has a minimum IP 23 rating? | | AS/NZS 5139:2019 CL 5.3.1.3.4 | Needs Rectification |
| Pre-assembled 60 | | If an adjacent or physically separated disconnection device is installed outdoors, is the disconnection device mounted in an enclosure that has a minimum IP 56NW when tested under the conditions of AS 60947.3:2018 Clause D.8.3.13.4, D.8.13.3.5, D.8.3.13.6, D.8.3.13.7 and D.8.3.13.8 (in Australian variations Appendix ZZ)? | | AS/NZS 5139:2019 CL 5.3.1.3.4 | Needs Rectification |
| Pre-assembled 61 | | Are the switch-disconnectors for outdoor use suitably rated for an ambient temperature of 40 degrees C? | | AS/NZS 5139:2019 CL 5.3.1.3.4 | Needs Rectification |
| Pre-assembled 62 | | If the disconnection device is integrated in the PCE does it meet one of the following additional requirements:   1. An isolation device that is mechanically interlocked with a replaceable module of the PCE, and allows the module to be removed from the section containing the isolation device without risk of electric hazards; or 2. An isolation device is located in the same enclosure as the other components of the PCE. With the isolation device in the off position there shall be no risk of electric hazard when any PCE external enclosure cover is removed for repair or replacement of other components of the PCE. | | AS/NZS 5139:2019 CL 5.3.1.3.5 | Needs Rectification |
| Pre-assembled 63 | | If the pre-assembled BS includes an internal isolation device operation in all live conductors, is it readily accessible and does it provide the same functions as for an adjacent external isolation device? No additional adjacent external isolation device is required. | | AS/NZS 5139:2019 CL 5.3.1.3.6 | Improvements Identified |
| Pre-assembled 64 | | Is the isolation device readily accessible? | | AS/NZS 5139:2019 CL 5.3.1.3.7 | Needs Rectification |
| Pre-assembled 65 | | Where the cables connecting the pre-assembled BS and PCEs are less than 2m in length, is the isolation device(s) installed adjacent to either the pre-assembled battery system or the PCE? | | AS/NZS 5139:2019 CL 5.3.1.3.7 | Improvements Identified |
| Pre-assembled 66 | | Where the cables connecting the pre-assembled BS and PCE are greater than 2m in length, is the isolation device installed at both the pre-assembled battery system and PCE? | | AS/NZS 5139:2019 CL 5.3.1.3.7 | Needs Rectification |
| Pre-assembled 67 | | If there are multiple PCEs (e.g. a solar charge controller and an inverter; or multiple inverters), have separate isolation devices been installed? | | AS/NZS 5139:2019 CL 5.3.1.3.8 | Improvements Identified |
| Pre-assembled 68 | | If there are two or more lithium ion pre-assembled battery systems connected in parallel, does each one have a separate isolation device? | | AS/NZS 5139:2019 CL 5.3.1.3.9 | Improvements Identified |
| Pre-assembled 69 | | Are the battery system cables flexible cables in accordance with (?):   1. AS/NZS 5000.2 (450/750 V insulation) for battery systems with a maximum operating voltage less than 450 V d.c; 2. AS/NZS 5000.1 (0.6/1kV insulation) for battery systems with a maximum operation voltage less than 600 V d.c ; or 3. IEC 62930 for battery systems with a maximum operating voltage less than 1500 V d.c | | AS/NZS 5139:2019 CL 5.3.1.4.2 | Needs Rectification |
| Pre-assembled 70 | | Do the cables between the battery system and the PCE meet the requirements of AS/NZS 3000 for selection and installation of wiring systems? | | AS/NZS 5139:2019 CL 5.3.1.4.2 | Needs Rectification |
| Pre-assembled 107 | | If the d.c interconnection of the lithium-ion pre-assembled BS to the PCE is not in accordance with AS/NZS 3000, is it such that it constitutes a safety hazard which poses an imminent risk? | | AS/NZS 5139 clause 5.3.1.4.2 | Unsafe |
| Pre-assembled 71 | | Are the cables from the battery system to the PCE:   1. double insulated if the battery system's maximum voltage exceeds DVC-A; and 2. double insulated for DVC-A battery systems connected to a non-separated PCE (e.g., solar charge controller) and where the non-battery side of the PCE is greater than DCV-A? | | AS/NZS 5139:2019 CL 5.3.1.4.2 | Needs Rectification |
| Pre-assembled 72 | | For all battery systems operation at DVC-A, are all cables between the battery system, the overcurrent protection device and the PCE double insulated? | | AS/NZS 5139:2019 CL 5.3.1.4.2 | Needs Rectification |
| Pre-assembled 73 | | Are all cables that exit the pre-assembled BS without internal overcurrent protection mechanically protected by at least medium duty conduit or equivalent protection up to the over current device? | | AS/NZS 5139:2019 CL 5.3.1.4.3 | Needs Rectification |
| Pre-assembled 74 | | For battery systems operating at DVC-B or DVC-C, do the cables between the overcurrent protection device and the PCE have mechanical protection. (Refer to AS/NZS 3000:2018 Cl H4) | | AS/NZS 5139:2019 CL 5.3.1.4.3 | Improvements Identified |
| Pre-assembled 75 | | Is the voltage drop between the battery system and the PCE no more than 2% based on the rated d.c battery port current of the PCE and no more than 5% under any operating conditions? | | AS/NZS 5139:2019 CL 5.3.1.4.4 | Improvements Identified |
| Pre-assembled 76 | | Is the current-carrying capacity of the pre-assembled battery's system's cable to the overcurrent protection rated to:   1. the maximum current rating of the pre-assembled BS; and 2. the short-circuit current and duration from the pre-assembled BS. | | AS/NZS 5139:2019 CL 5.3.1.4.5 | Needs Rectification |
| Pre-assembled 77 | | Is the current-carrying capacity of the pre-assembled BS cables to the PCE greater than the rating of the overcurrent protection device installed? | | AS/NZS 5139:2019 CL 5.3.1.4.5 | Needs Rectification |
| Pre-assembled 78 | | Is the minimum cable sizes for the pre-assembled BS based on the current-carrying capacity of flexible cables as specified in:   1. AS/NZS 3008>1 series; or 2. as specified by the manufacture of the cable. | | AS/NZS 5139:2019 CL 5.3.1.4.5 | Needs Rectification |
| Pre-assembled 79 | | If the BESS consists of two or more pre-assembled BS connected in parallel (that do not have a BMS or similar device that provides a managed voltage and current charge/discharge for each separate system), does the output cable from each battery system come to a point where the parallel battery system connects (e.g. PCE or Junction box) have equal cable resistance? | | AS/NZS 5139:2019 CL 5.3.1.4.6 | Needs Rectification |
| Pre-assembled 80 | | Has overcurrent protection been installed on the pre-assembled BS's d.c port of the PCE if (?):   1. the PCE charging current or load current under fault conditions is greater than the current-carrying capacity of the conductor between the PCE and the pre-assembled BS; and 2. the length of the cable between the PCE and the pre-assembled BS overcurrent device is greater than 3m. | | AS/NZS 5139:2019 CL 5.3.1.4.7 | Needs Rectification |
| Pre-assembled 81 | | Does the installation meet the requirements for segregations for a.c and d.c circuits within enclosures from AS/NZS 3000:2018 Section 3? | | AS/NZS 5139:2019 CL 5.3.1.5  AS/NZS 3000:2018 Section 3 | Improvements Identified |
| Pre-assembled 82 | | There are four categories relating to the earthing arrangements for battery systems connected to PCEs and each has specific requirements; Please select the appropriate category and inspect to the relevant clause. | | AS/NZS 5139:2019 CL 5.3.1.6.1 | Information only – no rating applied |
| Pre-assembled 84 | | If system is direct earthed, is there a conductor connected to the installation earthing system. The pre-assembled battery system earthing conductor shall be rated to withstand the prospective earth fault current of the battery system for a time at least equal to the operating time of the associated overcurrent protective device | | AS/NZS 5139:2019 CL 5.3.1.6.3 | Needs Rectification |
| Pre-assembled 85 | | If system is resistively earthed, is one conductor of the battery system connected to the installation earthing system via a resistor. The pre-assembled battery system earthing conductor shall be rated to withstand the prospective earth fault current of  the battery system continuously. | | AS/NZS 5139:2019 CL 5.3.1.6.4 | Needs Rectification |
| Pre-assembled 86 | | If system is connected to a non-separated PCE, does it conform with the requirements of AS/NZS 5.3.1.6.5 | | AS/NZS 5139:2019 CL 5.3.1.6.5 | Needs Rectification |
| Pre-assembled 87 | | Is the pre-assembled BS earthed to according to manufacturer’s instructions? | | AS/NZS 5139:2019 CL 5.3.1.7.1 | Needs Rectification |
| Pre-assembled 88 | | Where the BS is not earthed and the installation comprises a single BESS with a voltage grater then DVC-A, are all metallic equipment enclosures associated with the BESS installation bonded together to the earthing system of the electrical installation using a minimum bonding conductor size of 6mm2? | | AS/NZS 5139:2019 CL 5.3.1.7.3 & AS/NZS 5139:2019 CL 5.3.1.7.4 | Needs Rectification |
| Pre-assembled 89 | | If the pre-assembled BS is directly earthed with voltages greater than DVC-A, are all metallic equipment enclosures associated with the BESS installation bonded together to the earthing system of the electrical installation using a minimum bonding conductor size of 6mm2 or equivalent to the earth conductor size, whichever is the greater? | | AS/NZS 5139:2019 CL 5.3.1.7.3 | Needs Rectification |
| Pre-assembled 90 | | If the pre-assembled BS is resistively earthed with voltages greater than DVC-A, are all metallic equipment enclosures associated with the BESS installation bonded together to the earthing system of the electrical installation using a minimum bonding conductor size of 6mm2 or equivalent to the earth conductor size, whichever is the greater? | | AS/NZS 5139:2019 CL 5.3.1.7.4 | Needs Rectification |
| Pre-assembled 91 | | Does the lithium-ion pre-assembled BS separated from earth have an alarm system provided that will cause an action to be initiated to correct the fault? This could be audible, visual or via an electronic communication. | | AS/NZS 5139:2019 CL 5.3.1.8 | Improvements Identified |
| Pre-assembled 92 | | Has the lithium-ion pre-assembled BS been installed in accordance with manufacturer's instructions to limit the exposure to an arc flash hazard during installation and for maintenance? | | AS/NZS 5139:2019 CL 5.3.2 | Needs Rectification |
| Pre-assembled 93 | | If mounted on the ground, does the ground appear to be suitable to support the weight of the BESS? | | AS/NZS 5139:2019 CL 5.3.3(a) | Needs Rectification |
| Pre-assembled 94 | | If mounted on a wall or structure, does the wall or structure appear to have the structural integrity to withstand the weight of the BESS? | | AS/NZS 5139:2019 CL 5.3.3(b) | Needs Rectification |
| Pre-assembled 95 | | If the lithium-ion pre-assembled BS is installed in a room, has a smoke alarm been installed? | | AS/NZS 5139:2019 CL 5.3.4 | Needs Rectification |
| Pre-assembled 96 | | Where the lithium-ion pre-assembled BS is categorized as having a explosive gas hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer? | | AS/NZS 5139:2019 CL 5.3.5  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Pre-assembled 97 | | Where the lithium-ion pre-assembled BS is categorized as having a explosive gas hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer including any venting and containment requirements? | | AS/NZS 5139:2019 CL 5.3.6  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Pre-assembled 98 | | Where the lithium-ion pre-assembled BS is categorized as having a toxic fume hazard in AS/NZS 5139:2019 Table 3.1, is the installation in accordance with the instructions of the manufacturer? | | AS/NZS 5139:2019 CL 5.3.7  AS/NZS 5139:2019 Table 3.1 | Needs Rectification |
| Pre-assembled 99 | | Does the lithium-ion pre-assembled BS have an alarm system provided that will cause an action to be initiated to correct the fault? This could be audible, visual or via an electronic communication. | | AS/NZS 5139:2019 CL 5.3.8 | Needs Rectification |
| Pre-assembled 101 | | Is there access to any exposed live parts | | AS/NZS 3000 | Unsafe |
| Pre-assembled 102 | | Has all electrical work associated with the installation of the lithium-ion pre-assembled BS been installed in line with Australian standards? | | AS/NZS 3000, AS/NZS 5139, AS/NZS 5033, AS/NZS 4777.1 | Needs Rectification |
| Pre-assembled 103 | | Has any electrical work associated with the installation of the lithium-ion pre-assembled BS not been installed in line with Australian standards such that it constitutes a safety hazard which poses an imminent risk? | | AS/NZS 3000, AS/NZS 5139, AS/NZS 5033, AS/NZS 4777.1 | Unsafe |
| Pre-assembled 108 | | Are there any loose connections in pre-assembled bs and associated wiring with NO signs of heat | | AS/NZS 5139 5.4.2.2 | Needs Rectification |
| Pre-assembled 109 | | Are there any loose connections in pre-assembled bs and associated wiring WITH signs of heat | | AS/NZS 5139 5.4.2.2 | Unsafe |

Solar Victoria periodically reviews this checklist. If you would like us to consider your feedback on an audit item, please email us: [quality.assurance@team.solar.vic.gov.au](mailto:email%C2%A0us:%20quality.assurance@team.solar.vic.gov.au)

Review Date: 29/05/2023

Prior Version: Version 1.3

Current Revision: Version 1.4

# Useful links

For more information about the audit process: [solar.vic.gov.au/audits-workplace-safety](http://www.solar.vic.gov.au/audits-workplace-safety)

Australian Competition and Consumer Commission: [accc.gov.au](https://www.accc.gov.au/)

Australian and New Zealand Standards: [standards.org.au](http://www.standards.org.au/)

Clean Energy Council: [cleanenergycouncil.org.au](http://www.cleanenergycouncil.org.au/)

Electrical Regulator Authorities Council: [erac.gov.au](https://www.erac.gov.au/)

Electrical Equipment Safety System: [ess.gov.au](http://www.eess.gov.au/)

Energy Safe Victoria: [esv.vic.gov.au](http://www.esv.vic.gov.au/)

Product recall list: [productsafety.gov.au/recalls](http://www.productsafety.gov.au/recalls)

|  |  |
| --- | --- |
| © The State of Victoria Department of Energy, Environment and Climate Action 2023  LogoThis work is licensed under a Creative Commons Attribution 4.0 International licence. You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, the Victorian Government logo and the Department of Environment, Land, Water and Planning (DELWP) logo. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/  ISBN 978-1-76105-297-2 (print)  Disclaimer  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. | Accessibility  If you would like to receive this publication  in an alternative format, please contact Solar Victoria at [comms@team.solar.vic.gov.au](mailto:comms@team.solar.vic.gov.au). This document is also available on the internet at solar.vic.gov.au. |