

Correct as at 26th April 2026. It may be superseded at any time.

**Extract taken from:** In-service certification (WoF and CoF) > Heavy PSVs > Miscellaneous items > Electric and hybrid vehicle fuel and electrical system

## 13-5 Electric and hybrid vehicle fuel and electrical system

### Reasons for rejection

#### Condition (Note 1)

##### 1. High voltage wiring is:

- a) insecure or not adequately secured
- b) damaged or deteriorated (including insulation)
- c) likely to touch:
  - i. hot components of the vehicle
  - ii. sharp edges
  - iii. rotating parts
  - iv. the ground.

##### 2. High voltage batteries are:

- a) insecure or not adequately secured
- b) damaged or deteriorated (including components and electrical insulation)
- c) leaking, or showing signs of leaking.

##### 3. High voltage battery or wiring shields are damaged or not in place.

##### 4. A high voltage component's (eg battery) coolant system is leaking.

##### 5. An electrical system warning lamp is illuminated. See Table 13-5-2 for examples.

#### Modification

##### 4. A modification affects the electrical system, and:

- a) is not excluded from the requirements for specialist certification (Table 13-5-1), or
- b) is missing proof of specialist certification, that is:
  - i. the vehicle is not fitted with a valid certification plate (eg low volume vehicle plate or heavy vehicle certification plate/label), or
  - ii. the operator is not able to produce a valid modification declaration or authority card
  - iii. The vehicle has not been certified to an accepted overseas system as described in [Technical bulletin 13](#).







**Note 1**

Vehicle inspectors are only required to do a visual check. An invasive check is not required.

**Table 13-5-1. Modifications that do not require specialist certification**

Fitting of or modification to:	Specialist certification is not required provided that:
Fuel system changes and modifications	<ul style="list-style-type: none"> <li>• see fuel system requirements in <a href="#">Table 13-2-1</a>.</li> </ul> <p>Note: Specialist certification is <b>always</b> required for changes to the high voltage electrical system.</p>
High voltage battery and control systems	<ul style="list-style-type: none"> <li>• the high voltage battery pack is replaced by an OEM or aftermarket replacement; and</li> <li>• there is no change in the operating voltage; and</li> <li>• no modifications to the vehicles structure have occurred; and</li> <li>• the replacement battery pack is attached to the vehicle's unmodified, original battery attachment points; and</li> <li>• the replacement battery pack is similar in size, construction, and weight; and</li> <li>• no modifications have occurred to any other part of the vehicle's high voltage system; and</li> <li>• the vehicle retains any safety features (eg isolation/maintenance switch/connector) fitted by the OEM manufacturer; and</li> <li>• the modifications have been carried out by persons professionally engaged in the modification of electric vehicles.</li> </ul> <p>Note: For clarity, 'similar weight' is within 30kg of the original battery pack weight.</p>
Fitting of or modification to:	Specialist certification is never required:
Any modification for the purposes of law enforcement or the provision of emergency services	<ul style="list-style-type: none"> <li>• in-service requirements for condition and performance must be met.</li> </ul>

**Table 13-5-2. Electrical system warning icons**

<p><b>General fault</b></p> <p>The vehicle may indicate exactly what the fault is.</p> <p>If the fault is not from an electrical system, or other safety critical system (eg brakes, steering, electrics, ESC etc.) the vehicle may pass the inspection.</p>	
<p><b>Vehicle electrical fault</b></p> <p>The vehicle should be referred to a repairer for diagnostics.</p> <p>If the fault is not from a safety critical system (eg brakes, steering, high voltage electrics, ESC etc.), the vehicle may pass the inspection.</p>	
<p><b>Limited power/Limp mode</b></p> <p>This is likely to do with a fault in the electric drive system. The vehicle should be referred to a repairer for diagnostics.</p> <p>The vehicle must <b>fail</b> the inspection.</p>	
<p><b>Serious electrical fault</b></p> <p>The vehicle should be referred to a repairer for diagnostics.</p> <p>The vehicle must <b>fail</b> the inspection.</p>	
<p><b>Master warning</b></p> <p>Could be a warning for any vehicle system and is likely to be serious. The vehicle should be referred to a repairer for diagnostics.</p> <p>The vehicle must <b>fail</b> the inspection.</p>	
<p><b>High battery temperature</b></p> <p>Remove the car from any indoor premises immediately and turn the vehicle off. The vehicle should be referred to a repairer for diagnostics.</p> <p>The vehicle must <b>fail</b> the inspection.</p>	

## Summary of legislation

### Applicable legislation

- [Land Transport Rule: Vehicle Standards Compliance Rule 2002](#), section 7.4

## **Condition and performance**

1. The vehicle must be safe to be operated.
2. The components and materials must be fit for their purpose and within safe tolerance of their state when manufactured or modified.

## **Modifications**

3. A modification that affects the electrical system must be inspected and certified by an specialist certifier, unless the vehicle:
  - a) is excluded from the requirement for specialist certification (Table 13-5-1), and
  - b) has been inspected in accordance with the requirements in this manual, including those for equipment, condition and performance.

Page amended **1 October 2023** (see [amendment details](#)).