

Proposal of amendments to ECE/TRANS/WP.29/GRSP/2014/11 - Draft Regulation on electric vehicles of category L, submitted by the Informal Working Group REESS

Submitted by the expert from the International Motorcycle Manufacturers Association

The text reproduced below was prepared by the expert from the International Motorcycles Manufacturers Association (IMMA) to introduce amendments clarifying the current text and correcting some of the text to what was agreed in the Informal Group RESS.

The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

I Proposal

Paragraph 5.2.3., amend to read:

"5.2.3. Protection against electrolyte spills

Vehicles shall foresee that no spilled electrolyte from the REESS and its components shall reach the driver, rider or passenger nor any person around the vehicle during normal condition of use and/or functional operation.

When the REESS **is in the put upside-down positions**, no electrolyte shall spill."

Paragraph 5.2.4., amend to read:

"5.2.4. Accidental or unintentional detachment

The REESS and its components shall be installed in the vehicle in such a way so as to preclude the possibility of inadvertent or unintentional detachment of the REESS **during normal conditions of use and/or functional operation**.

~~The REESS in the vehicle shall not be ejected when the vehicle is tilted.~~

The REESS components shall not be ejected when the REESS is put upside-down."

Paragraph 6.4.2.2.2., amend to read:

"6.4.2.2.2. For a high voltage REESS the isolation resistance of the tested-device shall ensure at least 100 Ω /Volt for the whole REESS measured after the test in accordance with Annex 4B to this Regulation, ~~or the protection degree IPXXB shall be fulfilled for the tested device.~~"

Paragraph 6.5., amend to read:

"6.5. Fire resistance

This test applies for vehicles with a passenger compartment only.

This test is required for REESS containing flammable electrolyte.

This test is not required when the REESS as installed in the vehicle, is mounted such that the lowest surface of the casing of the REESS is more than 1.5m above the ground. At the option of the manufacturer, this test may be performed where the height of the REESS's lower surface is higher than 1.5 m above the ground.

The test shall be carried out on one test sample.

At the manufacturer's choice the test may be performed as, either:

- (a) A vehicle based test in accordance with paragraph 6.5.1. of this Regulation, or
- (b) A component based test in accordance with paragraph 6.5.2. of this Regulation."

Paragraph 12., shall be deleted

Annex 8C, paragraph 2.1., amend to read:

"2.1. General test conditions

The following conditions shall apply to the removed REESS at the start of the test:

- (a) **Adjust the SOC to fully charge before** ~~Before~~ starting the test. ~~the SOC is at least 95 per cent of the normal operating range as given by the manufacturer;~~
- (b) The test shall be performed at 20°C+/- 10° C. "

Annex 8D, the Title, amend to read:,

~~"Mechanical shock resulting from stationary vehicle fall down."~~

Annex 9B, paragraph 1 and 2, amend to read:,

"1 General

The isolation resistance shall be measured after the water resistance performance test has been conducted. ~~The degree of protection of the REESS shall meet the requirement mentioned below.~~

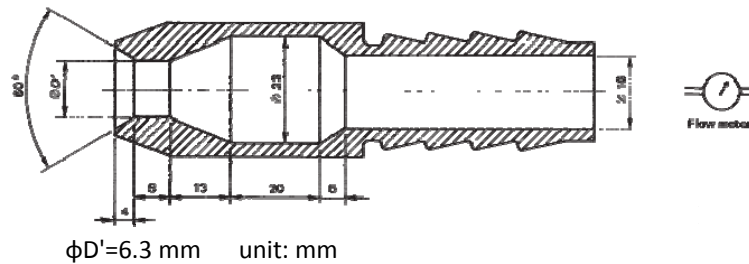
2 Procedure

The following testing procedure shall be applicable to vehicles with on-board (built-in) charger.

In accordance with the test procedure to evaluate IPX5 protection against ingress of water, the Water Resistance shall be carried out by:

- (a) spraying with a stream of fresh water the enclosure from all practicable directions with a standard test nozzle as shown in figure 1.

Figure 1
Test device to verify protection against water jets (hose nozzle)



The conditions to be observed are as follows:

- (i) internal diameter of the nozzle: 6.3 mm;
 - (ii) delivery rate: 12.5 l/min \pm 5 per cent;
 - (iii) water pressure: to be adjusted to achieve the specified delivery rate;
 - (iv) core of the substantial stream: circle of approximately 40 mm diameter at 2.5 m distance from nozzle;
 - (v) test duration per square metre of enclosure surface area likely to be sprayed: 1 min;
 - (vi) minimum test duration: 3 min;
 - (vii) distance from nozzle to enclosure surface: between 2.5 m and 3 m.
- (b) subsequently, apply 500V DC ~~between all the inputs and the vehicle's exposed conductive parts including the electrical chassis~~ **between all high voltage inputs and the vehicle's exposed conductive parts/electrical chassis** if present to measure the insulation resistance."

II. Justification

Para 5.2.3:

The requirement was previously agreed in the 11/RESS and "Tilt" was considered to be included in normal condition.

Para 5.2.4:

This modification is to align with the wording in clause 5.2.3.

Para 6.4.2.2.2.

IMMA proposes to further improve the language previously agreed in IG RESS: The "protection degree IPXXB" is not necessary here, because the requirement of IPXXB is already semantically integrated in "Rupture" by its terminology definition.

Para 6.5.

This clause was part of the agreed text by RESS-IG. IMMA proposes to re-insert the original paragraph as was in the previous RESS working documents.

L-vehicle may have its traction battery over 1500 mm height because the height limitation of European L is 2500 mm and there are no vehicle-height regulation in RE3. There may also be multiple REESS, one of which may be placed above 1500 mm.

Section 12

The 1958 Agreement does not prevent Contracting Parties to apply additional national requirements if those are not covered by the scope of a UN-Regulation that they acceded to, hence the proposed additional provision in the UN Regulation may not be necessary. As a second point, possible further steps and development of the UN Regulation should not be included in provisions of the UN Regulation.

Annex 8C

This clause was modified after the last agreed proposal in RESS IG. The change results from alignment with provisional conclusion from recent discussion in IG EVS, nevertheless IMMA suggests that the alignment is made with the EVS-GTR when the discussion in EVS GTR is concluded. Meanwhile IMMA suggests keeping the language that was initially agreed in IG RESS.

Annex 8D, Title change to "Mechanical shock"

This revised title provides simplification.

Annex 9B, para 1.

The sentence, proposed to be removed, was added after the last meeting of IG RESS, without discussion in IG RESS.

What should be measured here is the isolation resistance of the vehicle (between the AC-input and exposed conductive part or electrical chassis) not the REESS.

The following sentence can be appropriate if clarification of the current text is considered necessary by GRSP:

"The degree of protection of the vehicles with on-board chargers shall meet the requirement mentioned below:"

Annex 9B, para 2.

Some low voltage vehicle inputs are not directly connected to the REESS and may have a galvanic connection to the vehicle chassis (i.e. – 12V ground circuits) and should not be included in this test. The test is intended to assess protection against ingress of water and its potential effect on the High Voltage bus.
