

Economic and Social Council

Distr.: General 22 September 2023

English Original: English and Russian

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Passive Safety

Seventy-fourth session Geneva, 4–8 December 2023 Item 10 of the provisional agenda Regulation No. 100 (Electric power trained vehicles)

Proposal for the 04 series of amendments to Regulation No. 100 (Electric power trained vehicles) *

Submitted by the expert from the Russian Federation

The text reproduced below was prepared by the expert from the Russian Federation, aimed to an identification of buses and trucks equipped with an electric drivetrain which is consistent with existing regulated identification for Liquified Petroleum Gas (LPG), Compressed Natural Gas (CNG), Liquid Natural Gas (LNG) and Compressed Hydrogen (H2) fuelled trucks and busses. The modifications to the current text of the UN Regulation (including ECE/TRANS/WP.29/2023/118) are marked in bold for new or strikethrough for deleted characters.

^{*} In accordance with the programme of work of the Inland Transport Committee for 2023 as outlined in proposed programme budget for 2023 (A/77/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Contents, list of annexes, amend to read:

"Contents

Regulation

1. Scope 2. Definitions..... 3. Application for Approval 4. Approval Part I: Requirements of a Vehicle with Regard to Specific Requirements for the Electric Power Train 5. Part II: Requirements of a Rechargeable Electrical Energy Storage System with Regard 6. to its Safety..... 7. Modifications and extension of the type approval..... 8. Conformity of production..... 9. Penalties for non-conformity of production 10. Production definitively discontinued..... Names and addresses of Technical Services responsible for conducting approval tests and 11. of Type Approval Authorities 12. Transitional provisions Annexes Part 1 - Communication concerning the approval or extension or refusal or withdrawal of approval 1 or production definitively discontinued of a vehicle type with regard to its electrical safety pursuant to Regulation No. 100 1 Part 2 - Communication concerning the approval or extension or refusal or withdrawal of approval or production definitively discontinued of a REESS type as component/separate technical unit pursuant to Regulation No. 100..... 1 Appendix 1..... 1 Appendix 2 2 Arrangements of the Approval Marks..... 3 Protection against direct contacts of parts under voltage 4 Verification of potential equalization Isolation resistance measurement method for vehicle based tests 5A 5B Isolation resistance measurement method for component based tests of a REESS..... 6 Confirmation method for function of on-board isolation resistance monitoring system 7A Verification method for testing authorities confirming document based isolation resistance compliance of electrical design of the vehicle after water exposure 7B Vehicle-based test procedure for protection against water effects 8 Determination of hydrogen emissions during the charge procedures of the REESS..... Appendix 1 - Calibration of equipment for hydrogen emission testing..... Appendix 2 - Essential characteristics of the vehicle family..... 9 REESS test procedures.....

Page

	Appendix 1 - Procedure for conducting a standard cycle	
	Appendix 2 – Procedure for SOC adjustment	
9A	Vibration test	
9B	Thermal shock and cycling test	
9C	Mechanical shock	
9D	Mechanical integrity	
9E	Fire resistance	
	Appendix 1 - Dimension and technical data of firebricks	
9F	External short circuit protection	
9G	Overcharge protection	
9H	Over-discharge protection	
9I	Over-temperature protection	
9J	Over-current protection	

- **10** Provision concerning the identification mark of the vehicles of categories M, N equipped with the electric power train which includes a REESS.
- 11 Provision concerning the arrangement of the identification mark or symbol of the vehicles of categories M and N equipped with the electric power train which includes a REESS."

Insert new paragraph 5.5., to read:

- **"5.5. Identification of the vehicles with the electric power train which includes a REESS.**
- 5.5.1. The Type A sticker specified in Annex 10 shall be placed on the vehicles of categories M, N equipped with the high-voltage electric power train.
- 5.5.2. The Type B sticker specified in Annex 10 shall be placed on the vehicles of categories M, N equipped with the internal combustion engine running on a fuel of the 1st liquid group (gasoline, diesel fuel, biodiesel fuel, etc.) besides the electric power train which includes a REESS.
- 5.5.3. The Type B or Type C sticker specified in Annex 10 shall be placed on the vehicles of categories M, N equipped with the internal combustion engine besides the electric power train which includes a REESS."

Paragraph 12.6., renumber as paragraph 12.10.

Insert new paragraphs 12.6. to 12.9., to read:

- "12.6. As from the official date of entry into force of the 04 series of amendments, no Contracting Party applying this UN Regulation shall refuse to grant or refuse to accept UN type approvals under this UN Regulation as amended by the 04 series of amendments.
- 12.7. As from 1 September 2025, Contracting Parties applying this UN Regulation shall not be obliged to accept UN type approvals to the preceding series of amendments that were first issued on or after 1 September 2025.
- 12.8. Until 1 September 2026, Contracting Parties applying this UN Regulation shall accept UN type approvals to the preceding series of amendments that were first issued before 1 September 2025.
- 12.9. As from 1 September 2026, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series."

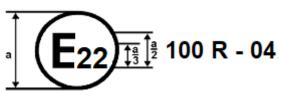
Annex 2, amend to read:

"Annex 2

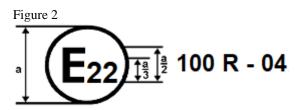
Arrangement of the approval mark

Model A (See paragraph 4.4 of this Regulation)

Figure 1



The approval mark in Figure 1 affixed to a vehicle shows that the road vehicle type concerned has been approved in the Russian Federation (E 22), pursuant to Regulation No. 100, and under the approval number 04XXXX. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 100 as amended by 04 series of amendments.



The approval mark in Figure 2 affixed to a REESS shows that the REESS type ("ES") concerned has been approved in the Russian Federation (E 22), pursuant to Regulation No. 100, and under the approval number **04XXXX**. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 100 as amended by **04** series of amendments.

Insert new Annex 10, to read:

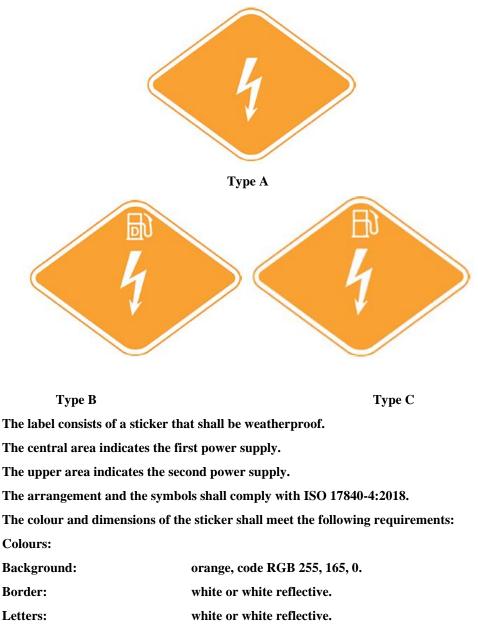
"Annex 10

Provision concerning the identification mark of the vehicles of categories M, N equipped with the electric power train which includes a REESS.

(paragraphs 5.5.1–5.5.3 of this Regulation)

The mark is a sticker, which shall be resistant to changing weather conditions.

Figure 3



The proportions of the identification sticker shall correspond to Table 1. The H (height) value shall be 50 mm for the vehicles of categories M1 and N1, or 120-150 mm for the vehicles of categories M2 and M3, as well as N2 and N3.

Table 1

Identification sticker elements dimensions

Element Size, mm			
	to be placed on the glazing	to be placed on the body elements	
Sticker height (H)	50	120-150	
Sticker width		1.4 H	
Edging width		0.025 H min	
Bordering width		0.06 H	

Insert new Annex 11, to read:

"Annex 11

Provision concerning the arrangement of the identification mark or symbol of the vehicles of categories M and N equipped with the electric power train which includes a REESS.

The identification sticker on the vehicles of categories M_1 and N_1 shall be placed on four sides (Figures 4, 6):

- (a) at the front: upper corner of the windscreen from the passenger side;
- (b) on the right and on the left: in the lower corner of the side window near the B-pillar of the body;
- (c) at the rear: upper corner of the rear window from the driver side. In case of absence of the rear window, on the rear part of the body from the driver side.

The identification sticker on the vehicles of categories M₂ and M₃ shall be placed on four sides and optionally on the roof (Figure 5):

- (d) at the front: from the side of passenger compartment doors on the windscreen or the body (the sticker shall contrast with the background);
- (e) at the rear: from the driver side on the rear window or the body (the sticker shall contrast with the background);
- (f) on the right and on the left: on the outside of the doors on the right side (in case of the vehicles intended for left-hand traffic) or on the left side (in case of the vehicles intended for right-hand traffic) as well as on the opposite side at the emergency exits. The sticker shall be located in such a way that it is visible when the doors are opened (for example, if the passenger compartment door is opened inwards, the sticker shall be located nearby on the body. If the door is opened by sliding outwards, the sticker can be located on the front part of the door);
- (g) at the top: on the roof next to the emergency exit.

The identification sticker on the N_2 category vehicles shall be placed on four sides and optionally on the roof (Figure 7):

- (h) at the front: upper corner of the windscreen from the passenger side;
- (i) on the right and on the left: in the lower corner of the side window near the B-pillar of the body;

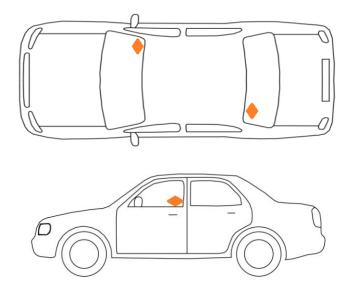
(j) at the rear: upper corner of the rear window from the driver side. In case of absence of the rear window, on the rear part of the body from the driver side.

The identification sticker on the N₃ category vehicles shall be placed on four sides and optionally on the roof (Figure 8):

- (k) at the front: from the passenger side on the windscreen or the body (the sticker shall contrast with the background);
- (l) on the right and on the left: on the outside of the doors
- (m) at the rear: upper corner of the rear window from the driver side. In case of absence of the rear window, on the rear part of the body from the driver side;
- (n) at the top next to the emergency exit.

Figure 4

Placement on a vehicle of category M1



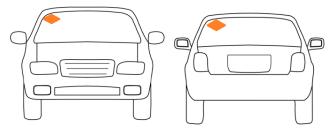


Figure 5 Placement on a vehicle of categories M_2 and M_3

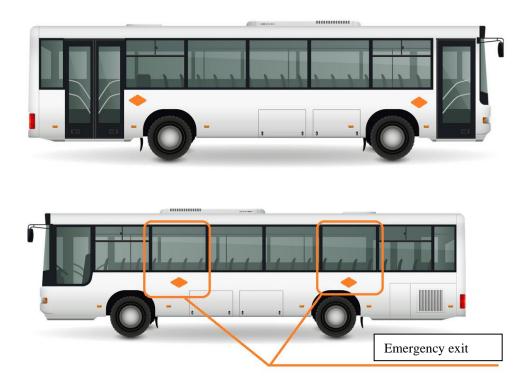


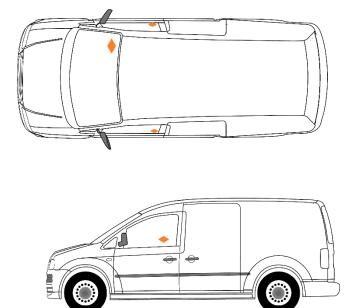








Figure 6 Placement on a vehicle of category N₁



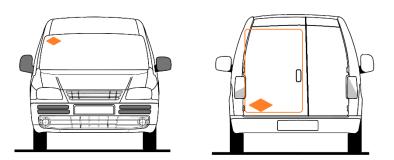
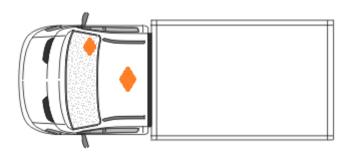


Figure 7 Placement on a vehicle of category N₂



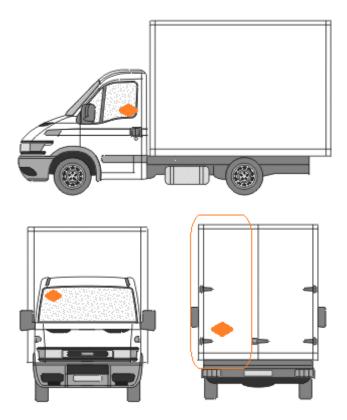
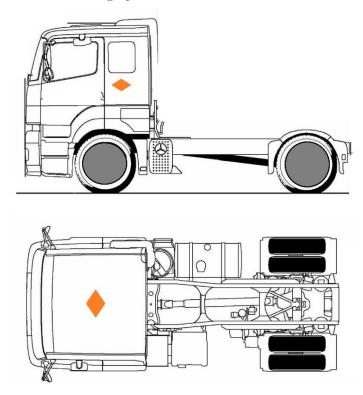


Figure 8 Placement on a vehicle of category N₃





II. Justification

1. Provisions for identification of gaseous and liquified fuels have been laid down in UN Regulations for LPG-fuelled M_2/N_2 and M_3/N_3 vehicles (UN Regulation No. 67, paragraph 17.1.8., including Annex 16 for details), CNG/LNG-fuelled M_2/N_2 and M_3/N_3 vehicles (UN Regulation No. 110, paragraph 18.1.8., including Annex 6 and 7 for the details) and Compressed Hydrogen-fuelled vehicles M_2/N_2 and M_3/N_3 vehicles (UN Regulation No. 134 paragraphs 7.1.7.1. and 7.1.7.3. including Annex 6 for the details).

2. The background for the additional labelling would help emergency services to determine how to approach these vehicles in case of a fire, especially the vehicle's REESS.

For the installation of labels, this proposal seeks consistency with UN Regulation Nos.
67, 110 and 134.

4. CTIF ¹ recommends the use of symbols which are in line with the international standard **ISO 17840-4**, **Part 4 Propulsion energy identification**.

5. For the appearance of the label, this proposal seeks consistency with the above mentioned ISO standard.

¹ CTIF: historical abbreviation in French for *"Comité Technique International de prevention et d'extinction de Feu"*.