

Submitted by the expert
from the Russian Federation



Informal document GRSP-73-47
(73rd GRSP session, 15-19 May 2023,
agenda item 10)

xEV identification

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Statistical data in Russia

Electric vehicles (2023):
214,555 units (0.47% of the total fleet)

- HEV: 188 878

- PHEV: 4 248

- EV: 21 429

- FCV: 11

Li-ion REESS

Gas-powered vehicles (2021):
about 259,000 units

Mandatory marking of buses

Number of only EV in Russia				
2019	2020	2021	2022	2025
7 000	10 000	16 500	21 459	150 000*

Currently, the number of different brands and models vehicles :

- More than 90 different brands
- More than 450 different models

At the end of this year, it is planned to introduce state standards identical to ISO 17840.

At the approval stage, the addition of UN Regulations No. 100-3, 134, 136 to the Technical Regulations of the Customs Union 018/2011.

Amendments are being considered that will oblige the manufacturer or importer to provide rescue schemes and guidelines for responding to emergencies when releasing a vehicles into circulation on the territory of the Customs Union of the countries of the Eurasian Economic Union.

Survey of emergency response personnel in Russia

FSUE "NAMI" held the first seminars on the study of the design and features of vehicles with new types of power plants among emergency personnel

The most frequent questions:

How do we know that we have a vehicle with high-voltage components in front of us?

How do we know where the main voltage switch is located?

How do we know the subtleties of design?

Wishes:

Introduce a clear and unified identification of the type of energy source

Create a database of emergency response manuals for electric vehicles and hybrids.

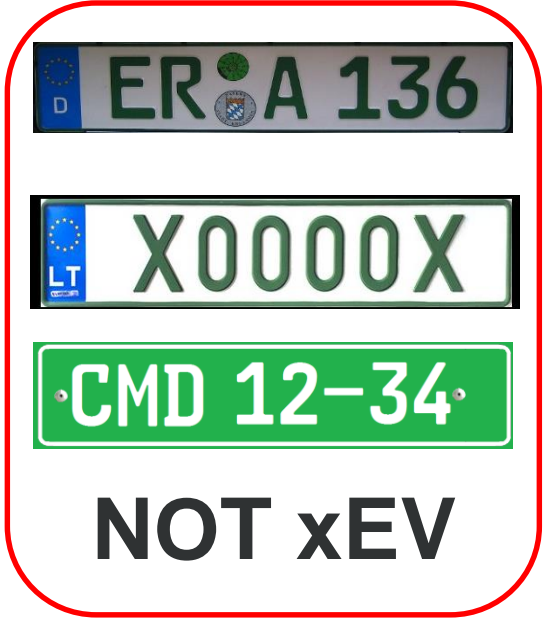
Conduct regular trainings

To develop common approaches to the elimination of the consequences of the accident

Standardize the location of switches

Example of identification of a xEV by license plate and stickers

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Examples of identification in UN regulation



Provisions on CNG identification mark for vehicles of categories M2 and M3, N2 and N3
E/ECE/324/Rev.2/Add.109/Rev.3 E/ECE/TRANS/505/Rev.2/Add.109/Rev.3 Annex 6



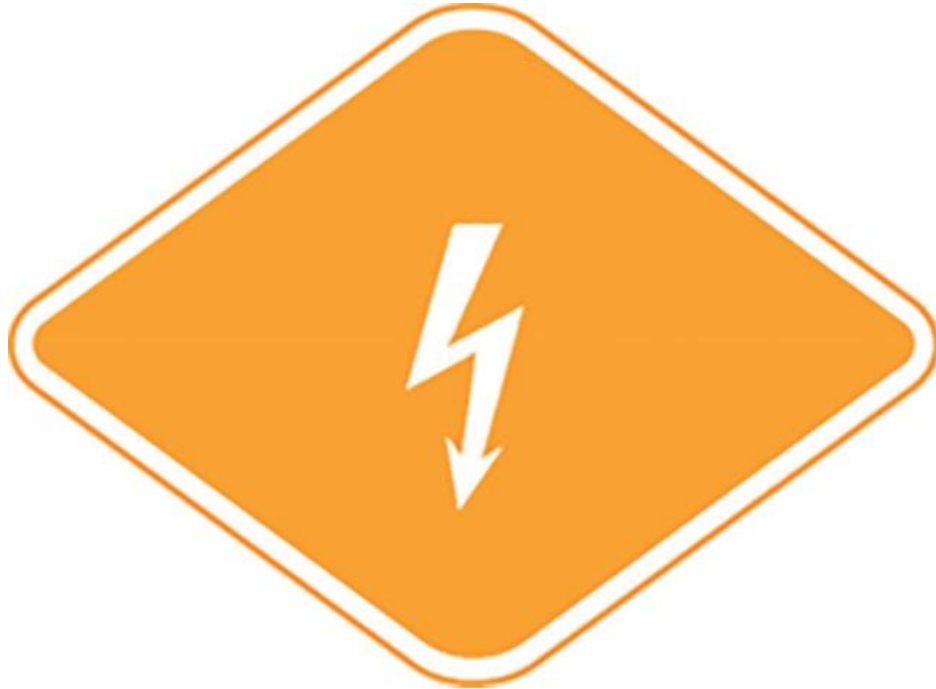
Provisions on LNG identification mark for vehicles of categories M2 and M3, N2 and N3
E/ECE/324/Rev.2/Add.109/Rev.6 E/ECE/TRANS/505/Rev.2/Add.109/Rev.6 Annex 7



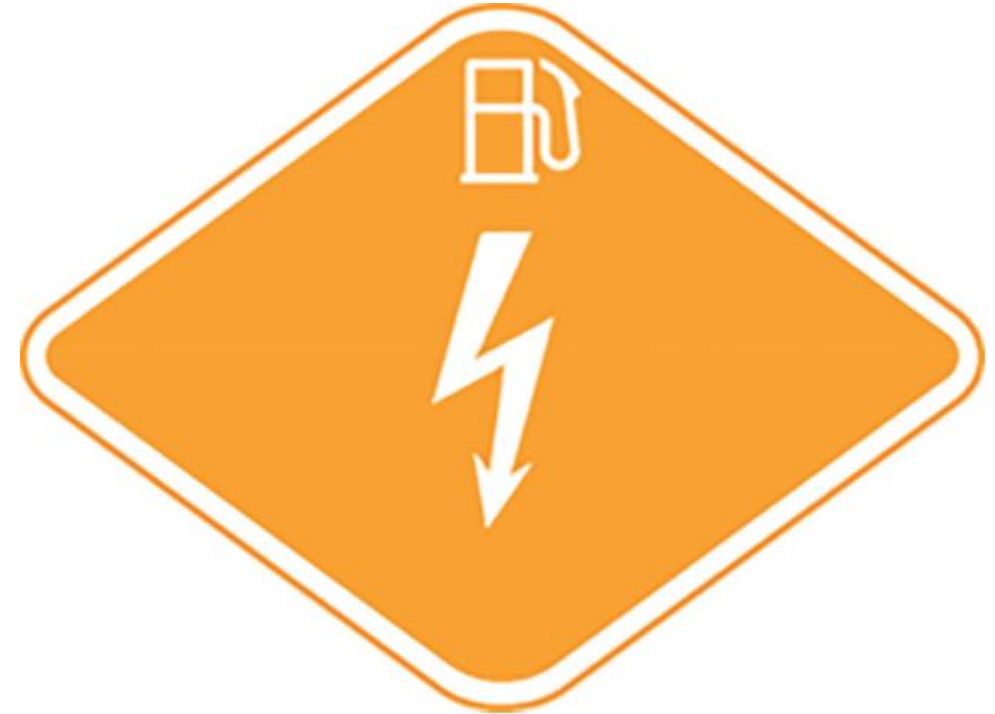
Provisions regarding LPG identification mark for M2 and M3 category vehicles
E/ECE/324/Rev.1/Add.66/Rev.5 E/ECE/TRANS/505/Rev.1/Add.66/Rev.5 Annex 17

The marking of the type of energy source, according to TR CU 018, is already used in Russia on vehicles of certain categories using liquefied petroleum gas (LPG) or compressed natural gas (CNG) as fuel. They are marked with identification marks provided for by **UN Regulations No. 67 and No. 110**, in the form of a green diamond with a white border.

By the end of 2022, there were **26 million xEV in the world**. It is expected that by the end of 2023 there **will be 40 million**. At the same time, there are no more **than 30 million gas-powered cars**.



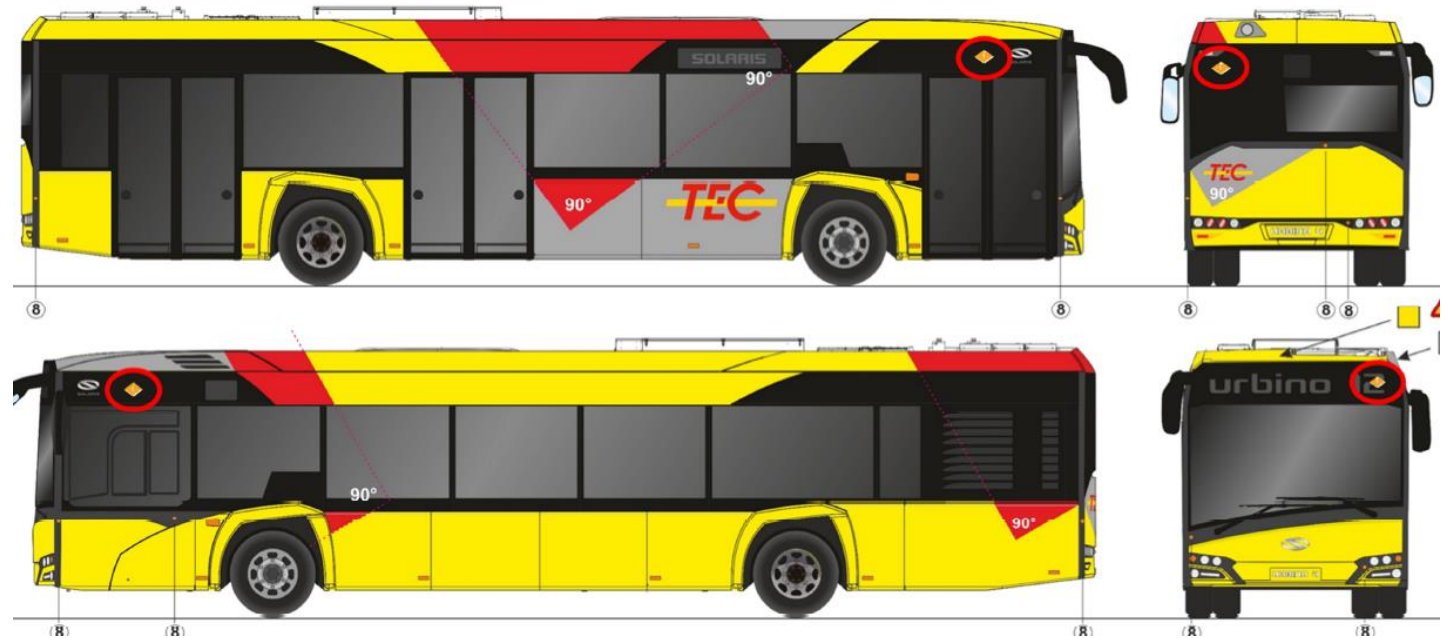
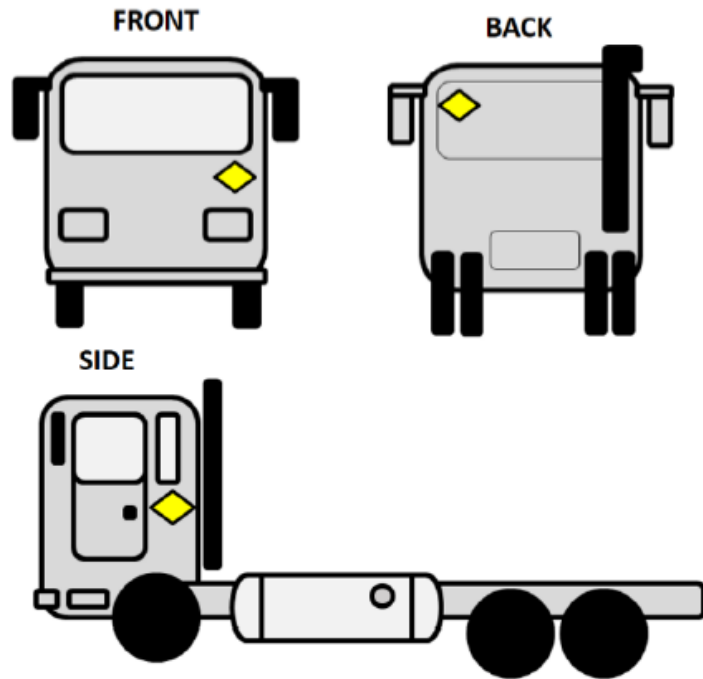
EV



HEV, PHEV

Locations of identification stickers according to the CTIF instructions

For trucks, buses and emergency vehicles, the CTIF (International Association of Fire and Rescue Services) gave recommendations on the location of a sticker identifying the type of energy source. The recommended sizes are also indicated.



Specify the type of vehicle propulsion system in 5 places (front/rear/sides/top), since the approach to the vehicle can be carried out from different sides, and for safety reasons, identification must be provided from either side.

Location of identification stickers in accordance with UN Regulations **-NAMI-**

17.1.8. Identification of LPG-fuelled M2 and M3 category vehicles.

17.1.8.1. Vehicles of category M2 and M3 shall carry a plate as specified in Annex 17 to this Regulation.

17.1.8.2. The plate shall be installed on the front and rear of the M2 or M3 category vehicle and on the **outside of the doors** on the left-hand side for the right hand drive vehicles and on the right-hand side for the left hand drive vehicles.

The need to label only from 3 sides is indicated.

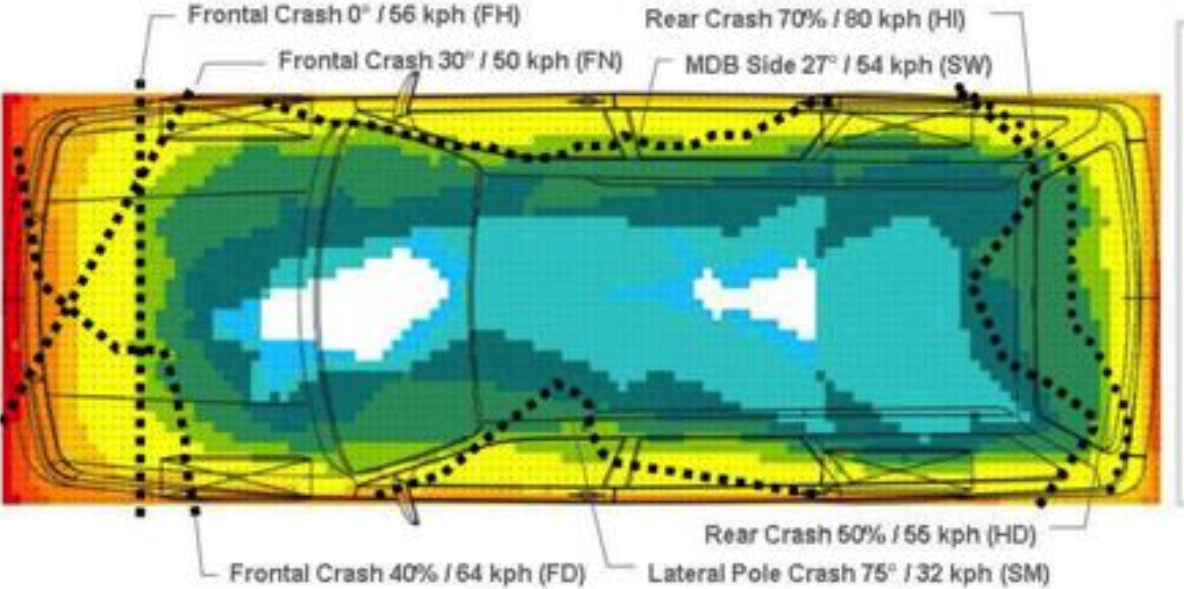
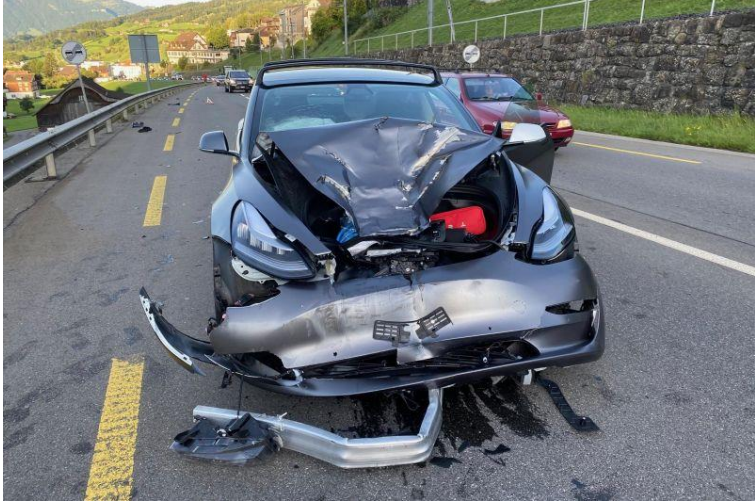


When the door is open, the marking is not visible.

The UN Rules do not specify where the sticker should be located: on the door itself or next to the door?

How to recognize the type of fuel on the opposite side of the entrance?

What does an xEV look like in an accident in cases of damage to the REESS



Since bumpers are most often affected in accidents, identification of an xEV by a license plate is impossible in most cases.



It is proposed to install:

Front: on the windshield at the top of the passenger side (does not interfere with the driver)

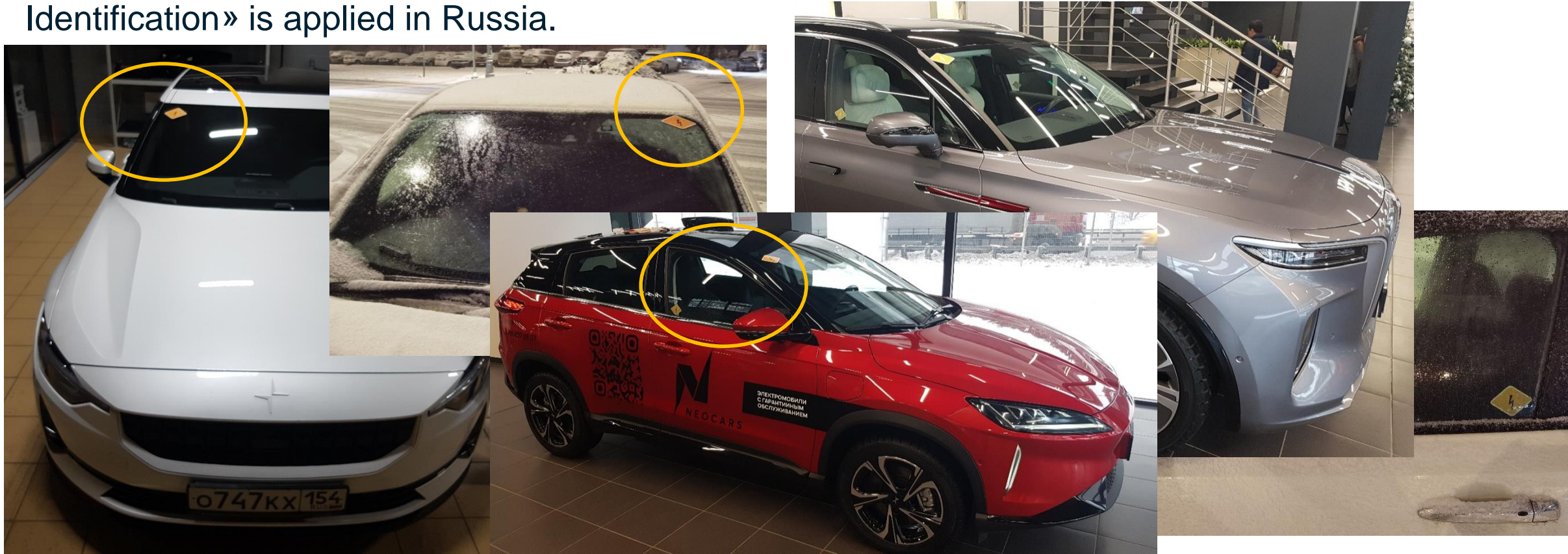
Rear: upper corner of the rear window (body wall) on the driver's side

The location of the sticker on the windows increases the possibility of identifying the energy source in case of an accident.

For identification from the side: the sticker is applied in the lower corner of the front side window near the B-pillar on both sides.

Research on identification marking in Russia

GOST R 59127-2020 «Electric vehicles and motor vehicles with combined power plants. Identification» is applied in Russia.



in 2022, we contacted the owners of xEV and offered to label their cars with stickers. The majority took the offer positively. But some were more concerned that their vehicle would be more recognizable to receive various benefits. The emergency services staff reported that they understood such labeling and took the experiment positively.

Proposals

Add to:

5.1.1.5 Identification

5.1.1.5.1. Identification of the vehicles with the electric power train which includes a Rechargeable Electrical Energy Storage System (REESS).

5.1.1.5.1.1 The Type A sticker specified in Annex 10 shall be placed on the vehicles of categories M, N equipped with the electric power train which includes a REESS.

5.1.1.5.1.2 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 (diesel fuel, biodiesel fuel...) besides the electric power train which includes a REESS.

5.1.1.5.1.3 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.

5.1.1.5.2 These stickers on the vehicles of categories M, N shall be applied according to Annex 11.

Annex 10

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

(paragraph 5.1.1.5.1.1, 5.1.1.5.1.2, 5.1.1.5.1.3 of this Regulation)

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



Type A



Type B



Type C

The colour and dimensions of this sticker shall meet the following requirements. The colours of the background and pictograms of the identification sticker shall be used in accordance with the data in Table 1.

Table 1 – Identification sticker colours

Colour	RGB code
Background and edging	
Orange	255,165,0
Pictograms	
White	255, 255, 255
Bordering	
White	255, 255, 255

The proportions of the identification sticker shall correspond to Table 2. 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 2 – Identification sticker elements dimensions

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

Provision concerning the arrangement or placement of the identification mark 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 M1 and N1 shall be placed on four sides (Figure 11.1, 11.3):

- at the front: upper corner of the windscreen from the passenger side;
- on the right and on the left: in the lower corner of the side window near the B-pillar of the body;
- 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 11.2):

- at the front: from the side of passenger compartment doors on the windscreen or the body (the sticker shall contrast with the background);
- at the rear: from the driver side on the rear window or the body (the sticker shall contrast with the background);
- 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
- at the top: on the roof next to the emergency exit

The identification sticker on the N2 category vehicles shall be placed on four sides and optionally on the roof (Figure 11.4):

- at the front: upper corner of the windscreen from the passenger side;
- on the right and on the left: in the lower corner of the side window near the B-pillar of the body;
- 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 11.5):

- at the front: from the passenger side on the windscreen or the body (the sticker shall contrast with the background);
- on the right and on the left: on the outside of the doors
- 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.
- at the top next to the emergency exit.

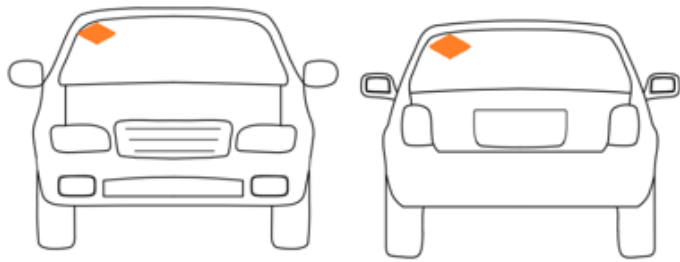
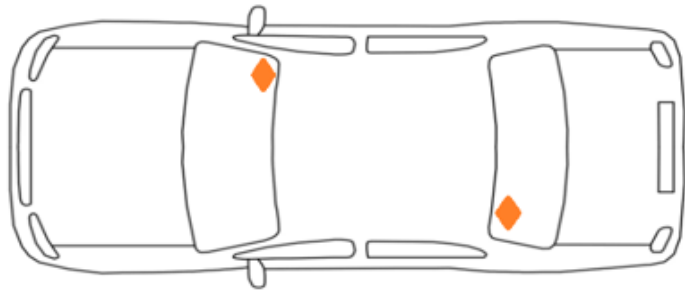


Figure 11.1 - Placement on a vehicle of category M1

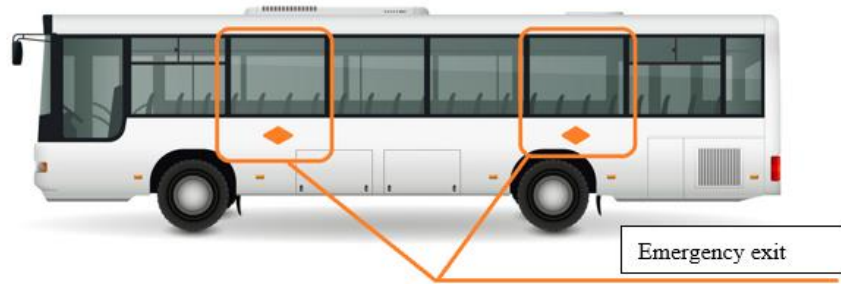


Figure 11.2 - Placement on a vehicle of categories M2 and M3

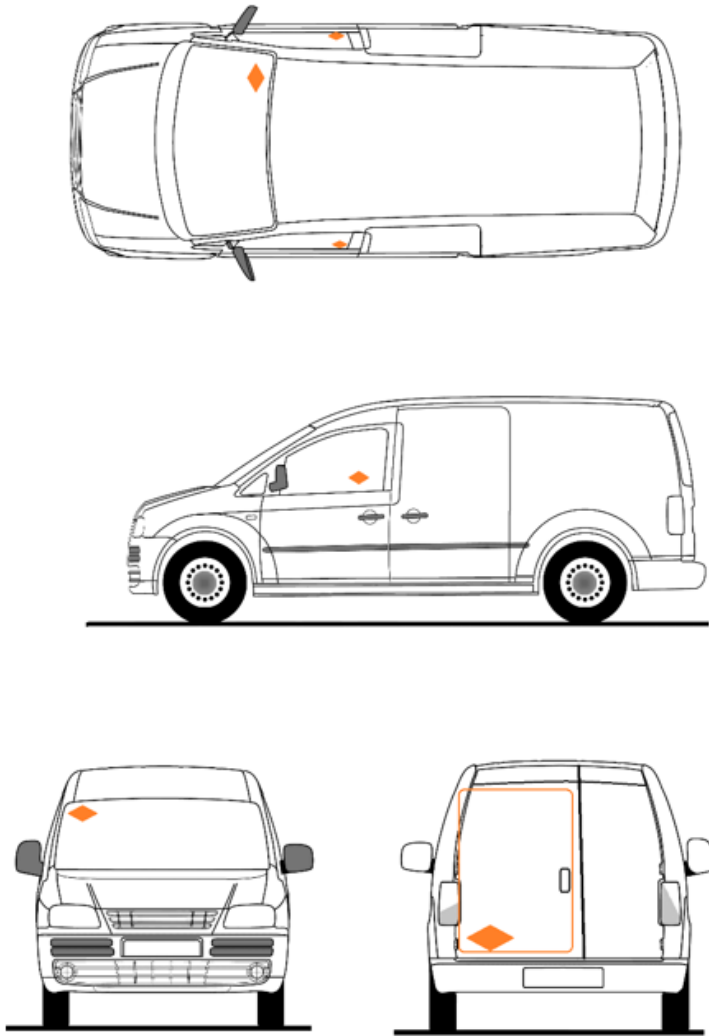


Figure 11.3 Placement on a vehicle of category N1

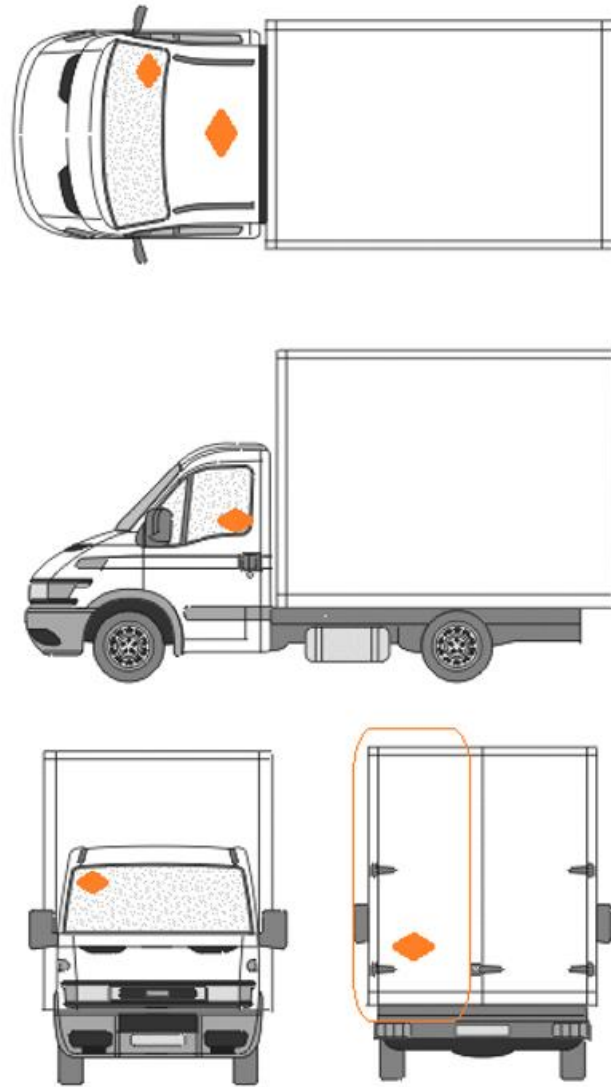


Figure 11.4 Placement on a vehicle of category N2

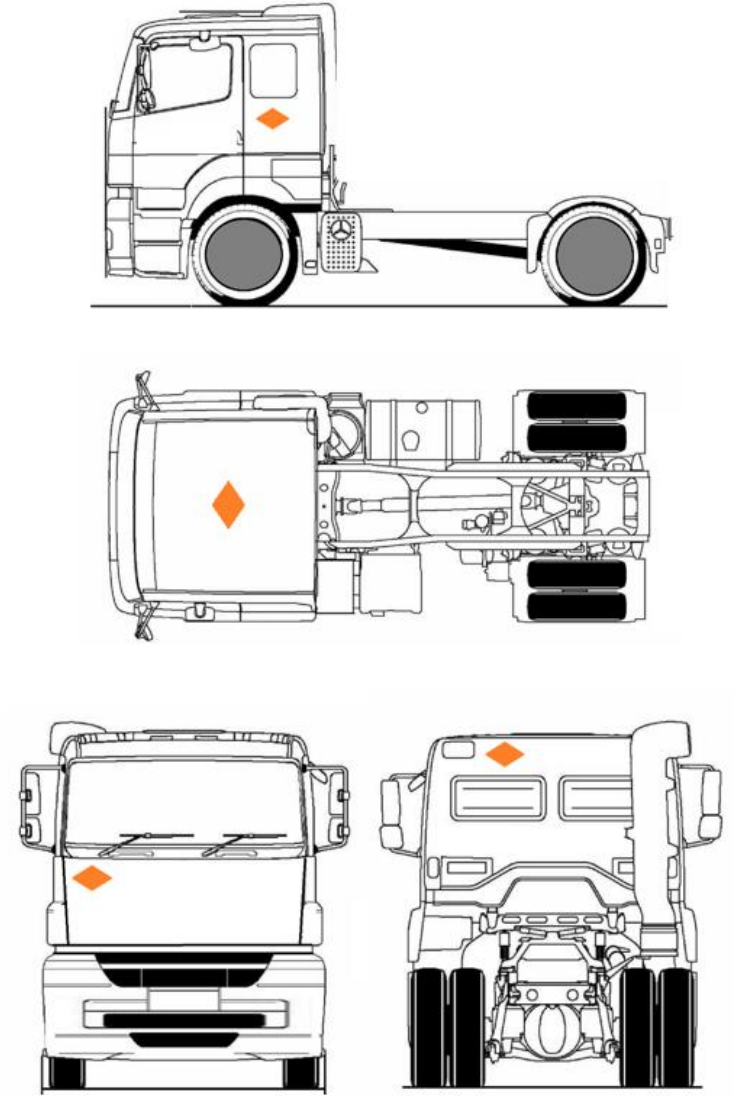


Figure 11.5 Placement on a vehicle of category N3

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THANK YOU

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