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Informal document GRSP-74-34
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agenda item 4)

xEV identification

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Statistical data in Russia

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Electric vehicles (07.2023):
221,315 units (0.47% of the total fleet)
- HEV: 190256
- PHEV: 5347
- EV: 25700
- FCV: 12

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**	**2023**
7 000	10 000	16 500	21 459	25700

Currently, the number of different brands and models vehicles :

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

What we did:

1. Introduction of the GOST ISO 17840 group of standards – 01 Juli 2024.

Associated countries:

1) Republic of Armenia (not identified)
2) Republic of Belarus 

3) Kyrgyz Republic (not identified)
4) Russian Federation (not identified)
5) Republic of Uzbekistan. 

2. Additions have been made to the Technical Regulation CU TR 018/2011 (include UN Regulation 100-2, UN Regulation 134, UN Regulation 136) – date of adoption of amendments is unknown.

However, developers of xEV and REESS are already independently guided by the provisions of UN Regulation 100-2.

3. For the first time, we conducted practical training on extinguishing lithium-ion batteries and REESS together with the Ministry of Emergency Situations (EMERCOM).

When summing up the results, the EMERCOM staff once again asked to work on the issue of identifying xEV.

Based on the results of practical training, the mandatory presence of special equipment was revealed, with which only 5% of crews are equipped.
Therefore, identification is also important for sending the right crew.
On practice:
•extinguished a battery fire
•they extinguished the fire inside the REESS
Conclusions: the most effective extinguishing is to supply water directly to the REESS.
Carbon dioxide fire extinguishers are able to put out a fire, but they are not able to stop the thermal acceleration process. Other means did not show the required effectiveness

We encountered another problem: When an electric car or hybrid is charging and the ignition is turned on, the low-voltage 12V battery overheats, boils and emits various gases.
3 cases were recorded:
Porsche Panamera Hybrid (2015)
Tesla model S (2018)
Voyah Free EV (2023)

Identification is therefore important for all categories of electric vehicles.

REESS size

Category M1, N1

2025 Cadillac Escalade IQ Sport 1

Battery: 200 kWh, **Voltage**: 800 V

2023 Tesla Model 3 Performance AWD

Battery: 82.1 kWh, **Voltage**: 360 V

20 - 200 kWh

Category M2,3

with best regards

40 -660 kWh

Category N2,3

50 - 600 kWh

ALL ELECTRIFIED TRANSPORT LIB FIRE INCIDENTS

Global, 1st January to 30th June 2023

A comparison of passenger electric vehicles (EVs), battery electric buses (BEB), battery electric trucks (BET) & light electric vehicles (LEV) such as e-bikes, e-scooters etc

Why EV FireSafe?

Transport emissions account for 25% of global greenhouse gas emissions, which has led to rapid electrification

EV battery fire incidents have led to concerns about emergency responder safety when attending lithium-ion battery fires

To enhance emergency responder safety, we researched electrifed transport HV battery fires from 1st Jan to 30th June 2023

EV, BEB, BET & LEV LiB fires

Passenger EVs

44
Battery fires
15
Injuries
4
Fatalities

Electric buses & trucks

3
Battery fires
0
Injuries
0
Fatalities

2
Battery fire
0
Injuries
0
Fatalities

Light electric vehicles

500+
Battery fires
138 *(up from 62 in Q1)*
Injuries
36 *(up from 9 in Q1)*
Fatalities

https://www.evfiresafe.com/_files/ugd/8b9ad1_c25fd371dc4b43849a09d37fa53089f7.pdf

Fires in buses and trucks occur 10 times less frequently than in passenger cars.

information taken from the site:

https://www.evfiresafe.com/

Location of identification stickers in accordance with UN Regulations

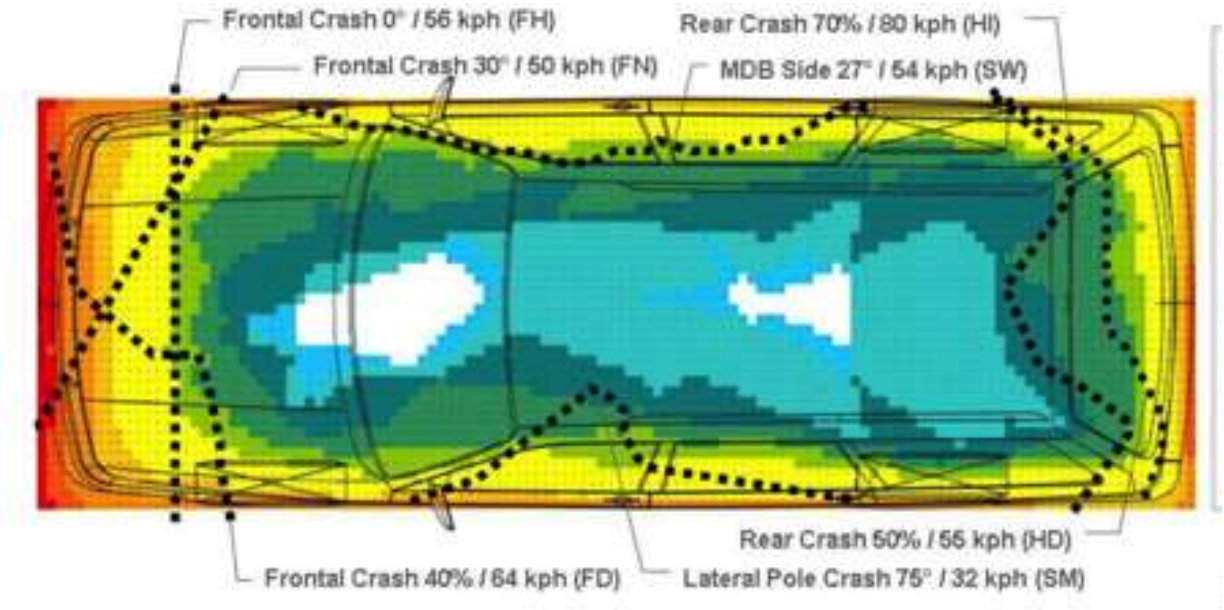
17.1.8. Identification of LPG-fuelled M2 and M3 category vehicles.
17.1.8.1. Vehicles of category M2 and M3 shall carry a plate as specified in Annex 17 to this Regulation.
17.1.8.2. The plate shall be installed on the front and rear of the M2 or M3 category vehicle and on the **outside of the doors** 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.

Locations of identification stickers

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.

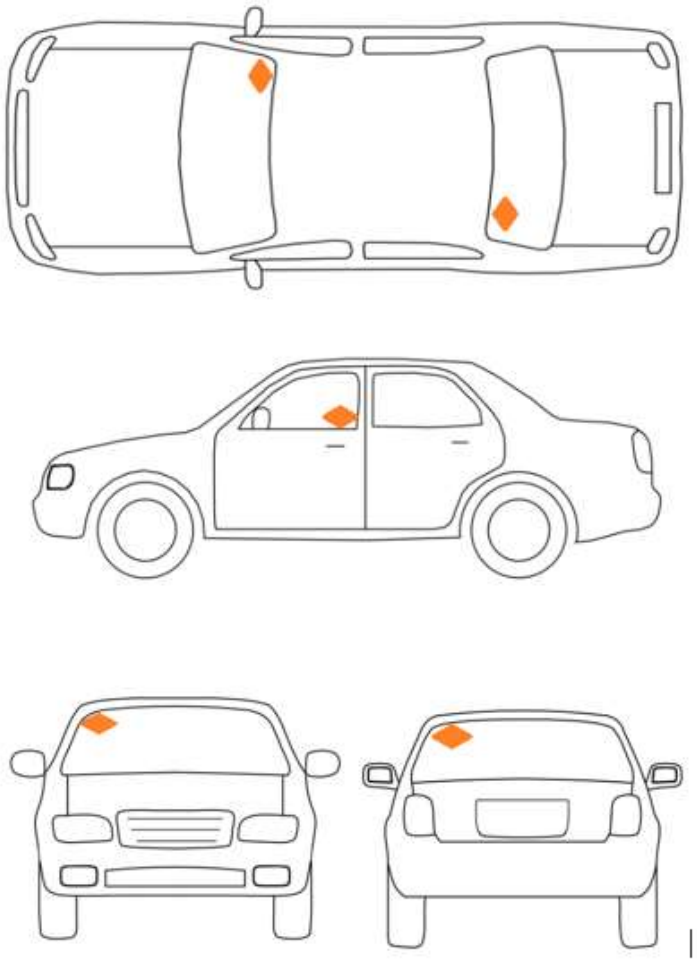


Figure 11.1 - Placement on a vehicle of category M1

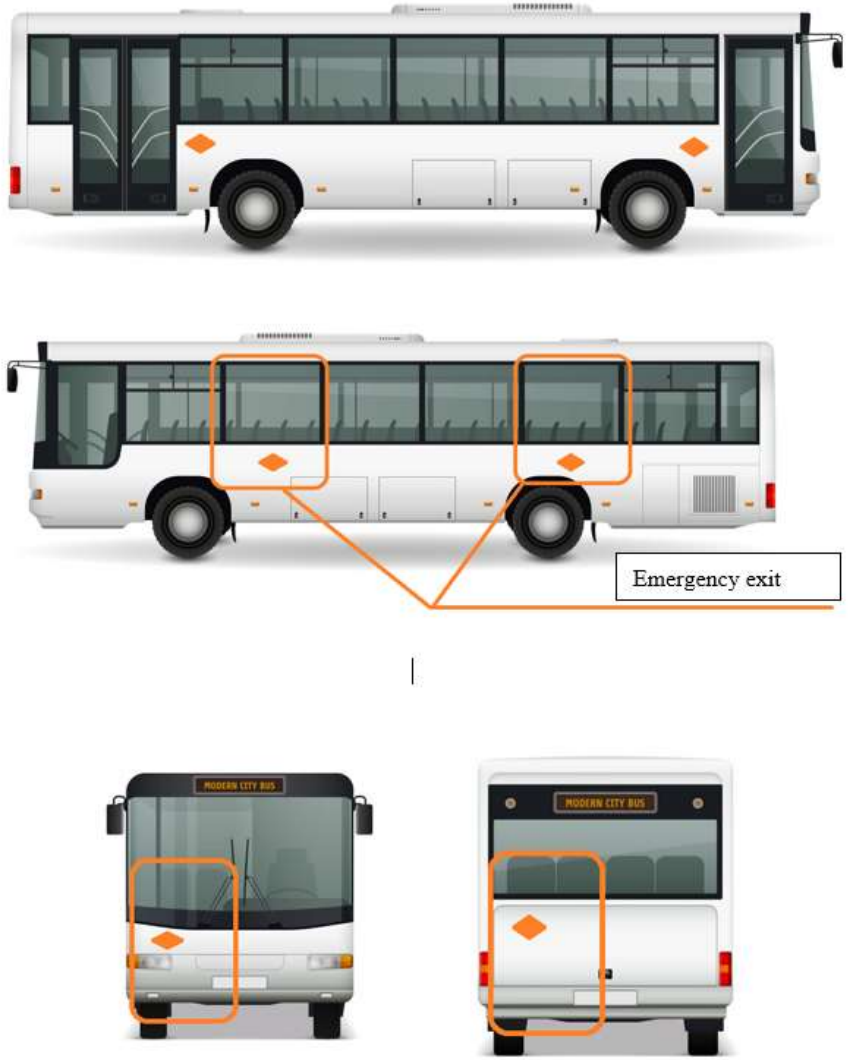


Figure 11.2 - Placement on a vehicle of categories M2 and M3

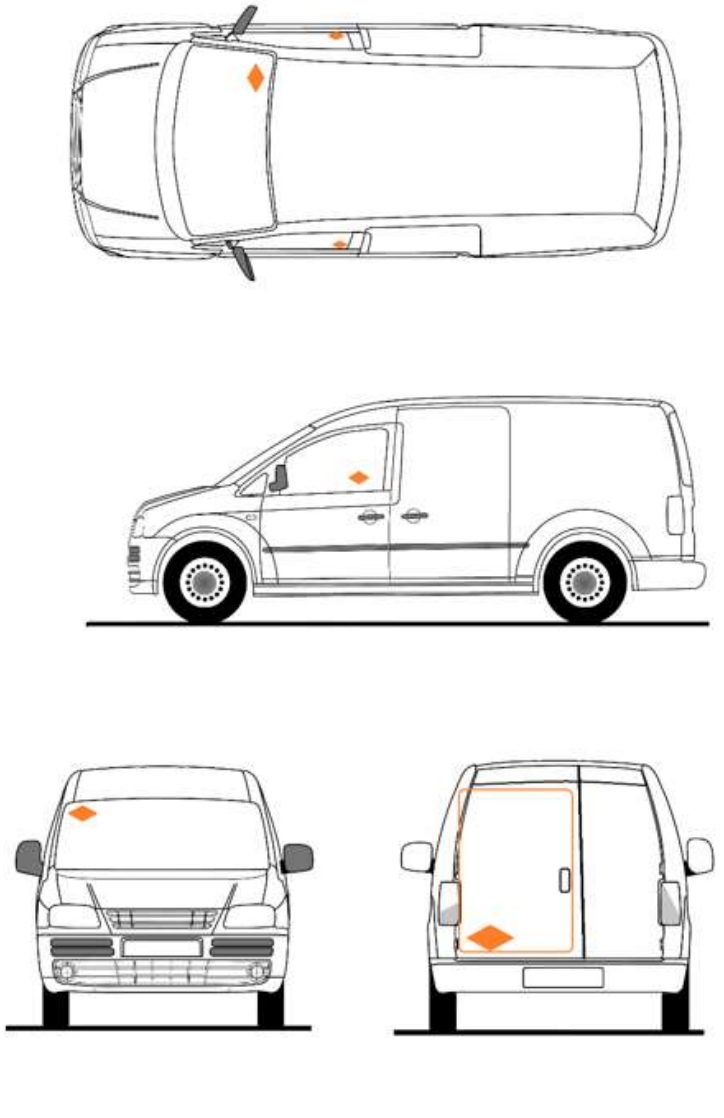


Figure 11.3 Placement on a vehicle of category N1

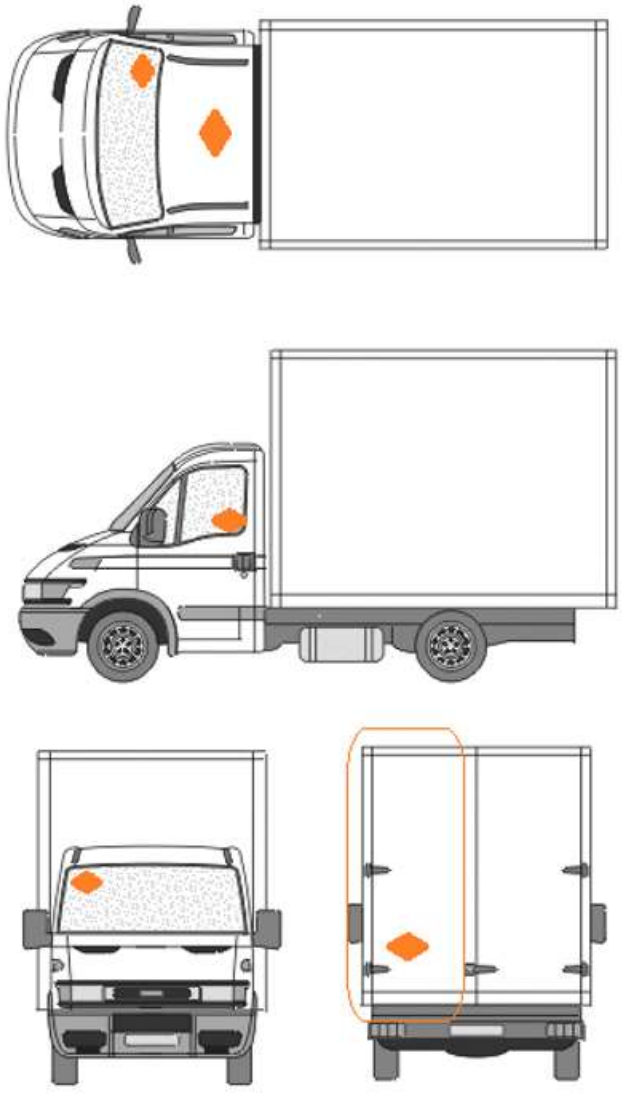


Figure 11.4 Placement on a vehicle of category N2

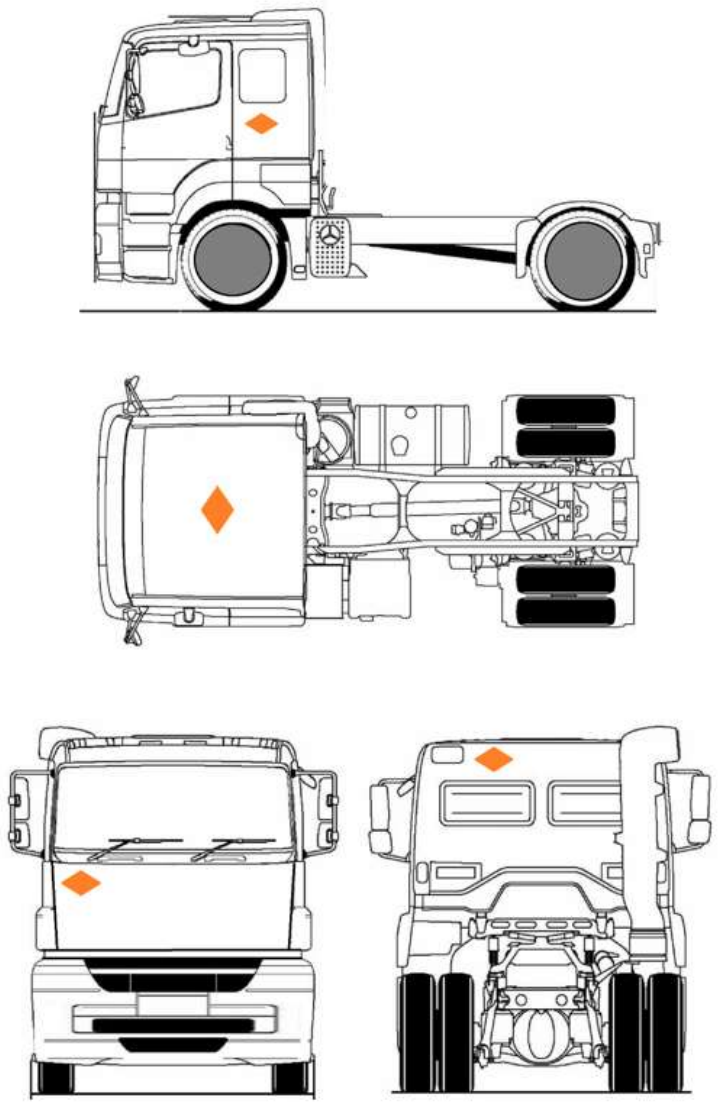


Figure 11.5 Placement on a vehicle of category N3

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THANK YOU

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