

## **Proposal for amendments to Regulation N°107 (M<sub>2</sub> and M<sub>3</sub> vehicles)**

The present document is tabled by the GRSG informal group on Service Doors, Windows and Emergency Exits (SDWEE) as an intermediate proposal for amendments to the Regulation N°107. Amendments to the current text of the Regulation are indicated in bold and strike-through characters.

### **I. Proposal**

*Add new paragraphs 2.41 and 2.43., to read:*

- "2.41.        **“Overnight locking system” means a system designed to provide the possibility to secure the service and emergency doors of the vehicle against opening.**
- 2.42.        **“Emergency lighting system” means a lighting system helping the occupants to locate the emergency exits in case of emergency.**
- 2.43         **“Safety sign” means a configuration of visual elements intended to convey a safety-related message.”**

#### **Annex 3.**

*Paragraph 7.6.1.7., amend to read:*

- “7.6.1.7.    If the driver’s compartment does not provide access to ~~the~~ a passenger compartment by means of a passageway **that permits complying with one of the conditions described in paragraph 7.7.5.1.1**
- (a) **the front edge of the cylindrical gauge defined in paragraph 7.7.5.1. to reach at least the transverse vertical plane tangential to the foremost point of the driver’s seat back in its rearmost longitudinal position, and**
- (b) **from this plane, it is possible to move the panel shown in Annex 4, figure 7 forwards from the contact position, with the cylindrical gauge until it reaches at least the vertical plane tangential to the foremost point of the driver’s seat cushion,**
- the following requirements ~~conditions~~ shall be met:

- 7.6.1.7.1.    The driver’s compartment shall have two exits, which shall not both be in the same lateral wall. When one of the exits is a window, ~~this window # shall comply with the requirements set out in paragraphs 7.6.3.1. and 7.6.8.~~ **have a minimum area of 400,000 mm<sup>2</sup>, it shall be possible to inscribe in this area a rectangle measuring 500 mm x 700 mm and it shall comply with the requirements set out in paragraph 7.6.8.** for emergency windows.

- 7.6.1.7.2.    One or two seats are permitted alongside the driver for additional people, in which case both of the exits referred to in paragraph 7.6.1.7.1. shall be doors.

The driver's door shall be accepted as the emergency door for the occupants of those seats, provided that it is possible to move a test gauge from the occupants' seats to the exterior of the vehicle through the driver's door (see Annex 4, figure 27).

Verification of the access to the driver's door shall be subject to the requirements of paragraph 7.7.3.2., by using the test gauge having a dimension of 600 x 400 mm, as described in paragraph 7.7.3.3.

The **service** door provided for the passengers shall be in the side of the vehicle opposite to that containing the driver's door and shall be accepted as the emergency door for the driver.

~~Up to five additional seats may be fitted in a compartment incorporating the driver's compartment, provided that the additional seats and the space for these seats comply with all requirements of this Regulation and at least one door giving access to the passenger compartment complies with the requirements of paragraph 7.6.3. for emergency doors.~~

~~7.6.1.7.3. In the circumstances described in paragraphs 7.6.1.7.1. and 7.6.1.7.2., the exits provided for the driver's compartment shall not count as one of the doors required by paragraphs 7.6.1.1. to 7.6.1.2., nor as one of the exits required by paragraph 7.6.1.4., except in the case mentioned in paragraphs 7.6.1.7.1. and 7.6.1.7.2. Paragraphs from 7.6.3. to 7.6.7., 7.7.1., 7.7.2. and 7.7.7. shall not apply to such exits. Paragraphs 7.6.3. to 7.6.7., 7.7.1., 7.7.2. and 7.7.7. shall not apply to the exits provided for the driver's compartment as referred to in paragraphs 7.6.1.7.1. and 7.6.1.7.2.”~~

*Add new paragraphs 7.6.1.4. and 7.6.1.5., to read:*

**“7.6.1.7.4. In the circumstances described in paragraphs 7.6.1.7.1. and 7.6.1.7.2., the exits provided for the driver’s compartment and any seats alongside the driver shall not count as one of the doors required by paragraphs 7.6.1.1. to 7.6.1.2., nor as one of the emergency exits required by paragraph 7.6.1.4. for any other passenger compartment.**

**7.6.1.7.5. Up to five additional seats may be fitted in a compartment incorporating the driver’s compartment and any seats alongside the driver, provided that the additional seats and the space for these seats comply with all requirements of this Regulation and at least one of the emergency exits required by paragraph 7.6.1.4. is a door giving access to the passenger compartment complying with the requirements of paragraph 7.6.3.1.2. for emergency doors.”**

*Paragraph 7.6.1.8., amend to read:*

**“7.6.1.8. If the driver’s compartment is accessible from a passenger compartment by means of a passageway complying with the requirements of parts (a) and (b) of paragraph 7.6.1.7., and any seats adjacent to ~~it~~ this driver’s compartment, are accessible from ~~the main~~ that same passenger compartment by means of a passageway complying with one of the conditions described in paragraph 7.7.5.1.1., no external exit is required from the driver’s compartment”**

*Paragraph 7.6.1.9., amend to read:*

**“7.6.1.9. If a driver’s door or other exit from the **driver’s** compartment is provided in the circumstances described in paragraph 7.6.1.8. it may ~~only~~ count as **one of the required exits** ~~an exit~~ for passengers **in vehicles of Class A or B** provided:**

**7.6.1.9.1. it satisfies the requirements relating to the dimensions of emergency door indicated in paragraph **7.6.3.1.2.** ~~7.6.3.1.~~;**

**7.6.1.9.2. it fulfils the requirements ~~indicated in~~ of paragraph 7.6.1.7.2.;**

**7.6.1.9.3. the space reserved for the driver’s seat shall communicate with the main passengers’ compartment through an appropriate passage; such requirement shall be deemed to be fulfilled if the test gauge described in paragraph 7.7.5.1. can move unobstructed from the gangway, until the front**

end of the gauge reaches the vertical plane tangential to the foremost point of the driver's seat back (this seat being situated in its rearmost longitudinal position) and, from this plane, the ~~test gauge panel~~ described in paragraph 7.6.1.7.2. ~~can~~ ~~could~~ be moved to the emergency door in the direction established by such paragraph (see Annex 4, figure 28) with seat and steering wheel adjustment in their mid position."

*Add a new paragraph 7.6.1.9.4., to read:*

**"7.6.1.9.4. If there is a door opposite the driver's door, the provisions of paragraph 7.6.1.9. shall apply to it, provided that there is not more than one passenger's seat beside the driver."**

*Paragraph 7.6.3.1.5., amend to read:*

"7.6.3.1.5. An escape hatch shall have a hatch aperture with a minimum area of ~~400,000 mm<sup>2</sup>~~ **450,000 mm<sup>2</sup>**. It shall be possible to inscribe in this area a rectangle measuring ~~500 mm~~ **600 mm** x 700 mm."

*Insert a new paragraph 7.6.4.11., to read:*

**"7.6.4.11. If an overnight locking system is provided, the following shall apply:**

**7.6.4.11.1. the locking system shall have been automatically deactivated when the ignition is in the "ON" position or**

**7.6.4.11.2. A warning shall be provided to the driver indicating that the overnight locking system remains in operation at one or more door(s) when the ignition is in the "ON" position. One signal may be used for more than one door."**

*Paragraph 7.6.7.2., amend to read:*

"7.6.7.2. Emergency doors, during their use as such, shall not be of the power-operated type, unless, **either a service door control prescribed in paragraph 7.6.5.1. or a control for a dedicated emergency door complying with the provisions of paragraph 7.6.5.1.** ~~once one of the controls prescribed in paragraph 7.6.5.1.~~ has been actuated and returned to its normal position, the doors do not close again until the driver subsequently operates a closing control. Activation of one of the controls ..."

*Insert a new paragraph 7.6.7.7., to read:*

**"7.6.7.7. If an overnight locking system is provided, the following shall apply:**

**7.6.7.7.1. The locking system shall have been automatically deactivated when the ignition is in the "ON" position or**

**7.6.7.7.2. A warning shall be provided to the driver indicating that the overnight locking system remains in operation at one or more door(s) when the ignition is in the "ON" position. One signal may be used for more than one door."**

*Delete paragraphs 7.7.4.1.1. and 7.7.4.1.2.*

*Paragraph 7.6.11., amend to read:*

"7.6.11. ~~Markings~~ **Safety signs"**

*Add new paragraphs 7.6.11.1. and 7.6.11.2., to read:*

**“7.6.11.1. General requirements**

- 7.6.11.1.1. Each safety sign required by this Regulation shall be used to communicate only one safety message. The information provided shall be in the form of pictograms, however, words, letters and numbers may supplement the pictogram in combination on the same sign. It shall be located and orientated so as to be easily understood.**
- 7.6.11.1.1.1. Pictograms indicating a required action by the user shall show a person, or the relevant part of a person, operating the equipment or device.**
- 7.6.11.1.1.2. Pictograms indicating a required movement shall, where appropriate, show an arrow pointing in the direction of motion. Where a rotational movement is required, a curved arrow shall be used**
- 7.6.11.1.1.3. Where devices are to be operated, panels removed or doors opened, the pictogram shall indicate the action in progress.**
- 7.6.11.1.1.4. The lower case letter(s) of supplementary words, single letters and numbers shall have a minimum height of 8mm. Words shall not be in upper case letters only.**
- 7.6.11.1.2. All safety signs shall be of photo-luminescent material having luminance decay characteristics conforming, as a minimum, to sub-classification C in Table 2 of ISO 17398: 2004, when measured in accordance with paragraph 7.11 of that standard and, in the case of signs for external use, after testing in accordance with paragraph 7.3 of the standard.**
- 7.6.11.1.3. Safety signs shall not be located in positions where they may be obscured during operation of the vehicle. However, a curtain or blind may be positioned over an emergency window provided an additional safety sign indicates that the emergency window is located behind the curtain or blind.**
- 7.6.11.1.4. All safety signs shall comprise a white pictogram on a green colour background.**
- 7.6.11.1.5. All safety signs shall have a white border, having a width of at least 2mm, irrespective of the size of the sign.**
- 7.6.11.2. Positioning of safety signs**
- 7.6.11.2.1. Safety signs identifying the control or the device for breaking emergency windows shall be positioned adjacent to, or surround all internal and external emergency controls for all exits.**
- 7.6.11.2.2. No part of a safety sign shall obscure any misuse protection that may be present, e.g. a cover.**
- 7.6.11.2.3. Each emergency exit, and any other exit that meets the prescriptions for an emergency exit, shall be marked, inside and outside the vehicle ~~by an inscription reading "Emergency Exit" and supplemented, where appropriate, by one of the relevant pictograms described in ISO standard 7010:2003.~~ with a safety sign complying with the requirements of paragraphs 7.6.11.1.1., 7.6.11.1.1.4., 7.6.11.1.2., 7.6.11.1.3., 7.6.11.1.4. and 7.6.11.1.5.**

*Paragraphs 7.6.11.2.to 7.6.11.4., re-number as 7.6.11.3. to 7.6.11.5.*

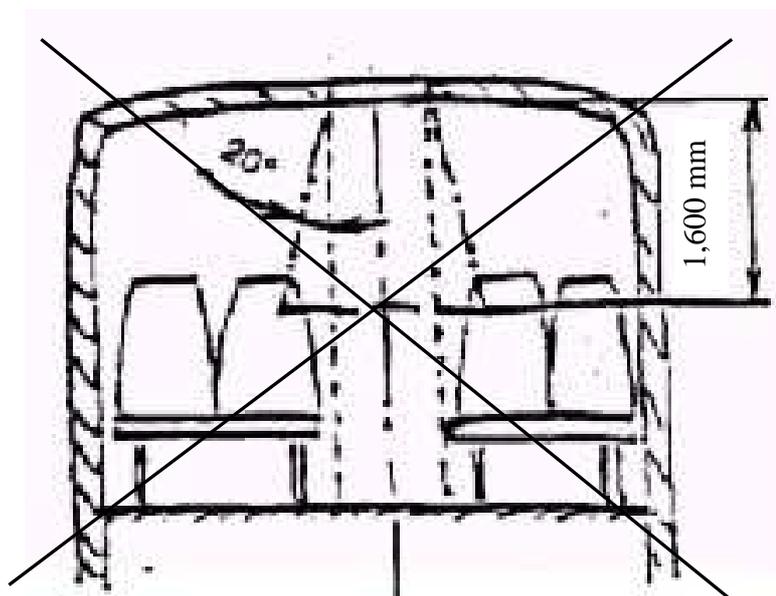
*Annex 4, figure 26, amend to read:*

Figure 26

Reserved

## ROOF ESCAPE HATCH ACCESS

(see Annex 3, paragraph 7.7.4.1.1.)



## II. Justification

### Paragraph 2.41.

Addition of a definition of “overnight locking system” as a proposal to include the item in the Regulation, per paragraphs 7.6.4.11. (service doors) and 7.6.7.7. (emergency doors). The SDWEE informal group believes that centralized overnight unlocking would be appreciated by most operators in order to facilitate some basic security features. The informal group decided to address this issue because centralized overnight locking system might interfere with the functioning of the emergency exits.

### Paragraph 2.42.

Addition of a definition of “emergency lighting system”. The SDWEE informal group found opportune to add provisions for emergency lighting system as a practical way to help the occupants of a vehicle reaching access to the exits in case of emergency.

### Paragraph 2.43.

The informal group found relevant to introduce new provisions for safety signs in order to improve the level of safety thanks to some harmonisation of the signage. The informal group agreed to introduce the provisions relating to the safety signs in the existing paragraph 7.6.11. (markings).

### Paragraph 7.6.1.7.

None of the conditions described in paragraph 7.7.5.1. are applicable to the driver’s compartment. Paragraph 7.7.5.1.1.1. is the most suited but in most vehicles it is impossible to move the panel forward by 660 mm as the dashboard in front of the driver is usually curved so that the controls are within the driver’s reach. The proposal is such that the gangway test gauge is moved to coincide with the driver’s seat back (as for the forward facing passenger seat and for paragraph 7.6.1.9.3. describing how a driver’s door can be used as an exit for passengers) and then the panel is moved forward to the

foremost point of the driver's seat cushion. This is to ensure that the driver has sufficient free height and width when accessing or leaving his seat.

Paragraph 7.6.1.7.1.

The requirements for emergency windows are specified in paragraph 7.6.3.1.3. so it is more precise copy the current text of 7.6.3.1.3. into paragraph 7.6.1.7.1.

Paragraph 7.6.1.7.2.

The minimum dimensions are applicable to service doors only.

It is clearer if this paragraph only deals with the driver's seat and seats alongside (without a passageway to the passenger's compartment) and the requirements for the five additional seats being transferred into a new paragraph (7.6.1.7.5).

Paragraph 7.6.1.7.3.

Moving of the last sentence of paragraph 7.6.1.7.4., which helps to define the technical requirements for the exits defined in paragraphs 7.6.1.7.1. and 7.6.1.7.2., from that paragraph and putting it alone in a revised paragraph 7.6.1.7.3. Having prescribed when and where exits are required it is better to fix their technical requirements immediately, rather than to "hide" them as the last sentence of a following paragraph.

Paragraph 7.6.1.7.3. renumbered as 7.6.1.7.4.

The text of existing paragraph 7.6.1.7.3. is difficult to comprehend. The intention is that when the driver's compartment and any passenger seats alongside the driver do not have an acceptable passageway to a passenger compartment, then the driver's door and the passenger's door on the opposite side of the vehicle are not accessible to any other passengers and shall not be counted as exits for the passenger compartment. The passenger compartment requires the exits as defined in paragraph 7.6.1. without using the driver's and front passenger's doors.

New Paragraph 7.6.1.7.5.

Moved from paragraph 7.6.1.7.2. and modified to make it clear that:

- a) the five additional seats are in addition to any passenger seats alongside the driver;
- b) as there is no passageway between the front seats (driver's and adjacent passenger's) and the five additional seats, these additional seats must be considered as being in a separate compartment with the required number of exits (two), one of which must be an emergency door giving access to the main passenger compartment.

Note: Paragraphs 7.6.1.8. & 7.6.1.9 are specific to vehicles in which there is an acceptable passageway from the driver's and adjacent passenger's seats to the passenger compartment. Paragraph 7.6.1.8. says that in such vehicles an external exit is not required from the driver's compartment, but paragraph 7.6.1.9. says that if an exit is provided it can be counted as an exit for the passengers with no limit on the number of passengers.

Paragraph 7.6.1.9.

Clarification that when there is an acceptable passageway between the passenger's compartment and the driver's compartment, the driver's door and/or the front passenger's door can only be used for passengers in vehicles of Class A or B. This possibility came from Regulation N° 52 and did not exist in Regulation N° 36.

Paragraph 7.6.1.9.1.

The requirements for emergency doors are specified in paragraph 7.6.3.1.2. so it is more precise to specify this paragraph rather than paragraph 7.6.3.1., which applies to all exits.

Paragraph 7.6.1.9.3.

Paragraph 7.6.1.7.2. refers to a test gauge and not to a panel. The word “can” is more appropriate than “could”.

Paragraph 7.6.1.9.4.

Paragraph 7.6.1.9.4. is taken from paragraph 5.7.2.5. of Regulation N° 52 and is introduced to allow a door for 1 passenger seated alongside the driver to be used as an emergency door for the main passenger compartment.

Paragraph 7.6.3.1.5.

It is considered an improvement of the level of safety to increase the required dimensions of the escape hatches. The proposal increases the surface of the hatch by 12.5% in order to take into account the situations in the real world, i.e. the occupants wearing winter clothes, elderly people etc. With the same attention given to safety, the minimum area of the rectangle to be inscribed in the hatch aperture is increased by 20%.

Paragraphs 7.6.4.11. and 7.6.7.7.

See justifications to the new paragraph 2.41. (definition of “overnight locking system”)

Paragraph 7.6.7.2.

Paragraph 7.6.7.2 permits that emergency doors are power-operated provided that they meet certain provisions. One of the provisions seems to suggest that there must be an emergency device for opening the emergency door. However, the present wording refers to one of the devices prescribed in paragraph 7.6.5.1., being the emergency devices for the power operated service door. This could bring to the conclusion that a power-operated emergency door can only be opened by the emergency device for service door(s). The proposed wording clarifies that either such a control or a control for the dedicated emergency door can be used to operate the door.

Deletion of paragraphs 7.7.4.1.1. and 7.7.4.1.2.

Reports on bus accidents have shown that the emergency hatches in the roof are only used when the bus or coach has tilted. While the bus or coach is in the driving position the emergency hatches are not used by the passengers in the case of emergency.

Therefore it seems justifiable that no exit support is required.

The figure N°26 to which these paragraphs refer should be deleted as well.

Paragraph 7.6.11.1.1.2.

The informal group supported the mandatory indication of a movement where appropriate, including rotational movement which is required elsewhere for emergency exits. The particular case of a movement not included in the plan of the sticker (e.g. in the case of a roof hatch) will be addressed by the informal group in a later stage, probably by defining a different pictogram applicable to each of the four different kinds of emergency exit.

Paragraph 7.6.11.1.2.

The experts of the informal group had an agreement in principle with the proposed wording, and acknowledged that the requirement for “photo-luminescent” signs could preclude other systems.

Paragraph 7.6.11.1.3.

The informal group proposes this wording as a solution to the challenge offered to the operators to make the safety signs visible while in the same time equipping the vehicles with blinds and curtains.

Paragraphs 7.6.11.1.4. and 7.6.11.1.5.

It is believed that such harmonisation is the correct approach for safety.

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