

Proposal from the expert from France to improve and re-arrange the wording of the text of the regulation in accordance with the informal group proposal for amendments to UN R43 (document GRSG-104-43)

Paragraph 5.5., amend to read:

- 5.5. The following additional symbols shall be affixed near the above approval mark:
- 5.5.1. In the case of a windscreen:
- I for toughened glass
 - II for ordinary laminated glass
 - III for treated laminated glass
 - IV for glass-plastics glazing.
- 5.5.2. V in the case of safety glazing having a regular light transmittance less than 70 per cent.
- 5.5.3. VI in the case of double-glazed unit
- 5.5.4. VII in the case of uniformly-toughened glass glazing which can be used as windscreens for slow-moving vehicles which, by construction, cannot exceed 40 km/h.
- 5.5.5. VIII In the case of rigid plastic glazing. In addition the appropriate application will be signified by:
- /A for forward facing panes
 - /B for ~~other glazings panes where there is a risk of head impact side, rear and roof glazings~~
 - /C for ~~other glazings panes where there is no risk of head impact in locations where there is little or no chance of head impact~~
- In addition, for plastic glazing which has been submitted to the abrasion resistance tests described in Annex 3, paragraph 4., the following markings shall also be applied as appropriate:
- /L for glazing with a light scatter not exceeding 2 per cent after 1,000 cycles on the outer surface and 4 per cent after 100 cycles on the inner surface (see Annexes 14 and 16, paragraph 6.1.3.1.)
 - /M for glazing with a light scatter not exceeding 10 per cent after 500 cycles on the outer surface and 4 per cent after 100 cycles on the inner surface (see Annexes 14 and 16, paragraph 6.1.3.2.)
- 5.5.6. IX in the case of flexible-plastic glazing
- 5.5.7. X in the case of a rigid plastic double-glazed unit. In addition, the appropriate application will be signified by:
- /A for forward facing panes
 - /B for ~~other glazings panes where there is a risk of head impact side, rear and roof glazings~~

/C for **other glazings panes where there is no risk of head impact in locations where there is little or no chance of head impact**

For plastic glazing which has been submitted to the abrasion resistance test described in Annex 3, paragraph 4., the following markings shall also be applied as appropriate:

/L for glazing with a light scatter not exceeding 2 per cent after 1,000 cycles on the outer surface and 4 per cent after 100 cycles on the inner surface (see Annex 16, paragraph 6.1.3.1.)

/M for glazing with a light scatter not exceeding 10 per cent after 500 cycles on the outer surface and 4 per cent after 100 cycles on the inner surface (see Annex 16, paragraph 6.1.3.2.).

- 5.5.8. XI in the case of a laminated-glass panes.
- 5.5.9. XII in the case of glass-plastic panes
- 5.5.10. /P in the case of a safety glazing made of glass, with a layer of plastics material on its inner face

Annex 14

Rigid plastic panes

- 4.3. Test method
- 4.3.1. The method used shall be that described in Annex 3, paragraph 3.2.
- 4.3.2. For **forward facing panes** ~~glazing like such as windscreens~~ partitions and separating windows ~~which have impact probability~~ (classification VIII/A) the drop height shall be 3 m. The HIC value is also to be measured.
- 4.3.3. For ~~other glazings~~ **panes** ~~like side windows, back windows and sunroofs~~ ~~which have reduced a risk of head impact possibilities~~ (classification **classified as VIII/B**) the drop height shall be 1.5 m. The HIC value is also to be measured.
- 4.3.4. For ~~other glazings~~ **panes** ~~which do not have head impact risk contact possibilities~~ as well as for small windows in vehicles and for all windows in trailers (~~classification~~ **classified as VIII/C**) there will be no headform testing. A small window is a window into which a 150 mm diameter circle cannot be scribed.

Annex 21

Provisions regarding the installation of safety glazing on vehicles

1. Scope

This annex sets out provisions regarding the installation of safety glazing in vehicles of categories M, N and O¹ in order to ensure a high level of safety for the occupants and, in particular, to provide the driver with a high degree of visibility in all traffic conditions, not only forwards but also rearwards and laterally.

It does not apply to armoured vehicles as defined hereunder in paragraph 2.3.

2. Definitions

For the purpose of this annex,

2.1. "*Vehicle*" means any motor vehicle and its trailer, intended for use on the road, having at least four wheels and a maximum design speed exceeding 25 km/h, with the exception of vehicles which run on rails and all mobile machinery;

2.2. "*Category of vehicles*" means a set of vehicles entering into the relevant category of the classification adopted in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3)¹;

2.3. "*Special purpose vehicle*", "*motor caravan*", "*armoured vehicle*", "*ambulance*", "*hearse*", "*convertible*", are respectively defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3)¹.

2.4. "*Double-deck vehicle*" is defined in paragraph 2.1.2. of Regulation No. 107.

2.5. "*Normal condition of use of a vehicle*" means:

2.5.1. **For a motor vehicle, when the vehicle is ready to move with its propulsion engine system in the running position and its movable components in the normal position(s) as defined in paragraph 2.8.;**

2.5.2. **And for a trailer, when the trailer is ~~connected~~ coupled to a ~~drawing~~ towing motor vehicle in the conditions as prescribed in paragraph 2.5.1. and its movable ~~are~~ components in the normal position(s) as defined in paragraph 2.8.**

2.6. "*Park condition of a vehicle*" means:

2.6.1. **For a motor vehicle, when the vehicle is at standstill and its propulsion engine system is not in the running position and its movable components ~~are~~ in the normal position(s) as defined in paragraph 2.8.;**

2.6.2. **And for a trailer, when the trailer is ~~connected~~ coupled to a ~~drawing~~ towing motor vehicle in the condition as described in paragraph 2.5.1.**

¹ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3) (TRANS/WP.29/78/Rev. 2, para. 2).

and its movable components are in the normal position(s) as defined in paragraph 2.8.

- 2.7. **"Movable components"** of the a vehicle mean those body panels or other vehicle parts the position(s) of which can be changed by tilting, rotating or sliding without the use of tools. They do not include tiltable driver cabs of trucks.
- 2.8. **"Normal position of use of a movable component"** means the position(s) of a movable component specified by the vehicle manufacturer for the normal condition of use and the park condition of the vehicle.
3. General provisions applicable to vehicles of categories M, N and O
- 3.1. Safety glazing shall be fitted in such a way that, despite the stresses to which the vehicle is submitted under normal **conditions of use of a vehicle as defined in paragraphs 2.5., 2.5.1. and 2.5.2.** ~~operating conditions~~, it remains in position and continues to afford visibility and safety to the occupants of the vehicle;
- 3.2. Safety glazing shall bear the appropriate component type-approval mark specified in paragraph 5.4. of this Regulation, followed when required, by one of the additional symbols provided for in paragraph 5.5.
- 3.3. **Exemptions**
In the case of plastic safety glazings panes, the provisions related to abrasion resistance as referred to in paragraph 4.2.3.2. of this annex do not apply for the vehicles and glazing panes locations listed below:
- (a) **Ambulances;**
 - (b) **Hearses;**
 - (c) **Trailers, including caravans;**
 - (d) **Sunroofs and ~~glazings~~ glazing located in the roof of a vehicle;**
 - (e) **All ~~glazings~~ glazing of the upper deck of a double-deck vehicle;**
 - (f) **Partitions and separating windows.**
- No abrasion test/symbol is required.**
4. Specific provisions applicable to vehicles of categories M and N¹
- 4.1. Windscreens
- 4.1.1. The regular light transmittance shall not be less than 70 per cent.
- 4.1.2. The windscreen shall be type approved for the vehicle type for which it is intended to be fitted.
- 4.1.3. The windscreen shall be correctly fitted with reference to the vehicle driver's "R" point.
- 4.1.4. Vehicles having a maximum design speed greater than 40 km/h may not be fitted with a toughened windscreen.
- 4.1.5 **Plastic safety ~~glazing~~ panes shall bear an additional symbol /A/L as defined in paragraphs 5.5.5. and 5.5.7. of this Regulation.**

- 4.2. **Partition glazings glazing or** safety glazing other than windscreens ~~and partition glazing~~
- 4.2.1. Safety glazing requisite for the driver's forwards field of vision
- 4.2.1.1. The safety glazing through which the driver's forwards field of vision as defined in paragraph 2.23.1. of this Regulation is obtained, shall have a regular light transmittance of at least 70 per cent.
- 4.2.1.2. Plastic safety glazing shall bear an additional symbol /B/L **or** /C/L, as defined in paragraphs 5.5.5. and 5.5.7. of this Regulation.
- 4.2.2. Safety glazing requisite for the driver's rearward vision
- 4.2.2.1. The safety glazing defined in paragraph 2.23.2. of this Regulation shall have a light transmittance of at least 70 per cent, but where two exterior rear view mirrors are fitted, the glazing is allowed to have a light transmittance below 70 per cent, provided that it shall bear the additional symbol V specified in paragraph 5.5.2. of this Regulation.
- 4.2.2.2. Plastic safety glazing shall bear an additional symbol /A/L, ~~or~~ /A/M, ~~or~~ /B/L, ~~or~~ /B/M, ~~or~~ /C/L **or** /C/M, as defined in paragraphs 5.5.5. and 5.5.7. of this Regulation.
- ~~As an alternative, the rear glazing in the folding roof of a convertible vehicle may bear the additional symbol /B/M.~~
- The rear glazing in the folding roof of a convertible vehicle may be made of a flexible plastic pane.
- 4.2.3. Other safety glazing
- 4.2.3.1. The safety glazing not covered by the definitions of paragraphs ~~2.18.1.~~ **2.23.1.** and ~~2.18.2.~~ **2.23.2.** of this Regulation shall bear the additional symbol V specified in paragraph 5.5.2. of this Regulation, if the light transmittance is below 70 per cent.
- 4.2.3.2. Plastic safety ~~glazings~~ **panes** shall bear one of the additional symbols /A/L, ~~or~~ /A/M, ~~or~~ /B/L, ~~or~~ /B/M, ~~or~~ /C/L **or** /C/M defined in paragraphs 5.5.5., ~~5.5.6.~~ and 5.5.7. of this Regulation. However, when the vehicle is intended for conveying passengers, ~~glazings~~ **panes** with the additional symbols /C/L or /C/M are not allowed at locations where there is a risk of head impact.
- ~~4.2.4. Exemptions~~
- ~~In the case of plastic safety glazings, the provisions related to abrasion resistance as referred in paragraphs 4.2.2.2. and 4.2.3.2. of this annex do not apply for the vehicles and glazing locations listed below:~~
- ~~(a) Ambulances~~
 - ~~(b) Hearses~~
 - ~~(c) Trailers, including caravans~~
 - ~~(d) Sunroofs and glazings located in the roof of a vehicle~~
 - ~~(e) All glazings of the upper deck of a double deck vehicle~~
- ~~No abrasion test/symbol is required.~~
- 4.3. Particular requirements

- 4.3.1. Any forward-facing glazing other than a windscreen shall be constituted either by laminated glass or a plastic pane bearing the additional symbol /A, as defined in paragraphs 5.5.5. and 5.5.7. of this Regulation.
- 4.3.2. Paragraph 4.3.1. is not applicable to vehicles having a maximum design speed lower than 40 km/h.