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World Forum for Harmonisation of Vehicle Regulations (WP.29)

Working Party on General Safety Provisions (GRSG)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 43
(Safety glazing)

Transmitted by CLEPA

Note: The text reproduced below was prepared by the experts from Clepa in order to consolidate documents TRANS/WP.29/GRSG/1999/12/Rev.1, 1999/12/Rev.1/Add.1 and 2001/8/Rev.1, which it supersedes.

The document was prepared on request of the President at the 81st session.

It includes provisions allowing approvals of vehicles with regard to safety glazing based on the existing provisions contained in European Community Directive EEC/92/22, and to include, in addition, installation requirements for glazing made entirely of plastic. These amendments are based on the text of Regulation No. 43 as amended by Supplement 6.

Note: This document is distributed to the Experts on General Safety Provisions only.

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PROPOSAL:

The title of the Regulation, amend to read:

"UNIFORM PROVISIONS CONCERNING THE APPROVAL OF SAFETY GLAZING MATERIALS
AND THEIR INSTALLATION ON VEHICLES "

The List of Contents, annexes, amend to read:

- "Annex 1 -
- Annex 1A - Communication concerning approval (or extension or refusal or withdrawal of approval or production definitely discontinued) of a vehicle type with regard to its safety glazing.
- Annex 2A - Arrangement of approval marks for components
- Annex 2B - Arrangement of approval marks for vehicles.....
- Annex 21 - Provisions regarding the installation of safety glazing on vehicles."

The text of the Regulation,

Paragraph 1.1., amend to read:

"1.1. This Regulation applies to safety glazing materials intended for installation as windscreens or other panes, or as partitioning, on power-driven vehicles and their trailers, and to the fitting thereof, to the exclusion, however, of glazings for lighting and light-signalling devices and instrument panels, and of special bullet-proof glazings.

This Regulation does not concern double windows."

Paragraph 2.18., amend to read:

- "2.18. "Safety glazing material requisite for driver visibility"
- 2.18.1. "Safety glazing material requisite for the driver's forward field of vision" means all the glazing situated in front of a plane passing through the driver's R point and perpendicular to the longitudinal median plane of the vehicle through which the driver can view the road when driving or manoeuvring the vehicle.
- 2.18.2. "Safety glazing material requisite for the driver's rearward vision" means all glazing situated behind a plane passing through the driver's R point perpendicular to the longitudinal median plane of the vehicle through which the driver can view the road when driving or manoeuvring the vehicle

Insert new paragraphs 2.24. and 2.25., to read:

"2.24. "Type of vehicle", as regards the installation of safety glazing, means vehicles of one category 1/ which do not differ in at least the following essential respects:

The manufacturer

The manufacturer's type designation

Essential aspects of construction and design."

"2.25 "Seat Back Angle" means the design torso angle as defined in Annex 19 of this Regulation."

1/ As defined in annex 7 to the Consolidated Resolution to Construction of Vehicles (R.E.3) (TRANS/WP.29/78/Rev.1/Amend.2.

Paragraph 3.1., amend to read:

"3.1. Approval for a type of glazing

The application for approval of a type "

Insert new paragraphs 3.4. to 3.6., to read:

"3.4. Approval for a type of vehicle

The application for approval of a vehicle type with regard to the installation of its safety glazing shall be submitted by the vehicle manufacturer or by his duly accredited representative.

3.5. It shall be accompanied by the undermentioned documents in triplicate and the following particulars:

3.5.1. Drawings of the vehicle on an appropriate scale showing:

3.5.1.1. The position of the windscreen relative to the R point of the vehicle,

3.5.1.2. The inclination angle of the windscreen,

3.5.1.3. The inclination angle of the seat back;

3.5.2. Technical details concerning the windscreen and all other glazings, in particular:

3.5.2.1. The materials used,

3.5.2.2. Approval numbers,

3.5.2.3. Any additional markings, as described in paragraph 5.5.

3.6. A vehicle representative of the vehicle type to be approved shall be submitted to the technical service responsible for conducting the approval tests."

Paragraph 5.1., amend to read:

"5.1. Approval for a type of glazing

If the samples submitted "

Paragraph 5.5.2. Amend to read:

"5.5.2. V in the case of safety glazing having a regular light transmittance less than 70%."

Paragraph 5.5.5., amend to read:

"..... 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 panes with a light scatter not exceeding 2 per cent after 1000 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 panes 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.)

Paragraph 5.5.7., amend to read:

"..... plastic double glazed unit. In addition, the appropriate application will be signified by:

- /A for forward facing panels;
- /B for side, rear and roof glazings;
- /C 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 panes with a light scatter not exceeding 2 per cent after 1000 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 panes 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.)

Paragraph 5.6., amend to read:

"5.6. The approval mark and symbol shall be clearly legible and be indelible. Additional symbols must be combined within the approval marking.

Paragraph 5.7., amend to read:

"5.7 Annex 2A to this Regulation gives examples of arrangements of approval marks.

Insert new paragraphs 5.8. to 5.15., to read:

- "5.8. Approval for a type of vehicle
- If the vehicle submitted for approval pursuant to this Regulation meets the requirements of annex 21 to this Regulation, approval of that vehicle type shall be granted.
- 5.9. An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another vehicle type as defined in paragraph 2.24. above.
- 5.10. Notice of approval or of extension or refusal or withdrawal of approval or production definitely discontinued of a vehicle type pursuant to this Regulation shall be communicated to the Parties to the 1958 Agreement which apply this Regulation by means of a form conforming to the model in annex 1A to this Regulation.
- 5.11. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation an international approval mark consisting of:
- 5.11.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval 1/;
- 5.11.2. the number of this Regulation, followed by the letter R, a dash and the approval number to the right of the circle prescribed in paragraph 5.11.1.
- 5.12. If the vehicle conforms to a vehicle type approved, under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 5.11.1. need not be repeated; in such a case the additional numbers and symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 5.11.1.
- 5.13. The approval mark shall be clearly legible and be indelible.
- 5.14. [The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.]"
- 5.15. Annex 2B to this Regulation gives examples of arrangements of approval marks.

1/ Read footnote 1/ of para. 5.4.1.

Insert a new annex 1A, to read:

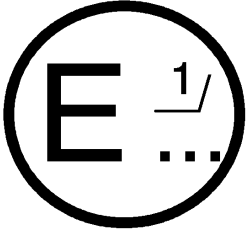
"Annex 1A

(maximum format: A4 (210 x 297 mm))

COMMUNICATION

Issued by: Name of administration:

.....
.....
.....



- APPROVAL GRANTED
- APPROVAL EXTENDED
- APPROVAL REFUSED
- APPROVAL WITHDRAWN
- PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to its safety glazing pursuant to Regulation No. 43.

Approval No Extension No.

1. Make (name of manufacturer) of vehicle:
2. Type, where appropriate, and trade description of vehicle.....
.....
3. Name and address of manufacturer:
4. Name and address of manufacturer's representative where applicable: ...
.....
5. Description of the type of glazing used:
 - 5.1. in the case of windscreens:
 - 5.2.1. in the case of front side windows:
 - 5.2.2. in the case of rear side windows:
 - 5.3. in the case of rear windows:
 - 5.4. in the case of opening roofs:
 - 5.5. in the case of glazing other than the above:
6. ECE component type approval mark for a windscreen:
7. ECE Component type approval mark(s) for:
 - 7.1.1. front side windows :
 - 7.1.2. rear side windows :
 - 7.2. rear windows:
 - 7.3. opening roofs:

- 7.4. other glazing:
- 8. The fitting requirements have/have not 2/ been met.
- 9. Vehicle submitted for approval on:
- 10. Technical service responsible for conducting approval tests:
- 11. Date of report issued by that service:
- 12. Number of report issued by that service:
- 13. Approval is granted/refused/extended/withdrawn 2/
- 14. Reason(s) for extension of approval:
- 15. Remarks:
- 16. Place
- 17. Date
- 18. Signature
- 19. The list of documents deposited with the Administration Service which has granted approval is annexed to the communication and may be obtained upon request.

1/ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

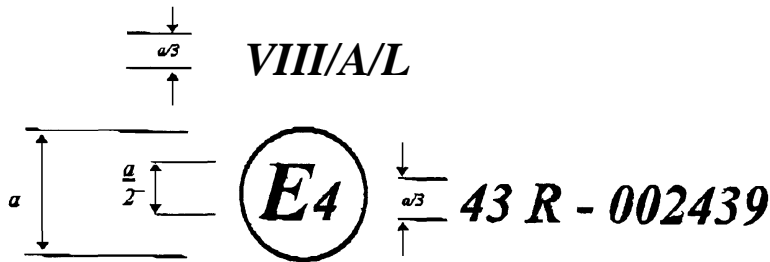
2/ Strike out what does not apply."

Annex 2, amend the title to read:

"Annex 2A

ARRANGEMENT OF APPROVAL MARKS FOR COMPONENTS
(see paragraph 5.5. of this Regulation)

Rigid plastic glazings other than windscreens amend to read:



a = 8 mm min.

The above approval mark affixed to a rigid plastic glazing pane for forward facing

panels with a light scatter not exceeding 2 per cent after 1000 cycles on the outer surface and 4 per cent after 100 cycles on the inner surface shows that the component concerned has been approved in the Netherlands (E 4) pursuant to Regulation No. 43 under approval No. 002439.

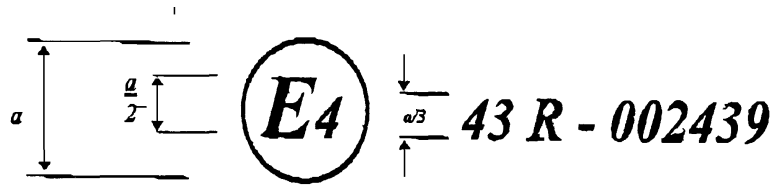
The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 43.

Insert a new annex 2B, to read:

"Annex 2B

ARRANGEMENT OF APPROVAL MARKS FOR VEHICLES

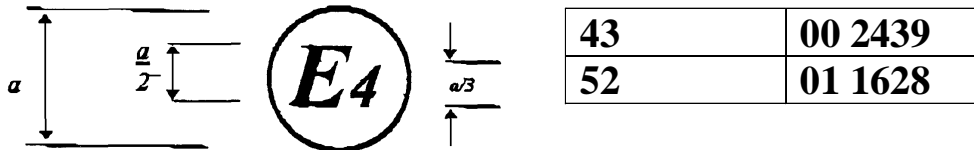
MODEL A (see paragraph 5.11. of this Regulation.)



a = 8 mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to installation of glazing, been approved in the Netherlands (E4) pursuant to Regulation No 43. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 43.

MODEL B (see paragraph 5.12. of this Regulation.)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E4) pursuant to Regulations Nos. 43 and 52 ^{3/}.

The approval numbers indicate that, at the date when the respective approvals were given, Regulation 43 was in its original form and Regulation 52 included the 01 series of amendments.

^{3/} The second number is given only as an example."

Annex 3,

Paragraph 9.1.4., amend to read:

"9.1.4. The regular light transmittance shall be measured according to paragraph 9.1.2. of this annex and the result shall be recorded. In the case of a windscreen, it shall not be less than 75 per cent. In the case of glazings other than windscreens, the requirements are specified in annex 21."
Paragraphs 9.1.4.1. and 9.1.4.2., should be deleted

Annexes 14 and 16,

Paragraphs 6.1.3. to 6.1.3.2., amend to read:

"6.1.3. Interpretation of test results.

6.1.3.1. In the case of glazing of class L, the abrasion test shall be considered to have given a satisfactory result if the total light scatter after abrasion does not exceed 2 per cent after 1000 cycles on the outer surface of the test sample and 4 per cent after 100 cycles on the inner surface of the test sample.

6.1.3.2. In the case of glazing of class M, the abrasion test shall be considered to have given a satisfactory result if the total light scatter after abrasion does not exceed 10 per cent after 500 cycles on the outer surface of the test sample and 4 per cent after 100 cycles on the inner surface of the test sample."

Insert a new paragraph 6.1.3.3., to read:

"6.1.3.3. For sun roofs, no abrasion test is required."

Insert a new annex 21, to read:

"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 O 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 1/;
- 2.3. "Special purpose vehicle", "motor caravan", "armoured vehicle", "ambulance", "hearse", "convertible", are respectively defined in annex 7 to the Consolidated Resolution on the Construction Of Vehicles 1/.
- 2.4. "Double-deck vehicle", is defined in paragraph 2.1.2. of Regulation No. 107.

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 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.

4. SPECIFIC PROVISIONS APPLICABLE TO VEHICLES OF THE CATEGORIES M AND N 1/

4.1. Windscreens

- 4.1.1. The regular light transmittance shall not be less than 75 per cent;
- 4.1.2. The windscreen must be type approved for the vehicle type for which it is intended to be fitted.
- 4.1.3. The windscreen must be correctly fitted with reference to the vehicle driver's 'R' point.

Insert a new paragraph 4.1.4., to read:

- [4.1.4. [Vehicles having a maximum design speed greater than 40 km/h may not be fitted with a toughened windscreen.]]

1/ As defined in annex 7 to the Consolidated Resolution to Construction of Vehicles (R.E.3) (TRANS/WP.29/78/Rev.1/Amend.2).

- 4.2. 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 2.18.1. of this Regulation, is obtained, must have a regular light transmittance of at least 70 per cent.
- 4.2.1.2. Plastic safety glazing shall bear an additional symbol A/L or B/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 2.18.2. of this Regulation must 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%, 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 B/L, 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. and 2.18.2. 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 shall bear one of the additional symbols 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 with the additional symbols C/L or C/M are not allowed at locations where there is a risk of head impact.
- 4.2.3.3. In the case of plastic safety glazings, the provisions related to abrasion resistance as defined in paragraph 4.2.2.2. 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 must 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]"