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Working Party on General Safety Provisions (GRSG)
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agenda item 6.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 43

(Safety glazing)

Transmitted by the expert from the Liaison Committee
for the Manufacture of Automobile Equipment and Spare Parts (CLEPA)

Note: The text reproduced below was prepared by the expert from CLEPA in order to align the technical requirements of Regulation No. 43 with those of the proposal for a global technical regulation for safety glazing (TRANS/WP.29/GRSG/1999/29).

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

GE.99-23946

A. PROPOSAL

The List of Contents

Annexes, amend to read:

“.....
Annex 9 - Safety-glass panes faced with plastic material (on the inner face)
.....”

The text of the Regulation

Insert new paragraphs 2.19. to 2.21., to read:

- “2.19. “Shadeband” means an area outside the requisite vision area that has had the luminous transmittance reduced by methods such as interlayer tinting or ceramic frit application in order to reduce glare;
- 2.20. “Obscuration Band” means an opaque ceramic frit section around the periphery of the glazing to protect the attaching adhesive from UV degradation and to mask that adhesive and underlying body components;
- 2.21. “Interlayer” means a plastic material used to hold together the layers of a laminate.”

Paragraph 6.1., amend to read:

“6.1. All glazing materials shall be such that ”

Paragraph 8.1.1.1., amend to read:

8.1.1.1. to assess the liability of fragments of safety glazing to cause injury in the event of fracture”

Paragraph 8.1.2.2., amend to read:

“8.1.2.2. Headform Test

The purpose of this test is to verify the compliance of safety glazing with the requirements”

Paragraph 8.1.3.2., amend to read:

“8.1.3.2. Test of resistance to high temperature

The purpose of this test is to determine whether the safety glazing material will withstand exposure to high temperatures over an extended period of time without its appearance becoming substantially altered.”

Paragraph 8.1.4.4., should be deleted.

Paragraph 8.2.1.1., the table, delete the line “Identification of colours”.

Paragraph 8.2.1.2., the table, the line reading "Weathering", amend to read:

Weathering	A14/6.2	A14/6.2	A16/6.2	A16/6.2	A15/5.1
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Annex 3,

Paragraph 1.3., amend to read:

"1.3. The test shall be carried out at the prescribed point of impact within 3 minutes after breaking."

Paragraph 1.4., should be deleted.

Paragraph 2.1.3., amend to read:

"the safety glazing and the support.

If finished products are used, they may be supported on a rigid support fixture, corresponding to the shape of the finished products, constructed to support the part in a position so that the 227 g hardened-steel ball will impact the external surface of the finished products. The support fixture shall have a peripheral support ledge about 15 mm wide covered with rubber of hardness 50 IRHD about 3 mm thick and shall rest on a sheet of the same material. The point of impact shall be the geometric centre \pm 50 mm of the finished products."

Paragraph 3.2.1., after the table, insert a remark (with the reference to a new footnote number 2/) and the corresponding footnote 2/, to read:

"Other headforms giving an equivalent result may be used 2/

2/ The headform defined in US40 CFR Part 572"

Paragraph 4.4.2., amend to read:

"4.4.2. Condition the test pieces for a minimum of 48 hours at $23 \pm 5^{\circ}\text{C}$ and 50 ± 20 per cent relative humidity."

Paragraph 6.3.1.1.1., amend to read:

"6.3.1.1.1. Below 70 per cent in the case of vehicle glazing which are required "

Paragraph 6.3.1.1.2., should be deleted.

Paragraph 6.3.2., amend to read:

"6.3.2. A set of test pieces or samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraph 6.3.2.1., should be deleted.

Paragraph 6.3.2.2., should be deleted.

Paragraph 6.4.1.2., amend to read:

"..... by the number required by the text methods."

Paragraph 6.4.1.5., amend to read:

".....

The luminous transmittance measured must not differ from the original tests on unexposed samples by more than 5 per cent and shall not fall below 70 per cent for vehicle glazing which is located in a position requisite for driver visibility."

Paragraph 7.1., amend to read:

"7.1. Procedure

Keep three samples, three finished parts, or three square test pieces of at least "

Paragraph 7.3.2., amend to read:

"7.3.2. A set of test pieces or samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 7.3.2.1. and 7.3.2.2., should be deleted.

Paragraph 9.1.4.1., amend to read:

"9.1.4.1. The regular transmittance measured according to paragraph 9.1.2. on three samples or test pieces shall not be less than 70 per cent for all places essential for driver vision."

Paragraph 9.1.4.2., amend to read:

"the regular light transmission of the safety glazing measured on three samples or test pieces may be less than 70 per cent. Safety glazing with a regular light transmittance ... "

Paragraph 9.4., should be deleted..

Paragraph 10.5.2., amend to read :

"10.5.2. Sampling

Five samples shall be taken from the material under test. In materials having "

Paragraph 10.9.1., amend to read :

"10.9.1. The safety glazing shall be considered satisfactory from the point of view of the fire-resistance test if the rate of burning does not exceed 90 mm/min."

Paragraph 10.9.2., should be deleted.

Paragraph 11.4.2., amend to read:

"11.4.2. A set of test pieces shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 11.4.2.1. and 11.4.2.2., should be deleted.

Annex 4,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 2.2., amend to read:

"2.2. Number of samples
Six samples shall be tested."

Paragraph 3.2.1., amend to read:

"3.2.1. Four windscreens shall be tested."

Paragraph 3.2.2., should be deleted.

Paragraph 3.4.1., amend to read:

"3.4.1. A test shall be deemed to have given a satisfactory result if the windscreen is fractured."

Paragraph 3.4.2., amend to read:

"3.4.2. A set of samples shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 3.4.2.1. and 3.4.2.2., should be deleted.

Annex 5,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 1.1.3., should be deleted.

Paragraphs 2.2.1. to 2.5.2., amend to read:

"2.2.1. Four samples shall be tested.

2.3. Test method

2.3.1. The method used shall be that described in annex 3, paragraph 1.

2.4. Point of impact

2.4.1. The sample will be broken at its geometric centre (see annex 17).

2.5. Interpretation of results

2.5.1. A test shall be deemed to have given a satisfactory result if fragmentation satisfies the following conditions:

2.5.1.1. The number of fragments in any 5 cm x 5 cm square is not less than 40.

2.5.1.2. For the purposes of the above rule, a fragment extending across a side of a square shall count as half a fragment.

2.5.1.3. Fragmentation shall not be checked in a strip 2 cm wide round the edge of the samples, this strip representing the frame of the glass; nor within a radius of 7.5 cm from the point of impact.

When a fragment extends beyond the excluded area only the part of the fragment falling outside of the area shall be assessed.

2.5.1.4. The weight of the largest crack free fragment shall not exceed the limits specified below except in the areas defined in paragraph 2.5.1.3. above.

Thickness Category	Weight of the Largest Crack Free Fragment
Categories I and II	≤ 3.0 g
Categories III and IV	≤ 4.3 g

2.5.1.5. No fragment longer than 10 cm in length shall be allowed except in the areas defined in paragraph 2.5.1.3. above.

2.5.2. A set of samples shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 2.6. to 2.6.3., should be deleted

Paragraph 3.1.3.2., amend to read:

"3.1.3.2. The height of drop (from the underface of the ball to the upper surface of the test piece) shall be: 2.0 m + 5/- 0 mm."

Paragraph 3.1.4.2., amend to read:

"3.1.4.2. A set of test pieces shall be considered acceptable if at least five of the six tests give a satisfactory result."

Annex 6,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 3.2.1., amend to read:

"3.2.1. Number of samples
Four windscreens shall be tested."

Paragraph 3.2.3.2., amend to read:

"3.2.3.2. A set of samples shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 3.2.3.2.1. and 3.2.3.2.2., should be deleted.

Paragraph 4.2.3.2., amend to read:

"4.2.3.2. A set of test pieces shall be considered acceptable if five of the six tests carried out give a satisfactory result."

Paragraphs 4.2.3.2.1. and 4.2.3.2.2., should be deleted.

Paragraph 4.3.3.2., the table, amend the columns "Height of fall" to read:

"9 m at +40°C for all thicknesses
8.5 m at -20°C for all thicknesses"

Paragraph 4.3.4.2., amend to read:

"4.3.4.2. A set of test pieces shall be considered acceptable if at least eight of the ten tests at each test temperature give a satisfactory result."

Paragraphs 4.3.4.2.1. and 4.3.4.2.2., should be deleted.

Paragraph 5.3.1., should be deleted

Annex 7,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 3.4.2., amend to read:

"3.4.2. A set of test pieces shall be considered acceptable if at least five of the six tests give a satisfactory result."

Paragraphs 3.4.2.1. and 3.4.2.2., should be deleted.

Paragraph 4.2., amend to read:

"4.2. Number of test pieces

Four flat square test pieces of 300 mm x 300 mm (+10/-0 mm) side or four finished products shall be subjected to testing."

Paragraph 4.4.2., amend to read:

"4.4.2. A set of test pieces or finished products shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 4.4.2.1. and 4.4.2.2., should be deleted.

Paragraph 5.1.2., amend to read:

"5.1.2. Interpretation of results

The safety glazing material shall be considered acceptable if the light scatter as a result of abrasion on three test pieces does not exceed 2 per cent."

Paragraph 6., amend to read:

" located at places requisite for driver visibility."

Annex 8,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 4.2., amend to read:

"4.2. Number of test pieces or samples

Four test pieces measuring"

Paragraph 4.4., amend to read:

"4.4. Impact point

The test piece or sample shall be broken on the outer treated sheet at its geometric centre."

Paragraph 4.5.1., amend to read:

"4.5.1. The fragmentation test shall be considered to have given "

Paragraph 4.5.2., amend to read:

"4.5.2. The set of test pieces or samples shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 4.5.2.1. and 4.5.2.2., should be deleted.

Annex 9, the title, amend to read:

"Annex 9

SAFETY-GLASS PANES FACED WITH PLASTIC MATERIAL
(on the inner face)"

Annex 10,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 3.2.3.2., amend to read:

"3.2.3.2. A set of samples shall be considered acceptable if at least three of the four tests give a satisfactory result."

Paragraphs 3.2.3.2.1. and 3.2.3.2.2., should be deleted.

Paragraph 3.3.3.2., amend to read:

"3.3.3.2. A set of test pieces shall be considered acceptable if at least five of the six tests give a satisfactory result."

Paragraphs 3.3.3.2.1. and 3.3.3.2.2., should be deleted.

Annex 11,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 3.4.2., amend to read:

"3.4.2. A set of test pieces shall be considered acceptable if at least five of the six tests give a satisfactory result."

Paragraphs 3.4.2.1. and 3.4.2.2., should be deleted.

Paragraph 4.2., amend to read:

"4.2. However the third requirement set out in paragraph 4.4.1. of annex 7 "

Annex 12,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 3.4.4., amend to read:

"3.4.4. A set of test pieces shall be considered acceptable if at least five of the six tests give a satisfactory result."

Paragraphs 3.4.4.1. and 3.4.4.2., should be deleted.

Annex 14,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 4.3.2., amend to read:

"4.3.2. For panes like partitions, separating and side windows (classification VIII/A) the drop height shall be "

Paragraph 4.3.3., should be deleted.

Paragraph 4.3.4., amend to read:

" ... for all windows in trailers (classification VIII/B) there will be no ... "

Paragraph 4.4.3., amend to read:

"4.4.3. A set of test pieces or samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 4.4.3.1. and 4.4.3.2., should be deleted.

Paragraph 5.4.2., amend to read:

"5.4.2. A set of test pieces shall be considered acceptable if at least eight of the ten tests give a satisfactory result."

Paragraphs 5.4.2.1. and 5.4.2.2., should be deleted.

Paragraph 5.5., amend to read:

"5.5. 227 g ball test at -20°C ± 2°C"

Paragraph 5.5.2., amend the value of "-18°C" to read "-20°C".

Paragraph 6.1.3.2., add at the end:

"
No abrasion testing is required for rigid plastic double glazing for trailers and motor caravans with a gross vehicle mass greater than 2500 kg."

Paragraph 6.1.4., amend to read:

"6.1.4. A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraph 6.2.1., amend to read:

" ...with the long arc Xenon lamp shall be 500 MJ/m². During a cycle of "

Paragraph 6.2.4., amend to read:

"6.2.4. A set of test pieces shall be considered acceptable if all the tests give a satisfactory result.

Paragraphs 6.2.4.1. and 6.2.4.2., should be deleted.

Paragraph 6.3.3.1., amend to read:

"6.3.3.1. The cross-cut test shall be considered to have given a satisfactory result if the cross-cut value Gt 1 is met."

Paragraphs 6.3.3.1.1. to 6.3.3.2.2., should be deleted.

Paragraph 7.1., amend to read:

"7.1. Interpretation of results

A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 7.1.1. and 7.1.2., should be deleted.

Paragraphs 8.2. and 8.2.1., amend to read:

"8.2. Interpretation of results

The fire-resistance test shall be considered to have given a satisfactory result if the burning rate is less than 90 mm/min.

8.2.1. A set of test pieces shall be considered acceptable if at least four of the five tests give a satisfactory result."

Paragraphs 8.2.1.1. and 8.2.1.2., should be deleted.

Paragraph 9.2., amend to read

"9.2. Interpretation of results

A set of test pieces shall be considered acceptable if all tests give a satisfactory result"

Paragraphs 9.2.1. and 9.2.2., should be deleted.

Annex 15,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 4.2.3.2., amend to read:

"4.2.3.2. A set of test pieces shall be considered acceptable if at least eight of the ten tests give a satisfactory result."

Paragraphs 4.2.3.2.1. and 4.2.3.2.2., should be deleted.

Paragraph 4.3., amend to read:

"4.3. 227 g ball test at -20°C ± 2°C"

Paragraph 4.3.2., amend the value of "-18°C" to read "-20°C".

Paragraph 5.1.1., amend to read:

" ... with the long arc Xenon lamp shall be 500 MJ/m². During a cycle of ... "

Paragraph 5.1.4., amend to read:

"5.1.4. A set of test pieces shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 5.1.4.1. and 5.1.4.2., should be deleted.

Paragraph 6.1., amend to read:

"6.1. Interpretation of results

A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 6.1.1. and 6.1.2., should be deleted.

Paragraph 7.2., amend the value of "110 mm/min" to read "90 mm/min":

Paragraph 7.2.1., amend to read:

"7.2.1. A set of test pieces shall be considered acceptable if at least four of the five tests give a satisfactory result."

Paragraph 7.2.1.1. and 7.2.1.2., should be deleted.

Paragraph 8.2., amend to read:

"8.2. Interpretation of results

A set of test pieces shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 8.2.1. and 8.2.2., should be deleted.

Annex 16,

Paragraph 1.1.1., amend to read:

"1.1.1. The manufacturer's trade name or marks;"

Paragraph 4.3.2., amend to read:

"4.3.2. For panes like partitions, separating and side windows (classification VIII/A) the "

Paragraph 4.3.3., should be deleted.

Paragraph 4.3.4., amend to read:

"4.3.4. For panes which do not have contact possibilities as well as for small windows in vehicles and for all windows in trailers (classification VIII/B) there will be no headform testing. A small window is "

Paragraph 4.4.3., amend to read:

"4.4.3. A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 4.4.3.1. and 4.4.3.2., should be deleted.

Paragraph 5.4.2., amend to read:

"5.4.2. A set of test pieces shall be considered acceptable if at least eight of the ten tests give a satisfactory result."

Paragraphs 5.4.2.1. and 5.4.2.2., should be deleted.

Paragraph 5.5., amend to read:

"5.5. 227 g ball test at -20°C ± 2°C"

Paragraph 5.5.2., amend the value of "-18°C" to read "-20°C" :

Paragraph 6.1.3.2., add at the end:

"

No abrasion testing is required for rigid plastic double glazing for trailers and motor caravans with a gross vehicle mass greater than 2500 kg."

Paragraph 6.1.3.3., should be deleted.

Paragraph 6.1.4., amend to read:

"6.1.4. A set of test pieces shall be considered acceptable if all the tests give a satisfactory result."

Paragraph 6.2.1., amend to read:

" ... with the long arc Xenon lamp shall be 500 MJ/m². During irradiation "

Paragraph 6.2.4., amend to read:

"6.2.4. A set of test pieces shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 6.2.4.1. and 6.2.4.2., should be deleted.

Paragraph 6.3.3.1., amend to read:

"6.3.3.1. The cross-cut test shall be considered to have given a satisfactory result if the cross-cut value Gt 1 is met."

Paragraphs 6.3.3.2. to 6.3.3.2.2., should be deleted.

Paragraph 7.1., amend to read:

"7.1. Interpretation of results

A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 7.1.1. and 7.1.2., should be deleted.

Paragraph 8.2., amend the value of "110 mm/min" to read "90 mm/min"

Paragraph 8.2.1., amend to read:

"8.2.1. A set of test pieces shall be considered acceptable if at least four of the five tests give a satisfactory result."

Paragraphs 8.2.1.1. and 8.2.1.2., should be deleted.

Paragraph 9.2., amend to read:

"9.2. Interpretation of results

A set of samples shall be considered acceptable if all the tests give a satisfactory result."

Paragraphs 9.2.1. and 9.2.2., should be deleted.

Annex 17, Figures 3(a), 3(b) and 3(c), amend to read:

(figures to be taken from the draft for a global technical regulation document TRANS/WP.29/GRSG/1999/29, annex 16, figures 3a, 3b and 3c)

* * *

B. Justification

The rationale for the changes is identical to that given in the justification for the "draft proposal for a global technical regulation on safety glazing" (TRANS/WP.29/GRSG/1999/29).
