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Report of the Working Party on General Safety Provisions on its 111th session (11-14 October 2016)

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I. Attendance

1. The Working Party on General Safety Provisions (GRSG) held its 111th session from 11 to 14 October 2016 in Geneva. The meeting was chaired by Mr. A. Erario (Italy). Experts from the following countries participated in the work, following Rule 1(a) of the Rules of Procedure of the World Forum for Harmonization of Vehicle Regulations (WP.29) (TRANS/WP.29/690, ECE/TRANS/WP.29/690/Amend.1 and Amend.2): Belgium, Canada, China, Czechia, Finland, France, Germany, Hungary, India, Italy, Japan, Kuwait, Luxembourg, Netherlands, Norway, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Serbia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland (United Kingdom) and United States of America. An expert from the European Commission (EC) also participated. Experts from the following non-governmental organizations participated: International Telecommunication Union (ITU), European Association of Automotive Suppliers (CLEPA), European Liquefied Petroleum Gas Association (AEGPL), International Motorcycle Manufacturers Association (IMMA), International Road Transport Union (IRU), International Organization of Motor Vehicle Manufacturers (OICA), International Organization for Standardization (ISO), International Association for Natural Gas Vehicles (NGV Global) and the International Association of Public Transport (UITP). Upon the special invitation of the Chair, experts from the Foundation of Korea Automotive Parts Industry Promotion, International Association of the Body and Trailer Building Industry (CLCCR) and Vehicle Safety Certification Centre of the Taiwan Province of China participated.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRSG/2016/14 and Add.1
Informal document GRSG-111-01

2. GRSG considered and adopted the agenda proposed for the 111th session (ECE/TRANS/WP.29/GRSG/2016/14 and Add.1).

3. GRSG also adopted the running order for the session as proposed by the Chair in GRSG-111-01. GRSG noted the main decisions and recommendations of the World Forum WP.29 taken during its June 2016 session, in particular, the invitation to check the suitability of UN Regulations under the responsibility of GRSG to deal with complex electronic systems, and software and to focus on the responsibilities of the approval applicant, the technical service and the Type Approval Authorities, the precision of the requirements and to identify, if needed, provisions that could provide clarification to avoid ambiguity (see report ECE/TRANS/WP.29/1123, para. 97).

4. The informal documents distributed during the session are listed in Annex I to this report. The GRSG informal working groups are listed in Annex IV.

III. Regulation No. 107 (M₂ and M₃ vehicles) (agenda item 2)

Documentation: ECE/TRANS/WP.29/GRSG/2016/5
ECE/TRANS/WP.29/GRSG/2016/20 and Corr.1
Informal documents GRSG-111-08, GRSG-111-09, GRSG-111-16,
GRSG-111-21, GRSG-111-28, GRSG-111-35 and GRSG-111-36

5. The expert from Belgium recalled the discussion at the previous GRSG session on ECE/TRANS/WP.29/GRSG/2016/5 and presented a detailed analysis on the compatibility

or incompatibility of the scopes and technical provisions for trolleybuses of UN Regulations Nos. 100 and 107 (GRSG-111-21). As an outcome of this analysis, she recommended to fully align the provisions of the UN Regulations concerned. She added that the removal of the safety prescriptions for trolleybuses from UN Regulation No. 107 and their presence in UN Regulation No. 100 on electric power trained vehicles would avoid a double type approval process. She announced her intention to also submit the outcome of the analysis to the experts of the Working Party on Passive Safety (GRSP). GRSG welcomed the important work done by the Belgium delegation.

6. The expert from France preferred to keep the provisions for trolleybuses in UN Regulation No. 107. He added that a double type approval was only necessary for hybrid vehicles and that the provisions for trolleybuses in UN Regulation No. 107 were still necessary for trolleybuses with conventional propulsion systems. The expert from Switzerland endorsed that position. The expert from the Russian Federation raised a study reservation. The expert from OICA underlined the need to align the provisions for trolleybuses in UN Regulations (e.g. 'isolation' to be replaced by 'insulation').

7. Referring to the discussion of WP.29 at its June 2016 session (report ECE/TRANS/WP.29/1123, para. 30), GRSG agreed to also involve the experts from the Working Party on Lighting and Light-Signalling (GRE) and GRSP at their forthcoming sessions. GRSG agreed to take a final decision on this subject at its next session in April 2017 awaiting the outcome of the discussion in GRE and GRSP. For that purpose, the secretariat was invited to keep GRSG-111-21 on the agenda as a reference document.

8. The expert from Germany proposed amendments to UN Regulation No. 107 to improve the accommodation and accessibility for passengers with reduced mobility (ECE/TRANS/WP.29/GRSG/2016/20 and Corr.1) including new testing provisions to ensure visual contrast of some safety elements and the installation of loudspeakers. The expert from Japan introduced GRSG-111-28 on the efforts in his country to set up legal conditions for barrier-free public transport systems. He presented GRSG-111-36 which outlines the specifications for non-step buses. The expert from UITP welcomed all these efforts, but reminded GRSG of the necessity to avoid design restrictions and to limit such provisions only for certain vehicles of category M₃. The expert from the United Kingdom endorsed the position. A number of experts were of the opinion that all aspects linked to the environment and health (such as hygienic conditions, colour specifications, visibility and contrast issues) should be regulated on a national/regional level. The expert from Belgium preferred to insert such provisions, if necessary, as only optional requirements.

9. GRSG noted the observations by IRU that the new amendments proposed by Germany might create an additional burden on road transport operators without increasing road safety (GRSG-111-16). The experts from CLCCR and OICA shared these concerns. The Chair invited all experts to send their written comments to the expert from Germany. GRSG agreed to resume consideration, at its next session in April 2017, of ECE/TRANS/WP.29/GRSG/2016/20 as reflected in GRSG-111-35 on the basis of a revised document to be submitted by Germany.

10. The expert from OICA introduced GRSG-111-08 which corrects the references of some paragraphs in the Regulation. GRSG adopted the amendments as reproduced below and requested the secretariat requested to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Corrigenda to the 06 and 07 series of amendments to UN Regulation No. 107.

*Annex 3, paragraph 7.7.9.1., correct the reference to paragraph 7.6.11.4. to read **7.6.11.8.***

*Annex 8, paragraphs 3.7.3., 3.7.4. and 3.8.4.1.6., correct the references to paragraph 7.6.11.4. to read **7.6.11.8.***

11. The expert from OICA presented GRSG-111-09 aligning the provisions of UN Regulation No. 107 with those of the European Union Regulation 1230/2012 on masses and dimensions in the definition of the 'mass in running order'. The expert from France suggested also amending Annex 11. GRSG welcomed the proposal and agreed to resume consideration of this subject at its next session in April 2017 on the basis of a revised proposal to be submitted by OICA.

IV. Regulation No. 39 (Speedometer and odometer) (agenda item 3)

Documentation: ECE/TRANS/WP.29/GRSG/2015/16 and Corr.1
ECE/TRANS/WP.29/GRSG/2016/25
Informal documents GRSG-109-13 and GRSG-111-10

12. The expert from EC introduced ECE/TRANS/WP.29/GRSG/2016/25 proposing to adapt the requirements of the Regulation to technical progress and to clarify the specifications for numeric displays of speedometers. The expert from OICA introduced GRSG-111-10 aimed at correcting a reference in footnote ² to paragraph 2.5. of the Regulation.

13. GRSG adopted ECE/TRANS/WP.29/GRSG/2016/25 as amended below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Supplement 1 to the 01 series of amendments to UN Regulation No. 39.

Paragraph 2.5., footnote ², correct the reference to paragraph 5.3. to read **5.4.**

14. Recalling the purpose of ECE/TRANS/WP.29/GRSG/2015/16, the Chair suggested resuming consideration of this subject at a subsequent session of GRSG on the basis of a new document, if available.

V. Regulation No. 43 (Safety glazing) (agenda item 4)

Documentation: ECE/TRANS/WP.29/GRSG/2015/22
ECE/TRANS/WP.29/GRSG/2016/21
Informal documents GRSG-111-05, GRSG-111-11 and GRSG-111-12

15. The expert from Hungary presented ECE/TRANS/WP.29/GRSG/2015/22 on clarifying the technical requirements of the abrasion test machine. The expert from Poland suggested replacing figure 4 in Annex 3 with a diagram including dimensions (GRSG-111-05). The expert from Germany informed GRSG that the corresponding ISO standard would be published soon. He offered to update the document to fully align the provisions of the Regulation with those of the ISO standard. GRSG welcomed that offer and agreed to defer the adoption of the amendments to UN Regulation No. 43 to its next session in April 2017 awaiting the submission of a revised official document by Germany.

16. The expert from Germany introduced ECE/TRANS/WP.29/GRSG/2016/21 adapting the requirements for plastic panes, other than windscreens, to those for plastic pane windscreens including amendments to rigid plastic panes, flexible plastic panes and rigid plastic multiple-glazed units. The expert from OICA presented GRSG-111-11, improving the proposed text. GRSG supported the proposal in general, but agreed on the need to review the definition of different types of glazing, especially its classification according to principal and secondary characteristics. The expert from CLEPA proposed to amend figure

2a of Annex 18 to clarify the lateral limits of the area with any opaque obscuration. GRSG noted a number of concerns and agreed to avoid a further reduction of this area.

17. Following the discussion, GRSG adopted ECE/TRANS/WP.29/GRSG/2016/21 as reproduced in Annex II to this report. The secretariat was requested to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Supplement 5 to the 01 series of amendments to UN Regulation No. 43.

18. GRSG endorsed the Chair's proposal to set up a task force to work on a concrete proposal aligning the French and English version of the Regulation and clarifying the definition of types and the area with any opaque obscuration. Thus, GRSG agreed to resume consideration of this subject at its next session in April 2017.

VI. Regulation No. 46 (Devices for indirect vision) (agenda item 5)

Documentation: Informal documents GRSG-110-12, GRSG-111-22, GRSG-111-23, GRSG-111-27 and GRSG-111-29

19. On behalf of the Task Force on UN Regulation No. 46, the expert from Japan reported on the progress made by the group during its meeting in Paris on 26-27 September 2016 (GRSG-111-22). He introduced GRSG-111-23 (superseding GRSG-110-12) proposing amendments to UN Regulation No. 46. GRSG welcomed the important work done by the Task Force led by Japan. To broaden the participation of other Contracting Parties in the discussions on this subject, GRSG agreed to set up a new Informal Working Group (IWG) on close proximity vision and obstacle detection systems. GRSG noted a first draft of the terms of reference and rules of procedure for the IWG (GRSG-111-29) and agreed to formally adopt them at its next session.

20. The GRSG Chair announced his intention to seek the consent of WP.29 at its November 2016 session to establish the above-mentioned IWG. GRSG referred GRSG-111-23 and GRSG-111-29 to the IWG for further consideration and invited the Group to take into account all relevant studies published world-wide on this subject.

21. The expert from Germany proposed to correct the provisions of paragraph 16.1.3.1. on the magnification factor (GRSG-111-27). GRSG supported the proposal in principle and agreed to resume consideration of this subject at its next session in April 2017. For that purpose, the secretariat was requested to circulate GRSG-111-27 with an official symbol.

VII. Regulation No. 66 (Strength of superstructure (buses)) (agenda item 6)

Documentation: ECE/TRANS/WP.29/GRSG/2016/11
Informal document GRSG-110-16

22. The expert from OICA recalled ECE/TRANS/WP.29/GRSG/2016/11 and GRSG-110-16 which propose to amend the provisions of UN Regulation No. 66 with respect to intrusion into residual space during the roll over test.

23. GRSG noted a number of comments on the draft amendments and agreed on the need to reconsider the definition of "residual space". The GRSG Chair recommended having a final review of an updated text at the next GRSG session. He invited the experts from France, the United Kingdom and OICA to work on a joint proposal.

VIII. Regulation No. 67 (LPG vehicles) (agenda item 7)

Documentation: ECE/TRANS/WP.29/GRSG/2016/7
ECE/TRANS/WP.29/GRSG/2016/15
Informal documents GRSG-111-17 and GRSG-111-19-Rev.1

24. The expert from the Netherlands presented GRSG-111-19 superseding ECE/TRANS/WP.29/GRSG/2016/7 and amending the provisions of UN Regulation No. 67 on LPG vehicles to allow Class 0/I hoses with couplings using gas tubes other than seamless material. The document received a number of comments. GRSG noted study reservations by the experts from Germany and AEGPL. GRSG reviewed the proposal as reflected in GRSG-111-19-Rev.1 and agreed to resume consideration of this subject at its next session in April 2017. The secretariat was requested to circulate GRSG-111-19-Rev.1 with an official symbol.

25. The expert from AEGPL introduced ECE/TRANS/WP.29/GRSG/2016/15 which proposes to insert new safety provisions into UN Regulation No. 67 on Liquefied Petroleum Gas (LPG) systems having hydraulic interconnections with the petrol or diesel fuelling system through which inter-flows of fuels might occur. The expert from Germany objected to the adoption of the proposal as safety risks (overflow of tank) still remain, particularly, since a small amount of flow of petrol into the LPG tank was still possible. The expert from the United Kingdom underlined the need to cross-check all references of paragraphs in the proposal. GRSG agreed to have a final review of the proposal at its next session in April 2017 on the basis of a revised document to be submitted by AEGPL.

26. The expert from Poland presented GRSG-111-17 clarifying the provisions for the type approval of accessories fitted to the container. The proposal received general support and a number of comments. Following a study reservation by the experts from Germany and CLEPA, GRSG decided to resume consideration of the proposal at its next session in April 2017 on the basis of a revised document by Poland. In this respect, the Chair invited all experts to send their written comments to the expert from Poland.

IX. Regulation No. 73 (Lateral protection devices) (agenda item 8)

Documentation: ECE/TRANS/WP.29/GRSG/2016/2
ECE/TRANS/WP.29/GRSG/2016/18
Informal document GRSG-110-20-Rev.1

27. The expert from CLCCR introduced ECE/TRANS/WP.29/GRSG/2016/18 amending the scope of the Regulation to ensure that as many vehicles as possible were fitted with a lateral protection device and preferred to insert derogations for some niche products (GRSG-110-20-Rev.1). The expert from the United Kingdom raised concerns and preferred to keep the amendments as proposed in ECE/TRANS/WP.29/GRSG/2016/2 which allows Contracting Parties to object or accept such lateral protection devices. GRSG noted a number of comments on and general support for ECE/TRANS/WP.29/GRSG/2016/18.

28. Finally, GRSG adopted ECE/TRANS/WP.29/GRSG/2016/18 and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Supplement 1 to the 01 series of amendments to UN Regulation No. 73.

X. Regulation No. 110 (CNG and LNG vehicles) (agenda item 9)

Documentation: ECE/TRANS/WP.29/GRSG/2016/6
ECE/TRANS/WP.29/GRSG/2016/16
ECE/TRANS/WP.29/GRSG/2016/22
Informal documents GRSG-111-02-Rev.1, GRSG-111-03,
GRSG-111-18, GRSG-111-20, GRSG-111-25 and GRSG-111-31

29. The expert from France proposed incorporating new provisions concerning refrigeration systems for cooling the cargo compartment which are connected to the compressed natural gas (CNG) and/or liquefied natural gas (LNG) system (ECE/TRANS/WP.29/GRSG/2016/16). The expert from Japan raised concerns about risks of increased filling cycles of CNG cylinders due to a higher filling frequency. He suggested supplementing the proposed provisions with additional test conditions to not exceed the maximum number of filling cycles of CNG cylinders (GRSG-111-18). A number of experts were of the opinion that the number of filling cycles of CNG cylinders specified in the test requirements of UN Regulation No. 110 would be sufficient to cover the higher filling frequencies. GRSG did not support the additional test conditions proposed by Japan.

30. GRSG adopted ECE/TRANS/WP.29/GRSG/2016/16 as amended below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Supplement 6 to the 01 series of amendments to UN Regulation No. 110.

Paragraph 18.1.7.1., replace "compartment des marchandises" by "compartment **de chargement**".

Paragraph 18.5.1.3., *subparagraphs (b) and (c)*, replace "compartment des marchandises" by "compartment **de chargement**" and "contrôle électronique" by "contrôle électronique **GNC/GNL**" (two times).

31. At its previous session, GRSG had discussed the need to update the reference to the ISO standard in paragraph 2.2. of Annex 4J. The expert from the Netherlands volunteered to submit a concrete proposal for amendments for consideration at the next GRSG session.

32. The expert from ISO presented an overview of the activities of his organization on specific aspects for gaseous fuels (GRSG-111-25). He introduced GRSG-111-02 with the rationale of all amendments proposed to UN Regulation No. 110 in document ECE/TRANS/WP.29/GRSG/2016/22 superseding ECE/TRANS/WP.29/GRSG/2016/6. GRSG welcomed GRSG-111-03 listing the copies of all ISO standards referenced to in UN Regulation No. 110 on CNG/LNG vehicles. A number of experts raised a concern on the dynamic referencing of international standards and expressed their preference for a static referencing, mainly for legal purposes. GRSG reviewed the document and agreed on the need to adopt the proposal as a new 03 series of amendments and to insert transitional provisions triggered of the 1 September. The expert from France asked for more detailed information on each of the proposed amendments, especially on the level of stringency and their impact on technical services. The expert from CLEPA underlined the need to also insert transitional provisions for existing type approvals and sufficient lead time for suppliers to upgrade them.

33. Following study reservations by the experts from Germany, France and CLEPA, GRSG decided to resume consideration of the proposal at its next session in April 2017 based on a revised document to be submitted by ISO. The Chair invited all experts to send their written comments on GRSG-111-02-Rev.1 in due time to the experts from ISO or NGV Global.

34. The expert from the Netherlands introduced GRSG-111-20 aimed at correcting an error in the definitions related to the manual valve. GRSG noted general support and agreed to resume consideration of this subject at its next session in April 2017. The secretariat was requested to circulate GRSG-111-20 with an official symbol.

35. GRSG noted GRSG-111-31, tabled by the International Association of Fire and Rescue Services (CTIF), on the need to take into account during the development of UN regulations necessary interventions and actions of and risks for rescuers, especially on the identification of propulsion and energy storage systems in vehicles. The Chair invited interested experts to send their comments to the authors of the presentation (see e-mail addresses on the last page).

XI. Regulation No. 116 (Anti-theft and alarm systems) (agenda item 10)

Documentation: ECE/TRANS/WP.29/GRSG/2015/7

36. The expert from OICA withdrew ECE/TRANS/WP.29/GRSG/2015/7.

37. Recalling its decision at the last session (see report ECE/TRANS/WP.29/GRSG/89, para. 51), GRSG agreed to resume consideration of this item at its next session in April 2017 on the basis of concrete proposals from the Task Force on the splitting of the provisions of UN Regulation No. 116 (see para. 50 below).

XII. Regulation No. 118 (Burning behaviour of materials) (agenda item 11)

Documentation: ECE/TRANS/WP.29/GRSG/2016/3
ECE/TRANS/WP.29/GRSG/2016/23
ECE/TRANS/WP.29/GRSG/2016/24
Informal documents GRSG-110-02 and GRSG-111-30-Rev.1

38. The expert from Germany introduced ECE/TRANS/WP.29/GRSG/2016/23 aimed at simplifying the administrative procedures that do not benefit the level of safety. GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft Supplement 3 to the 02 series of amendments to UN Regulation No. 118.

39. The expert from Germany presented updated test requirements for electric cables sleeves and cable conduits (ECE/TRANS/WP.29/GRSG/2016/24 superseding ECE/TRANS/WP.29/GRSG/2016/3). The expert from OICA supported the principles of the proposal, but underlined the need for transitional provisions that give sufficient lead-time for the automotive industry. GRSG reviewed the proposal as reflected in GRSG-111-30-Rev.1. GRSG noted the preference by the experts from CLCCR and OICA to add one additional year (2021 instead of 2020 for all registrations) to the date specified in paragraph 12.13.

40. Finally, GRSG adopted ECE/TRANS/WP.29/GRSG/2016/24 as reproduced in Annex III to this report and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their March 2017 sessions, as draft 03 series of amendments to UN Regulation No. 118.

XIII. Regulation No. 121 (Identification of controls, tell-tales and indicators) (agenda item 12)

Documentation: ECE/TRANS/WP.29/GRSG/2016/17
ECE/TRANS/WP.29/GRSG/2016/26
Informal documents GRSG-111-14 and GRSG-111-37

41. The expert from the Russian Federation recalled that the purpose of document ECE/TRANS/WP.29/GRSG/2016/17 was to insert into UN Regulation No. 121 a new symbol for the emergency call control and tell-tale. GRSG noted an editorial correction to footnote ²¹ (replace 'reoriented' by 're-orientated') and agreed to submit it to WP.29 in parallel with the new draft Regulation on AECS (paras. 44-48 below).

42. The expert from OICA presented GRSG-111-37 (superseding ECE/TRANS/WP.29/GRSG/2016/26) aimed at aligning the provisions of UN Regulation No. 121 to those of the 07 series of amendments to UN Regulation No. 16 on safety-belts.

43. The expert from OICA suggested aligning the text of item No. 31 with that of standard ISO 2575 (GRSG-111-14). GRSG generally supported the proposal with a study reservation on GRSG-111-37 from the expert from Germany. GRSG decided to resume consideration of the proposals at its next session in April 2017 and requested the secretariat to circulate both documents (GRSG-111-14 and GRSG-111-37) with an official symbol.

XIV. Accident Emergency Call Systems (AECS) (agenda item 13)

Documentation: ECE/TRANS/WP.29/GRSG/2016/19
Informal documents GRSG-111-04, GRSG-111-06, GRSG-111-07,
GRSG-111-13, GRSG-111-15, GRSG-111-26, GRSG-111-38,
GRSG-111-39 and GRSG-111-40

44. On behalf of the IWG on AECS, the expert from the Russian Federation presented a draft UN Regulation on AECS (ECE/TRANS/WP.29/GRSG/2016/19) and GRSG-111-06 with a detailed justification for the proposal. He introduced GRSG-111-07 with some further amendments proposed by the IWG on AECS. He drew the attention of GRSG to the limited scope of the new Regulation. He added that several functionalities were not covered by the provisions of the draft UN Regulation such as (i) the communication module functionality and communication antenna functionality unless otherwise prescribed in the Regulation, (ii) the additional data to the Minimum Set of Data (MSD) to be conveyed to Public Service Answering Party (PSAP), (iii) the format of the data, the mechanism and logic of data transmission, data exchange protocol, (iv) the operation modes and conditions of transitions between such modes, (v) performance of the test call and test data transfer, the response to protocol commands received from infrastructure and network registration logic, privacy, data protection and personal data processing as well as (vi) Periodical Technical Inspection (PTI). These functionalities would have to be resolved or approved on a national/regional level.

45. GRSG welcomed the document and acknowledged the work of the IWG on AECS. GRSG noted a number of comments on the scope of the new Regulation and reviewed the proposal as reflected in GRSG-111-38. The expert from the Russian Federation introduced GRSG-111-13 clarifying that the draft UN Regulation does not apply to AECD/AECS functionality assessment in case of vehicle rollover. The expert from Japan presented study results on the peak pulse in comparison with three crash test methods (GRSG-111-26). He concluded that the corridor of the sled pulse (60g) specified in ECE/TRANS/WP.29/GRSG/2016/19 was severe enough for real world crashes. The

experts from the Russian Federation and Switzerland supported that position. The expert from EC explained that his organization had already issued the EU legislation with a pulse peak of 65g and, thus, he would not be in the position to support the proposal. He raised a study reservation to consider in detail the study results of GRSG-111-26. GRSG agreed to keep GRSG-111-26 on the agenda as a reference document

46. The expert from OICA gave a presentation on the current status of regulatory developments and proposed possible steps forward (GRSG-111-39). He introduced GRSG-111-15 which proposes further amendments to ECE/TRANS/WP.29/GRSG/2016/19 aimed at introducing type approval requirements for Automatic Emergency Call Component (AECC). The proposal received general support.

47. GRSG welcomed GRSG-111-04 which lists ITU recommendations referenced in draft UN Regulation on AECS that specify the speech communication requirements for emergency calls originating from vehicles. The expert from ITU introduced the ITU Conformity Assessment Steering Committee (GRSG-111-40).

48. Finally, GRSG agreed that an extension of the mandate of the IWG on AECS was not necessary and to resume consideration of this subject at its next session in April 2017. GRSG endorsed the following suggestions by the Chair:

- (a) Experts were invited to send their written comments on the AECC requirements (GRSG-111-15) to the expert from OICA by end of November 2016 at the latest;
- (b) Experts were invited to participate in a task force meeting organized by OICA and scheduled to be held in January 2017 to discuss the remaining open issues (GRSG-111-38);
- (c) Contracting Parties were invited to consider, at the highest level, possible solutions to resolve the incoherence of their positions on the pulse peak of 60g versus 65g.

XV. International Whole Vehicle Type Approval (IWVTA) (agenda item 14)

Documentation: Informal documents GRSG-110-24

49. GRSG welcomed the good news that the World Forum WP.29 had endorsed, at its June 2016 session, the text of draft Revision 3 to the 1958 Agreement as reflected in ECE/TRANS/WP.29/2016/2 and that no objection had been raised from the represented Contracting Parties to the 1958 Agreement (report ECE/TRANS/WP.29/1123, paras. 48 and 49). GRSG noted that WP.29 had invited the representative of EU to proceed with the notification process of Revision 3 to United Nations Office for Legal Affairs (OLA). It was also noted that the corresponding EU decision as well as the text of Revision 3 had been published on 11 October 2016 in the EU official journal L274.

50. GRSG recalled the discussion during its previous session on GRSG-110-24 and its decision to split Regulation No. 116 into three UN Regulations, specifically on (i) anti-theft devices, (ii) alarm systems and (iii) immobilizers. GRSG noted that the Task Force was still working on concrete proposals that were expected to be submitted for consideration at the next GRSG session. GRSG also noted that UN Regulations Nos. 18 and 97 would be incorporated into the new proposals. GRSG agreed to keep UN Regulation No. 116, but to remove some provisions and to insert the latter ones into two new UN Regulations.

51. The Chair suggested deferring the discussion of this subject to the next GRSG session in April 2017 awaiting the proposals by the Task Force.

XVI. Consolidated Resolution on the Construction of Vehicles (R.E.3) (agenda item 15)

Documentation: ECE/TRANS/WP.29/GRSG/2015/30

52. The expert from IMMA withdrew ECE/TRANS/WP.29/GRSG/2015/30. GRSG agreed to remove this item from the agenda of the next session.

XVII. In-vehicle Electronic Data Storage Systems (agenda item 16)

53. GRSG recalled its recent exchange of views on the activities on data recording and data protection in the Working Parties subsidiary to WP.29 and their IWGs involved in automated driving (ITS/AD), Automatically Commanded Steering Functions (ACSF) within the Working Party on Brakes and Running Gears (GRRF) and Accident Emergency Call Systems (AECS) and others (event data recorder, odometer, etc.). Thus, GRSG noted the recommendation by WP.29 that these activities be coordinated by ITS/AD. It was also noted that the World Forum WP.29 was expected to consider at its November 2016 session draft guidelines on measures for cyber security and data protection.

54. The expert from the United Kingdom underlined the urgent need to ensure cyber-security and announced that his Government had considered funding trial projects. The expert from the United States of America endorsed the position and informed GRSG about the collection of useful statistical data on road vehicle accidents following the enforcement of a new regulation on event data recorder in 2012. He announced his intention to report back to WP.29 and GRSG on this subject at their forthcoming sessions. GRSG welcomed the offer.

XVIII. Global Technical Regulation No. 6 (Safety glazing) (agenda item 17)

Documentation: Informal documents GRSG-111-32, GRSG-111-33 and GRSG-111-34

55. The expert from the Republic of Korea, chairing the IWG on Panoramic Sunroof Glazing (PSG), reported on the outcome of the fifth and sixth meetings of the Group (GRSG-111-32). On behalf of the IWG, he presented GRSG-111-34, proposing to further clarify the scope of Global Technical Regulation (GTR) No. 6 on safety glazing. He added that the IWG would need more time to complete some research on ceramic printed areas and, thus, that the Group had decided to amend the Terms of Reference (GRSG-111-33). As the mandate of the IWG ended in October 2016, he underlined the need to extend the mandate of the IWG by one and a half years.

56. GRSG welcomed the work progress of the IWG and agreed to resume consideration of GRSG-111-33 at the next session. The GRSG Chair requested the secretariat to circulate GRSG-111-34 with an official symbol. He announced his intention to seek the consent of WP.29 and the Executive Committee AC.3 of the 1998 Agreement to extend the mandate for the IWG until June 2018.

XIX. New regulation on Advanced Driver Assist Systems (ADAS) (agenda item 18)

Documentation: Informal document GRSG-111-24

57. As a follow-up to his presentation of the previous GRSG session, the expert from Germany introduced GRSG-111-24 on the development of test procedures for a new draft regulation on Advanced Driver Assist Systems (ADAS) to avoid such blind spot accidents by a driver information and warning system. GRSG welcomed the information and the progress made by the Federal Highway Research Institute of Germany (BAST).

58. The expert from Canada informed GRSG that his country had conducted several investigations on this subject and that the corresponding reports were publicly available. He offered to provide the expert from BAST with detailed results on these investigations.

59. Following the discussion, GRSG agreed to resume consideration of this subject at its next session on the basis of a first draft of the new UN Regulation on ADAS expected to be submitted by Germany.

XX. Election of officers (agenda item 19)

60. In compliance with Rule 37 of the Rules of Procedure (TRANS/WP.29/690 as amended by Amendments 1 and 2), GRSG called for the election of officers on Wednesday afternoon, 12 October 2016. Mr. A. Erario (Italy) was unanimously re-elected as Chair and Mr. K. Hendershot (Canada) as Vice-Chair for the GRSG sessions scheduled for 2017.

XXI. Other business (agenda item 20)

A. Regulation No. 105 (ADR vehicles)

Documentation: ECE/TRANS/WP.29/2016/90

61. GRSG noted the endorsement by the Working Party on the Transport of Dangerous Goods at its May 2016 session of ECE/TRANS/WP.29/2016/90 (based on ECE/TRANS/WP.29/GRSG/2016/13) to align the provisions of UN Regulation No. 105 with those of the new 2017 edition of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). GRSG reconfirmed its adoption and submission to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft 06 series of amendments to UN Regulation No. 105.

B. Tributes to Messrs. Damm and Pichon

62. Learning that Mr. Christian Pichon (France) would be retiring, GRSG thanked him for his considerable contributions over the last decades to the activities of GRSG. GRSG recognized his commitment with a long applause and wished him a long and happy retirement.

63. GRSG noted that Mr. Richard Damm (Germany) was taking over new responsibilities in his Government and that he would no longer attend the sessions. GRSG acknowledged his continued support during all the years of participation in the sessions and especially his dedication as Co-Chair of the GRSG IWGs on PSG and leader of Task Force

on 3D H-point machine. GRSG recognized his commitments with a long applause and wished him a great success in his future activities.

XXII. Provisional agenda for the 112th session

64. The following provisional agenda was adopted for the 112th session of GRSG, scheduled to be held in Geneva from 24 (starting at 2.30 p.m.) to 28 April (concluding at 12.30 p.m.) 2017:¹

1. Adoption of the agenda.
2. Regulation No. 107 (M₂ and M₃ vehicles).
3. Regulation No. 39 (Speedometer and odometer).
4. Regulation No. 43 (Safety glazing).
5. Regulation No. 46 (Devices for indirect vision).
6. Regulation No. 66 (Strength of superstructure (buses)).
7. Regulation No. 67 (LPG vehicles).
8. Regulation No. 110 (CNG and LNG vehicles).
9. Regulation No. 116 (Anti-theft and alarm systems).
10. Regulation No. 121 (Identification of controls, tell-tales and indicators).
11. Accident Emergency Call Systems (AECS).
12. International Whole Vehicle Type Approval (IWVTA).
13. In-vehicle Electronic Data Storage Systems.
14. Global Technical Regulation No. 6 (Safety glazing).
15. New regulation on Advanced Driver Assist Systems (ADAS).
16. Other business.

¹ GRSG noted that the deadline for submission of official documents to the UNECE secretariat was 27 January 2017, twelve weeks prior to the session.

Annex I

List of informal documents considered during the session

List of informal documents (GRSG-111-...) distributed during the session (English only)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(GRSG Chair) Running order of the 111th session of GRSG (11 – 14 October 2016)	(f)
2-Rev.1	(ISO) Rationale for the proposed amendments to Regulation No. 110 (CNG/LNG vehicles)	(e)
3	(ISO) ISO standards referenced to in UN Regulation No. 110 (CNG/LNG vehicles)	(f)
4	(ITU) ITU-T P.1140 06/15 on speech communication requirements for emergency calls originating from vehicles (AECS)	(f)
5	(Poland) Proposal for amendments to UN Regulation No. 43, document ECE/TRANS/WP.29/GRSG/2015/22 (Safety glazing)	(e)
6	(AECS) Justification to document ECE/TRANS/WP.29/GRSG/2016/19 (Draft UN Regulation on AECS)	(f)
7	(AECS) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2016/19 (Draft UN Regulation on AECS)	(f)
8	(OICA) Proposal for amendments to the 06 and 07 series of amendments to Regulation No. 107 (M2 and M3 vehicles)	(a)
9	(OICA) Proposal for amendments to the 05, 06 and 07 series of amendments to Regulation No. 107 (M2 and M3 vehicles)	(e)
10	(OICA) Proposal for Corrigendum to the 01 series of amendments to Regulation No. 39 (Speedometer and odometer)	(a)
11	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2016/21 on Regulation No. 43 (Safety glazing)	(b)
12	(CLEPA) Proposal for amendments to Regulation No. 43 (Safety glazing)	(f)
13	(Russian Federation) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2016/19 (Draft Regulation on Accident Emergency Call Systems)	(f)
14	(OICA) Proposal for amendments to Regulation No. 121 (Controls and tell-tales)	(c)
15	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2016/19 (AECC)	(f)
16	(IRU) Proposal for amendments to UN Regulation No. 107 (M2 and M3 vehicles)	(f)
17	(Poland) UN Regulation No. 67 (LPG vehicles) - Draft proposal for Supplement x to the xx series of amendments	(e)
18	(Japan) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2016/16 (UN R110)	(f)
19-Rev.1	(Netherlands) Updated proposal for amendments to UN Regulation No. 67 (Equipment for liquefied petroleum gas (LPG))	(c)
20	(Netherlands) Proposal for amendments to Regulation No. 110 (CNG/LNG vehicles)	(c)
21	(Belgium) A detailed analysis on the compatibility or incompatibility of the scopes and technical provisions for trolleybuses of UN Regulations Nos. 100 and 107	(c)
22	(Japan) Report by the Task Force UN-R46 (5th meeting held in Paris)	(f)
23	(Japan) Proposal for amendment to Regulation No. 46 (Devices for indirect vision)	(e)
24	(Germany) Draft Regulation on Driver Assist Systems to avoid blind spot accidents	(f)
25	(ISO) Structure of ISO Technical Committee on specific aspects for gaseous fuels	(f)
26	(Japan) Consideration of G corridor based on Crash Pulses	(c)
27	(Germany) Proposal for an amendment of the text of Regulation No. 46 (Devices for	(c)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
	indirect vision)	
28	(Japan) Efforts in Japan for a Barrier-Free Public Transit System	(f)
29	(Japan) Draft of Terms of Reference and Rules of Procedure of the informal group of GRSG on close proximity vision and obstacle detection system	(e)
30-Rev.1	(Secretariat) Proposal for the 03 series of amendment to Regulation No. 118 (Burning behavior)	(b)
31	(CTIF) International Association of Fire and Rescue services	(f)
32	(Republic of Korea) Progress report by IWG on PSG	(f)
33	(PSG Chair) Terms of Reference and Rules of Procedure of the informal working group of Panoramic Sunroof Glazing (PSG)	(d)
34	(PSG Chair) Proposal for draft Corrigendum 2 to Global Technical Regulation No. 6 - Safety glazing materials for motor vehicles and motor vehicle equipment	(c)
35	(Germany) Proposal for amendments to UN Regulation No. 107	(e)
36	(Japan) Outline of standard specifications for non-step buses	(f)
37	(OICA) Proposal for Supplement 1 to the 01 series of amendments to Regulation No. 121 (Identification of controls, tell-tales and indicators)	(c)
38	(Secretariat) Proposal for a new Regulation on Accident Emergency Call Systems	(f)
39	(OICA) AECS: Accident Emergency Call System	(f)
40	(ITU) Introduction to the Conformity Assessment Steering Committee (ITU-T CASC)	(f)

List of informal documents distributed and linked to a previous session of GRSG or WP.29 (English only)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
GRSG-109-13	(EC) Proposal for amendments to the 01 series of amendments to Regulation No. 39 (Speedometer)	(f)
GRSG-110-02	(Finland) Proposal for Supplement 3 to the 02 series of amendments and Supplement 1 to the 03 series of amendments to Regulation No. 118 (Burning behaviour)	(f)
GRSG-110-12	(Japan) Proposal for amendments to Regulation No. 46 (Devices for indirect vision)	(f)
GRSG-110-16	(United Kingdom) Proposal for the 02 series of amendments to Regulation No. 66 (Strength of superstructure (buses))	(e)
GRSG-110-20-Rev.1	(CLCCR) Proposal for amendments to Regulation No. 73 (Lateral protection devices)	(f)

Notes:

- (a) Adopted/endorsed with no change for consideration at WP.29.
- (b) Adopted/endorsed with changes for consideration at WP.29.
- (c) Resume consideration on the basis of an official document.
- (d) Keep as a reference document/continue consideration.
- (e) Revised proposal for the next session.
- (f) Consideration completed or to be superseded.

Annex II

Draft Supplement 5 to the 01 series of amendments to Regulation No. 43 (para. 17) (superseding ECE/TRANS/WP.29/GRSG/2016/21)

Annex 14

Paragraph 1., amend to read:

"1. Rigid plastic glazings ... of the following **principal characteristics**."

Paragraph 1.1.6., amend to read:

"1.1.6. The nominal thickness. ... the acceptable thickness tolerance is given by equation (thickness tolerance limits (mm) = $\pm (0.4 \text{ mm} + 0.1 e)$)

where e is the sheet **nominal** thickness in millimetres.

Reference standard is ISO **7823-1: 2003**."

Insert a new paragraph 1.2.2., to read:

"**1.2.2. The incorporation or otherwise of opaque obscuration.**"

Paragraph 4.2., amend to read (inserting a table including a new note ¹):

"4.2. Number of test pieces

Six flat test pieces (1,170 x 570 +0/-2 mm) or six complete parts shall be subjected to testing.

The table below shows the type of samples subject to testing, in accordance with the dimensions of the glazing to be assessed.

Type of window	Characteristic of window	Dimensions of flat sample	Alternative
Small window	Diameter D of the circle capable of being scribed: D < 150 mm and area of less than 200 cm ²	No test	
Other than small window	Diameter D of the circle capable of being scribed: D < 400 mm and area of at least 200 cm ²	1,170 mm x 570 mm (material type testing and standard support frame)	Other part of same material, production procedure, thickness, colour with dimensions bigger than those of the original part, into which a 400 mm diameter circle can be scribed, and with a developed surface area of less than 1,170 mm x 570 mm (part type approval for the original part ¹)
	Diameter D of the circle capable of being scribed: 400 mm < D	1,170 mm x 570 mm (material type testing and standard support frame)	Real part (submitted for approval) (part type approval and dedicated support frame)

Note: ¹ **Original part dimensions are too small for performing the test."**

Paragraphs 4.3.2. and 4.3.3., amend to read:

"4.3.2. For **forward facing glazing situated forward of an occupant** like partitions and separating windows which have impact probability (classification VIII/A) the drop height shall be 3 m. The HIC value **shall also be** measured.

4.3.3. For glazing like side windows, back windows and sunroofs which have reduced impact possibilities (classification VIII/B) the drop height shall be 1.5 m. The HIC value **shall also be** measured."

Paragraph 4.4.3., amend to read:

"4.4.3. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the headform test if **all tests give satisfactory results.**"

Paragraphs 4.4.3.1. and 4.4.3.2., shall be deleted.

Paragraph 5.1., amend to read:

"5.1. Indices of difficulty of the secondary characteristics:

- (1) Without conductors, **obscuration(s)** or heating elements;
- (2) With conductors, **obscuration(s)** or heating elements."

Paragraph 5.2., amend to read:

"5.2. Number of test pieces

Ten flat square pieces of 300 mm +10/-0 mm **side** or ten substantially flat finished parts shall be subjected to testing. **In this later case, the contact between the part and the supporting fixture shall be around the whole perimeter and of about 15 mm width. Upper and lower supporting frames shall be clamped together in a way that ensures that the movement of the test piece during the test shall not exceed 2 mm.**"

Paragraph 5.3.2., replace "thickness" by "**nominal thickness**" (twice).

Paragraphs 5.4.1. and 5.4.2., amend to read:

"5.4.1. The ball test shall be ...

- (b) The test piece does not break into separate pieces.

As a result of the impact, cracks and fissures in the **test piece** are however permissible.

5.4.2. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the 227 g ball test if **eight or more separate tests give a satisfactory result at the drop height.**"

Paragraphs 5.4.2.1. and 5.4.2.2., shall be deleted.

Insert a new paragraph 5.4.3., to read:

"**5.4.3. The ambient temperature ball drop test shall be only performed after the humidity test of paragraph 6.4.4. of this annex.**"

Paragraphs 6.1.3.1. and 6.1.3.2., replace "total light scatter" by "**increase of haze**" (twice).

Insert a new paragraph 6.1.3.3., to read:

"**6.1.3.3. In the case of glazing of Class L, for the abrasion on the outer surface of the test sample, either the abrasion test according to Annex 3, paragraph 4. or as an equivalent alternative the package of sand drop test, car-wash test and wiper test shall apply as described in Annex 17, paragraphs 6.1.2., 6.1.3. and 6.1.4.**"

Paragraph 6.1.3.3. (former), renumber as paragraph 6.1.3.4.

Paragraphs 6.2.4., amend to read:

"6.2.4. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the resistance to simulated weathering if **all test pieces give satisfactory results.**"

Paragraphs 6.2.4.1. and 6.2.4.2., shall be deleted.

Paragraph 6.3.3.2., amend to read:

"6.3.3.2. The test piece shall be considered satisfactory from the point of view of approval **the test gives satisfactory results.**"

Paragraphs 6.3.3.2.1. and 6.3.3.2.2., shall be deleted.

Paragraph 6.4.2., amend to read:

"6.4.2. Ten flat square test pieces of 300 mm side **or ten original parts** shall be subjected to testing."

Paragraph 7.1., amend to read:

"7.1. Interpretation of results

A set of **four samples** shall be considered as satisfactory if **all samples give satisfactory results.**"

Paragraphs 7.1.1. and 7.1.2., shall be deleted.

Paragraph 8.2.1., amend to read:

"8.2.1. For the purpose of approval a set of samples will be considered satisfactory if **all samples give satisfactory results.**"

Paragraphs 8.2.1.1. and 8.2.1.2., shall be deleted.

Paragraphs 9.1. to 9.2.2., amend to read:

9.1. Immersion test

9.1.1. Indices of difficulty and test method

The requirements of Annex 3, paragraph 11.2.1., shall apply.

9.1.2. Interpretation of results

A set of four samples for each chemical shall be tested; for each chemical, in case of glazing of Class L, one of these samples shall be cross-cut according to paragraph 13. of Annex 3.

Three samples out of four, among which the cross-cut sample mentioned above when applicable, shall give satisfactory results for each chemical.

9.2. Test under load

9.2.1. Indices of difficulty and test method

The requirements of Annex 3, paragraph 11.2.4. shall apply.

9.2.2. Interpretation of results

A set of four samples, not being the ones mentioned in paragraph 9.1. above, for each chemical shall be tested.

Three samples out of four shall give satisfactory results for each chemical."

Annex 15

Paragraph 1.1.5., correct to read:

"1.1.5. The nominal thickness (e), a manufacturing tolerance being allowed:
 $\pm (0.1 \text{ mm} + 0.1 e)$; $e > 0.1 \text{ mm}$."

Paragraph 4.2.1., amend to read:

"4.2.1. Number of test pieces

Ten flat square pieces of 300 +10/-0 mm **side** shall be subjected to testing."

Paragraph 4.2.3.2., amend to read:

"4.2.3.2. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the 227 g ball test if **eight or more separate tests give a satisfactory result at the drop height.**"

Paragraphs 4.2.3.2.1. and 4.2.3.2.2., shall be deleted.

Paragraph 5.1.4., amend to read:

"5.1.4. A set of test pieces or samples submitted for approval shall be considered satisfactory from the point of view of the resistance to simulated weathering if **all test pieces or samples give satisfactory results.**"

Paragraphs 5.1.4.1. and 5.1.4.2., shall be deleted.

Paragraph 6.1., amend to read:

"6.1. Interpretation of results

A set of **four** samples shall be considered as satisfactory if **all samples give satisfactory results.**"

Paragraphs 6.1.1. and 6.1.2., shall be deleted.

Paragraph 7.2.1., amend to read:

"7.2.1. For the purpose of approval a set of samples will be considered satisfactory if **all samples give satisfactory results.**"

Paragraphs 7.2.1.1. and 7.2.1.2., shall be deleted.

Paragraph 8.2., amend to read:

"8.2. Interpretation of results

A set of samples shall be considered acceptable if **all samples give satisfactory results.**"

Paragraphs 8.2.1. and 8.2.2., shall be deleted.

Annex 16

Paragraph 1., amend to read:

"1. Double glazed unit ... of the following **principal characteristics.**"

Paragraph 1.1.4., replace "The thickness" by "The **nominal** thickness".

Paragraph 1.2.1., amend to read:

"1.2.1. **The incorporation or otherwise of opaque obscuration.**"

Paragraph 2.3., amend to read:

- "2.3. The nominal ... by the equation:
 Thickness tolerance limits (mm) = $\pm (0.4 \text{ mm} + 0.1 \cdot e)$
 where e is the sheet nominal thickness **in millimetres**.
 Reference standard is ISO **7823-1: 2003**.
 NB: Where ... of the unit."

Paragraph 4.2., amend to read (inserting a table including also a new note ¹):

- "4.2. Number of test pieces
Six flat test pieces (1,170 mm x 570 mm +0/-2 mm) or six complete parts shall be subjected to testing.
The table below shows the type of samples subject to testing, in accordance with the dimensions of the glazing to be assessed.

Type of window	Characteristic of window	Dimensions of flat sample	Alternative
Small window	Diameter D of the circle capable of being scribed: D < 150 mm and area of less than 200 cm ²	No test	
Other than small window	Diameter D of the circle capable of being scribed: D < 400 mm and area of at least 200 cm ²	1,170 mm x 570 mm (material type testing and standard support frame)	Other part of same material, production procedure, thickness, colour with dimensions bigger than those of the original part, into which a 400 mm diameter circle can be scribed, and with a developed surface area of less than 1,170 mm x 570 mm (part type approval for the original part ¹)
	Diameter D of the circle capable of being scribed: 400 mm < D	1,170 mm x 570 mm (material type testing and standard support frame)	Real part (submitted for approval) (part type approval and dedicated support frame)

Note: ¹ **Original part dimensions are too small for performing the test."**

Paragraphs 4.3.1. to 4.3.3., amend to read:

- "4.3.1. The test method used shall be that described in Annex 3, paragraph 3.2.
 4.3.2. For **forward facing** glazing **situated forward of an occupant** like partitions and separating windows which **have impact probability (classification X/A)** the drop height shall be 3 m.
 The HIC value **shall also be** measured.
 4.3.3. For glazing like side windows, back windows and sunroofs which have reduced impact possibilities (**classification X/B**) the drop height shall be 1.5 m.
 The HIC value **shall also be** measured."

Paragraphs 5.1. to 5.2., amend to read:

- "5.1. Indices of difficulty of the secondary characteristics:

- (1) Without obscuration(s)
- (2) With obscuration(s)

5.2. Number of test pieces

Ten flat square pieces of 300 mm +10/-0 mm side of the outer component sheet or ten substantially flat finished parts shall be subjected to testing. In this later case, the contact between the part and the supporting fixture shall be around the whole perimeter and of about 15 mm width. Upper and lower supporting frames shall be clamped together in a way that ensures that the movement of the test piece during the test shall not exceed 2 mm."

Paragraph 5.3.2., replace "thickness" by "**nominal thickness**" (twice).

Paragraphs 5.4.1. to 5.4.2., amend to read:

"5.4.1. The ball test shall be considered to have given a satisfactory result if the following conditions are met:

- (a) The ball does not penetrate the test piece
- (b) The test piece does not break into separate pieces.

As a result of the impact, cracks and fissures in the test piece shall however be permitted.

5.4.2. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the 227 g ball test if **eight or more separate tests give a satisfactory result at the drop height.**"

Paragraphs 5.4.2.1. and 5.4.2.2., shall be deleted.

Paragraph 6.1.2., amend to read:

"6.1.2. Three flat square test pieces of 100 mm **side** for each type of surface shall be subjected to testing."

Paragraphs 6.1.3.1. and 6.1.3.2., replace "total light scatter" by "**increase of haze**" (twice).

Insert a new paragraph 6.1.3.3., to read:

"6.1.3.3. In the case of glazing of Class L, for the abrasion on the outer surface of the test sample, either the abrasion test according to Annex 3, paragraph 4. or as an equivalent alternative the package of sand drop test, car-wash test and wiper test shall apply as described in Annex 17, paragraphs 6.1.2., 6.1.3. and 6.1.4."

Paragraph 6.1.3.3. (former), renumber as paragraph 6.1.3.4.

Paragraph 6.1.4., amend to read:

"6.1.4. A set of samples for approval shall be considered satisfactory if **all samples meet the requirements.**"

Paragraph 6.2.4., amend to read:

"6.2.4. A set of test pieces submitted for approval shall be considered satisfactory from the point of view of the resistance to simulated weathering if **all test pieces give satisfactory results.**"

Paragraphs 6.2.4.1. and 6.2.4.2., shall be deleted.

Paragraph 6.3.3.2., amend to read:

"6.3.3.2. The test piece shall be considered satisfactory from the point of view of approval if **the test gives satisfactory results.**"

Paragraphs 6.3.3.2.1. and 6.3.3.2.2., shall be deleted.

Paragraph 6.4.2., amend to read:

"6.4.2. Ten square pieces or test windows of 300 x 300 mm **side or ten original parts** shall be subjected to testing."

Paragraph 7.1., amend to read:

"7.1. Interpretation of results

A set of **four** samples shall be considered as satisfactory if **all samples give satisfactory results.**"

Paragraphs 7.1.1. and 7.1.2., shall be deleted.

Paragraph 8.2.1., amend to read:

"8.2.1. For the purpose of approval a set of samples will be considered satisfactory if **all samples give satisfactory results.**"

Paragraphs 8.2.1.1. and 8.2.1.2., shall be deleted.

Paragraphs 9.1. to 9.2.2., amend to read:

"9.1. **Immersion test**

9.1.1. **Indices of difficulty and test method**

The requirements of Annex 3, paragraph 11.2.1., shall apply.

9.1.2. **Interpretation of results**

A set of four samples for each chemical shall be tested; for each chemical, in case of glazing of Class L, one of these samples shall be cross-cut according to paragraph 13. of Annex 3.

Three samples out of four, among which the cross-cut sample mentioned above when applicable, shall give satisfactory results for each chemical.

9.2. **Test under load**

9.2.1. **Indices of difficulty and test method**

The requirements of Annex 3, paragraph 11.2.4., shall apply.

9.2.2. **Interpretation of results**

A set of four samples, not being the ones mentioned in paragraph 9.1. above, for each chemical shall be tested.

Three samples out of four shall give satisfactory results for each chemical."

Annex III

Draft 03 series of amendments to Regulation No. 118 (para. 40) (superseding ECE/TRANS/WP.29/GRSG/2016/24)

List of contents

Item 5., amend to read:

- "5. Part I: Approval of a vehicle type with regard to the burning behaviour of the components used in the interior compartment, the engine compartment and any separate heating compartment and with regard to the burning behaviour of electric cables **and cable sleeves or cable conduits** used in the vehicle and/or the capability to repel fuel or lubricant of insulation materials used in the engine compartment and any separate heating compartment."

Annexes, insert a new reference to Annex 10 to read:

"Annex 10 Test to determine the resistance to flame propagation of electrical cables"

Paragraph 1.2. (Scope), amend to read:

- "1.2. Part I - Approval of a vehicle type with regard to the burning behaviour and/or the capability to repel fuel or lubricant of the components used in the interior compartment, the engine compartment and any separate heating compartment and with regard to the burning behaviour of electric cables **and cable sleeves or cable conduits** used **for protecting electric cables** in the vehicle."

Insert new definitions 2.10. to 2.12., to read:

- "2.10. **"Electrical cable"** means a single-core or multi-core cable, when applicable sheathed, screened and unscreened, two or more cores running side by side and bonded, twisted, or braided together, including cores to form a single assembly enabling the transfer of electrical signals from one device to the other.
- 2.11. **"Cable sleeve"** means any component that enfolds single cables to a multi-core cable or electrical harness.
- 2.12. **"Cable conduit"** means any component that covers electrical cables to guide or route the cables (e.g. tubes, channels, ducts) or fasten electrical cables to the vehicle."

Paragraph 4.2., replace the figure "02" by "03" (2 times).

Paragraphs 5.2.1. and 5.2.2., amend to read:

- "5.2.1. The materials inside and no more than 13 mm beyond the interior compartment, materials of the engine compartment, materials of any separate heating compartment and electric cables, **cable sleeves or cable conduits** used in the vehicle to be type approved shall meet the requirements of Part II of this Regulation.
- 5.2.2. The materials and/or equipment used in the interior compartment, the engine compartment and any separate heating compartment and/or in devices approved as components, electric cables **and cable sleeves or cable conduits** used in the vehicle shall be so installed as to minimize the risk of flame development and flame propagation."

Paragraph 6.2.6., amend to read:

"6.2.6. Any electrical **cable exceeding** a length of 100 mm used in the vehicle shall undergo the resistance to flame propagation test described in **Annex 10 to this Regulation. As an alternative to these requirements, the test procedure described in ISO Standard 6722-1:2011, paragraph 5.22. may be applied. Test reports and approvals of components obtained according to ISO 6722:2006, paragraph 12. shall remain valid.**

The exposure to the test flame shall be finished:

(1) **for single-core cables:**

(a) when the **conductor becomes** visible, or

(b) after 15 s for cables with conductor **sizes less** or equal than 2.5 mm², and

(c) after 30 s for cables with conductor sizes greater than 2.5 mm²,

or

(2) **for sheathed, screened and unscreened single- or multi-core cables with a sum of conductor sizes smaller than or equal to 15 mm²:**

(a) **until a conductor becomes visible or for 30 s, for all cables, whichever comes first,**

or

(3) **for sheathed, screened and unscreened single- or multi-core cables with a sum of conductor sizes greater than 15 mm²:**

(a) **according to (1) or (2), whichever is applicable.**

Electrical cables according to (2) may be tested either completely or separately.

Electrical cables according to (3) shall be tested separately.

The result of the test shall be considered satisfactory if, taking into account the worst test result, any combustion flame of insulating material shall extinguish within 70 seconds and a minimum of 50 mm insulation at the top of the test sample shall remain unburned."

Insert a new paragraph 6.2.7., to read:

"6.2.7. **Any cable sleeve or cable conduit exceeding a length of 100 mm shall undergo the test to determine the burning rate of materials as specified in Annex 8. The result of the test shall be considered satisfactory if, taking the worst test results into account, the vertical burning rate is not more than 100 mm/minute or if the flame extinguishes before the destruction of one of the first marker threads occurred.**"

Paragraphs 6.2.7. to 6.2.7.3. (former), renumber as paragraphs 6.2.8. to 6.2.8.3.

Paragraph 6.2.7.4. (former), renumber as paragraph 6.2.8.4. and amend to read:

"6.2.8.4. Elements for which it is not possible to extract a sample in the prescribed dimensions as specified in paragraph 3.1. of **Annex 6, paragraph 3.** of Annex 7, and paragraph 3.1. of Annex 8."

Add new paragraphs 12.11. to 12.14. (Transitional provisions), to read:

- "12.11. As from the official date of entry into force of the 03 series of amendments, no Contracting Parties applying this Regulation shall refuse to grant approval under this Regulation as amended by the 03 series of amendment.
- 12.12. As from 1 September 2019, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type or component type to be approved meet the requirements of this Regulation as amended by the 03 series of amendments.
- 12.13. As from 1 September 2021, Contracting Parties applying this Regulation may refuse first national registration (first entry into service) of a vehicle which does not meet the requirements of this Regulation as amended by the 03 series of amendments.
- 12.14. Even after the date of entry into force of the 03 series of amendments, approvals of the components to the preceding series of amendments to the regulation shall remain valid and Contracting Parties applying the Regulation shall continue to accept them."

Annex 5 (Arrangements of approval marks), replace the figure "02" by "03" (2 times).

Annex 6, insert a new paragraph 3.1.3., to read:

- "3.1.3. The size of the sample shall be mentioned in the test report."

Annex 7, insert a new paragraph 3.1., to read:

- "3.1. The size and the mass of the sample shall be mentioned in the test report."

Annex 8

Paragraph 2.1., amend to read:

- "2.1. The specimen holder shall consist of a rectangular frame of 560 mm high and shall have two rigidly connected parallel rods spaced 150 mm apart on which pins shall be fitted for mounting the test specimen which is located in a plane at least 20 mm from the frame. The mounting pins shall be not greater than 2 mm in diameter and at least **40 mm** long. The pins shall be located on the parallel rods at locations shown in Figure 1. The frame shall be fitted onto a suitable support to maintain the rods in a vertical orientation during testing (for the purpose of locating the specimen on the pins in a plane away from the frame, spacer stubs 2 mm in diameter may be provided adjacent to the pins).

The specimen holder shown in Figure 1 may be modified in width to allow the fixation of the sample.

To fix the sample in a vertical position, a support may be provided consisting of 0.25 mm diameter heat resistant wires that horizontally span the sample at 25 mm intervals along the complete height of the specimen holder. Alternatively, the sample may be fixed by additional clamps to the specimen holder."

Paragraph 2.3., amend to read:

- "2.3. The test apparatus may be placed in a fume cupboard assembly. **The size and shape of the fume cupboard shall be such that the test results are not affected.** Before the test, the vertical velocity of the air through the fume cupboard shall be measured 100 mm in front of and behind the final position

where the test apparatus will be located. It shall be between 0.10 and 0.30 m/s in order to avoid possible discomfort, by combustion products, to the operator. It is possible to use a fume cupboard with natural ventilation and an appropriate air velocity."

Paragraphs 3.1. and 3.2., amend to read:

"3.1. **Materials according to paragraph 6.2.3.:** The samples dimensions are: 560 mm x 170 mm.

If the dimensions of a material do not permit taking a sample of the given dimensions the test shall be carried out **taking a sample having the dimensions of at least 380 mm in height and at least 3 mm in width.**

Cable sleeves and cable conduits: The samples dimensions are: length: 560 mm, but at least 380 mm if the dimensions of a material do not permit taking a sample of the given dimensions; width: actual component dimension.

3.2. **Materials according to paragraph 6.2.3.:** When the thickness of the sample is more than 13 mm, it shall be reduced to 13 mm by a mechanical process applied to the side which does not face the respective compartment (interior, engine or separate heating compartment). If it is impossible, the test shall be carried out in accordance with the Technical Service the initial thickness of the material, which shall be mentioned in the test report. Composite materials (see paragraph 6.1.3.) shall be tested as if they were of uniform construction. In the case of materials made of superimposed layers of different composition which are not composite materials, all the layers of material included within a depth of 13 mm from the surface facing towards the respective compartment shall be tested individually."

Insert a new paragraph 3.3., to read:

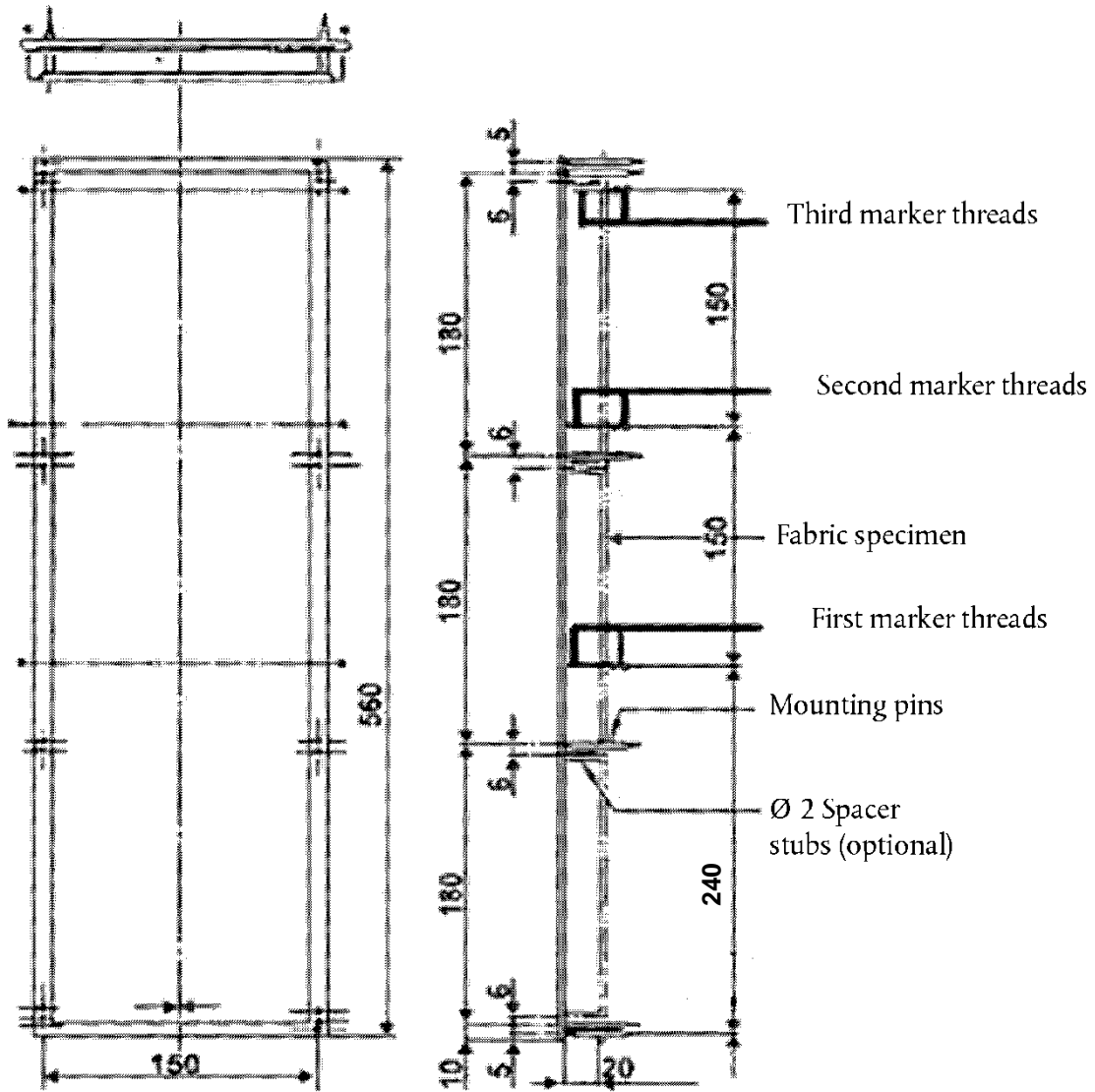
"**3.3. The size of the sample shall be mentioned in the test report.**"

Paragraph 3.3. (former), renumber as paragraph 3.4.

Figure 1, amend to read (removing "Burner" at the bottom and replacing "220" by "240"):

"Figure 1

Specimen holder (Dimensions in millimetres)



Insert a new Annex 10, to read:

"ANNEX 10

Test to determine the resistance to flame propagation of electrical cables

1. Scope

This annex defines prescriptions to test the resistance to flame propagation of electrical cables used in the vehicle.

2. Sampling and principle

2.1. Five samples shall undergo the test

3. Samples

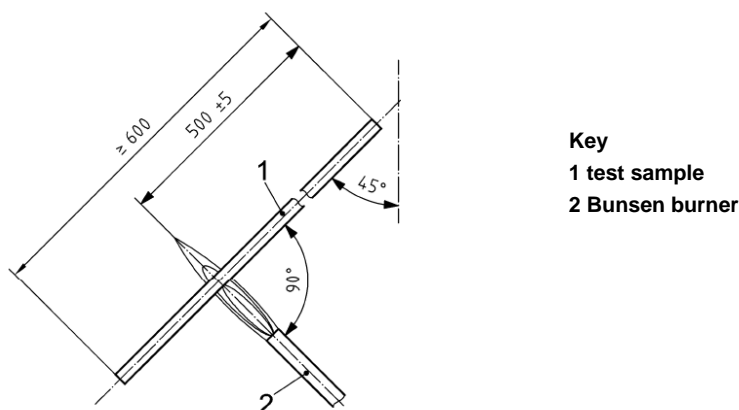
3.1. Test samples shall have a length of at least 600 mm of insulation.

4. Procedure

Determine the resistance to flame propagation using a Bunsen burner with an appropriate gas, having a combustion tube of 9 mm internal diameter, where the flame temperature at the tip of the inner blue cone shall be $(950 \pm 50) ^\circ\text{C}$.

Suspend the test sample in a draught-free chamber and expose the test sample to the tip of the inner cone of the flame, as shown in Figure 1. The upper end of the cable shall point away from the closest wall of the chamber. The sample shall be subject to a stress, e.g. by means of a weight over a pulley, in order to keep it straight at all times. The angle of the cable shall be $45^\circ \pm 1^\circ$ relative to the vertical line. In any case, the shortest distance of any part of the sample shall be 100 mm minimum from any wall of the chamber. Apply the flame with the tip of the inner blue cone touching the insulation (500 ± 5) mm from the upper end of the insulation.

Figure 1
Apparatus for resistance to flame propagation (Dimensions in millimetres)



Annex IV

GRSG informal groups

<i>Informal group</i>	<i>Chair</i>	<i>Secretary</i>
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Close proximity vision and obstacle detection systems	To be elected	To be elected
