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PROPOSAL FOR A NEW DRAFT REGULATION:

**UNIFORM PROVISIONS CONCERNING THE APPROVAL OF
ACCESSORY/ADD-ON OR REPLACEMENT SEAT COVERS
INTENDED FOR THE INSTALLATION IN VEHICLES EQUIPPED WITH OR WITHOUT
SEAT-INTEGRATED AIRBAG SYSTEMS**

Transmitted by the expert from Germany

Note: This document was prepared by the expert from Germany in order to propose a new draft Regulation on seat covers. It is a consequence of the discussion at the thirty-seventh session of GRSP (report TRANS/WP.29/GRSP/37, para. 37) and it is based on informal document No. GRSP-37-8.

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

A. PROPOSAL

"UNIFORM PROVISIONS CONCERNING THE APPROVAL OF ACCESSORY/ADD-ON OR REPLACEMENT SEAT COVERS INTENDED FOR THE INSTALLATION IN VEHICLES EQUIPPED WITH OR WITHOUT SEAT-INTEGRATED AIRBAG SYSTEMS

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ANNEXES

Annex 1 Communication concerning the approval or refusal or extension or withdrawal of approval or production definitely discontinued of an accessory/add-on seat cover type or a replacement seat cover type with regard to the behaviour of form, shape and seals, function of openings and cut-offs for airbag deployment purposes and the flammability resistance of the used materials pursuant to Regulation No. 1##.

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1. SCOPE

This Regulation applies to a seat cover intended as accessory/add-on part to cover the remaining original seat cover or to replace the originally equipped seat cover. This Regulation applies also to a seat cover where the seat incorporates an airbag system to protect occupants especially in case of a side impact collision of vehicles of categories M1 and N1.

2. DEFINITIONS

For the purposes of this Regulation:

- 2.1. "Approval of an accessory/add-on seat cover type" means the approval of a seat cover intended as add-on system to cover the original seat cover which remains fixed completely to the seat.
- 2.2. "Approval of a replacement seat cover type" means the approval of a seat cover intended to replace the seat cover originally provided by the vehicle manufacturer.
- 2.3. "Type of an accessory/add-on seat cover" according to 2.1. and "Type of a replacement seat cover" according to paragraph 2.2. are types which do not differ in such essential respects as:
 - 2.3.1. the strength and tearing resistance of the cover, the seams and the behaviour of the material adjacent to the seams,
 - 2.3.2. the arrangement, size and location of the opening and/or cut-outs which influence the deployment of the airbag system(s).
- 2.4. "Seat" means a structure which may or may not be integral with the vehicle structure complete with trim, intended to seat one adult person. The term covers both an individual seat or a part of a bench seat intended to seat one person.
- 2.5. "Bench seat" means a structure complete with trim, intended to seat more than one adult person.
- 2.6. "Original vehicle seat cover" means a part which is supplied by a vehicle manufacturer (OEM: Original equipment manufacturer) for production use or for subsequent maintenance for a vehicle type.
- 2.7. "Accessory/add-on seat cover" means a seat cover, designed and/or made by a component manufacturer which covers the original seat cover in the form of an add-on part.

- 2.8. "Replacement seat cover" means a seat cover designed and/or made by a component manufacturer to replace the original vehicle seat cover as a whole or partially by a new seat cover.

3. APPLICATION FOR APPROVAL

- 3.1. The application for approval of an accessory/add-on seat cover type or a replacement seat cover type shall be submitted by the seat cover manufacturer or by his duly accredited representative.

The applicant in the sense of this Regulation may also be a vehicle manufacturer or his duly accredited representative.

- 3.2. It shall be accompanied by the following documents in triplicate and the following particulars:

- 3.2.1. a detailed description of the seat cover type with regard to the design, function and attachments for mounting,
- 3.2.2. drawings, on an appropriate scale and in sufficient detail, of the seat cover and the openings or cut-offs for the proper function of the covered parts and/or of the airbag system,
- 3.2.3. a detailed description specifying in particular the nature of the material, the materials of the seam, the specification of the material of the seat cover itself, the specification of the material of the thread and the kind of specification and documentation of the sewing process.

- 3.3. The following shall be submitted to the technical service responsible for the approval tests:

- 3.3.1. a representative set of the seat cover and,
- 3.3.2. if applicable in case of a seat integrated airbag system, a further set of the representative seat cover for the initial test and further sets for any other variants differing in size and/or airbag type. In addition in all cases a set or sets of that seat cover for the test of installation and of the function of the seat and/or the seat cover,
- 3.3.3. on request of the technical service and with the agreement of the applicant a vehicle representative of the vehicle type or parts of the vehicle which the technical service deems necessary for function and/ or installation tests.

4. APPROVAL

- 4.1. If the seat cover submitted for approval pursuant to this Regulation meets the relevant requirements, approval of the accessory/add-on seat cover type or of the replacement seat cover type shall be granted.

The above-mentioned cover type may be approved as a "component" or a "separate technical unit".

- 4.2. An approval number shall be assigned to each seat cover type approved. The first two digits of this number (at present 00) shall indicate the series of amendments corresponding to the most recent essential technical amendments made to the Regulation at the date of approval. A Contracting Party may not assign the same approval number to another type of an accessory/add-on seat cover or a replacement seat cover.

- 4.3. Notice of approval or extension or refusal of approval of a seat cover type pursuant to this Regulation shall be communicated to the Contracting Parties applying this Regulation by means of a form conforming to the model in Annex 1 to this Regulation.

- 4.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every seat cover conforming to a seat cover type approved under this Regulation, an international approval mark consisting of:

- 4.4.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval, 1/

1/ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 for Ireland, 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30 (vacant), 31 for Bosnia and Herzegovina, 32 for Latvia, 33 (vacant), 34 for Bulgaria, 35 (vacant), 36 for Lithuania, 37 for Turkey, 38 (vacant), 39 for Azerbaijan, 40 for The former Yugoslav Republic of Macedonia, 41 (vacant), 42 for the European Community (Approvals are granted by its Member States using their respective ECE symbol), 43 for Japan, 44 (vacant), 45 for Australia, 46 for Ukraine, 47 for South Africa, 48 for New Zealand, 49 for Cyprus, 50 for Malta and 51 for the Republic of Korea. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

4.4.2. 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 4.4.1.

4.5. The approval mark shall be clearly legible and be indelible.

4.6. Examples of arrangements of approval marks are given in Annex 2 to this Regulation.

5. REQUIREMENTS

5.1. General requirements applicable to accessory/add-on seat covers and to replacement seat covers

5.1.1. An approved accessory/add-on seat cover and an approved replacement seat cover shall guarantee the proper function of the original arrangement of the seat and, if applicable, the airbag system(s) of the respective seat and fulfil minimum standards for the flammability resistance of the materials used for the accessory/add-on and/or the replacement seat cover.

5.1.2. If the accessory/add-on seat cover or the replacement seat cover contains a sufficient size of an opening or cut-out arrangement to allow in general a proper deployment of the airbag system of the seat, special deployment tests are not required. In such cases the technical service shall prove:

5.1.2.1. the fixation of the seat cover and if applicable the fixation in relation to the opening of the airbag system to guarantee the correct location of the cover during the use within the vehicle,

5.1.2.2. the behaviour of the seat cover during and after movement of all seat cover related parts of the seat in question,

5.1.2.3. tests as described in paragraphs 5.2.2. (flammability resistance) and 5.2.3. (installation requirements).

5.1.3. In case of tests of an accessory/add-on or replacement seat cover provided for seats without any particular airbag function, the installation procedures and the flammability resistance shall be checked by the technical service. In addition, all other requirements beside the special requirements in case of airbag systems shall be met.

5.1.4. In case of the exchange of an original seat cover by a replacement seat cover all manufacturers / franchising partners involved with the retrofitting have to demonstrate that they are in the position to carry out the modification in line with the provisions described in the approval.

The manufacturers / franchise partners shall be named in the approval document.

- 5.1.5. For periodic technical inspections, the documentation shall describe the provisions on how to check a seat cover in general and/or in specifics.

5.2. Special requirements applicable to accessory/add-on seat covers and to replacement seat covers

5.2.1. Airbag deployment tests (if applicable)

A comparison of the behaviour of the deployment of the airbag between an original seat configuration and a seat with accessory/add-on, respectively replacement seat cover type, shall be tested and evaluated by the technical service as described below:

5.2.1.1. Comparison of horizontal and vertical movement of the airbag and particle test at ambient temperature

The horizontal and vertical movement of the airbag, the time for deployment, the stability of the deployed airbag and the length of the rupture joint shall not deviate from the limits and tolerances used by the vehicle manufacturer.

If such data are not available, the rupture length of the seams observed during the tests made with original parts and with accessory/add-on or replacement seat covers shall be comparable. Comparability can be stated if the rupture length does not influence the opening function of the airbag. In addition the deployment time of the compared airbags shall not deviate within 2 ms, measured in both main directions: horizontally and vertically.

During and after the deployment tests, no particle with a single weight of more than 2 g shall release from the tested seat system and the tested accessory/add-on or replacement seat cover. Functional ruptures and/or small cracks within the seat cover, which have no influence on the function of the tested parts, can be accepted.

5.2.1.2. Temperature tests at –40 °C and +85 °C

In addition to the comparison tests carried out by ambient temperature, tests shall be made with each accessory/add-on or replacement seat cover type at –40 °C and +85 °C according to the tests described in paragraph 6.1.3.

The temperature tests carried out at –40 °C and at +85 °C shall be carried out to evaluate the release of particles only which shall not exceed a single weight of more than 2 g.

5.2.1.3. Additional temperature tests at ambient temperature or at –40 °C and +85 °C

Every variation of an assessed seat cover, which deviates from the tested one in so far as an influence of the deployment behaviour can be expected, shall be tested

after request by the technical service and with the agreement of the component manufacturer.

5.2.2. Flammability resistance

The accessory/add-on or replacement seat cover shall be tested in accordance with Regulation No. 118.

The result of the test shall be considered satisfactory if, taking the worst test results into account, the horizontal burning rate is not more than 100 mm/min or if the flame extinguishes before reaching the last measuring point.

5.2.3. Installation requirements

5.2.3.1. The accessory/add-on seat cover shall be mounted easily and in a way that under all circumstances the proper function and, if applicable, the proper function of the seat airbag can be guaranteed.

The cover shall have a sufficient number of fixing parts to guarantee a stable location during the lifetime of the installed seat cover. Stretchable cover arrangements provided for a range of various seat forms and seat sizes, which are able to guarantee a stable fixation during the lifetime of the cover, may also be accepted.

5.2.3.2. The manufacturer of the accessory/add-on or replacement seat cover shall provide openings and cut-offs for knobs and levers for the displacement and/or adjustment of the seat, the seat back, arm rests or other additional parts of the seat.

To produce openings or cut-offs, the manufacturer may describe the necessary steps that the consumer / franchise partner is in the position to manipulate the accessory/add-on seat cover according to the descriptions given by the manufacturer of accessory/add-on or replacement seat cover. For the function of the airbag, the component manufacturer shall provide, if necessary, for replacement seat covers, internal guidance or fixing straps.

5.2.3.3. If the removal or partial removal of the original cover is necessary, the manufacturer of the component seat cover system shall describe the measures which are necessary so that the modified seat complies with the requirements of Regulation No. 21, e.g. by adding of special parts or covers which shall be provided by the applicant and which shall be incorporated as part of every sold seat cover set.

5.2.3.4. If the original seat cover or seat incorporates elements for the guidance of a safety belt, also the accessory/add-on or replacement seat cover shall have such functionality.

5.2.4. Markings and instructions for use

5.2.4.1. Markings

5.2.4.1.1. Every accessory/add-on or replacement seat cover shall be marked, if applicable, with the warning/information "AIRBAG", if the information which is provided by the vehicle manufacturer is covered by the accessory/replacement seat cover. Also in the absence of an airbag label on the original seat, the manufacturer of the seat cover shall provide a label with the warning/information "AIRBAG", which shall be located adjacent to the airbag, if the seat incorporates an airbag system.

5.2.4.1.2. If necessary for the function of the airbag and/or cover, the manufacturer of the seat cover shall mark the covers to identify the provided location for any seating position (for example right/left/centre seat).

5.2.4.2. Instructions for use

5.2.4.2.1. The holder of the approval shall arrange that the consumer will get an instruction for use in the language(s) of the country where the seat cover will be sold, which contains at minimum the following information:

5.2.4.2.1.1. correct mounting and fixing of the seat covers in relation to all seating positions which are incorporated in the existing approval,

5.2.4.2.1.2. information about openings and cut-offs and, if the consumer shall provide such openings or cut-offs, detailed step by step information to carry out such a manipulation of the seat cover,

5.2.4.2.1.3. information of the correct positioning of the covers in relation to the relevant vehicle type(s) and its seating positions,

5.2.4.2.1.4. warning information about the danger of manipulation of the kind of arrangement of the seams and airbag openings of the seat cover, warnings of covering the seams and airbag openings and of repairing the seams of the seat cover by the consumer,

5.2.4.2.1.5. cleaning information.

5.2.4.2.2. The instructions according to paragraphs 5.2.4.2.1.3. to 5.2.4.2.1.5. shall be published on a special warning label prepared by the holder of the approval. The consumer shall fix the adhesive label in a position adjacent to the seat and visible near to the access to the seat and the door frame.

Instead of an adhesive foil, the holder of the approval may provide a textile mark which shall be fixed during the manufacturing process to the cover. The mark shall be legible and permanent fixed in a position which can be observed by normal entering of the vehicle.

5.2.5. Documentation during the production process

5.2.5.1. The manufacturer of the seat cover pursuant to this Regulation shall guarantee the permanent documentation of the seam manufacturing process. Using a conventional seam, the following parameters shall be recorded:

- specification of the thread,
- length of the sew,
- stitch distance (tolerance of the stitch distance shall not exceed ± 1 mm),
- stitch type,
- thread-force.

The documentation shall relate to each produced part and shall be traceable.

6. TESTS

6.1. Airbag deployment tests

Airbag deployment tests shall be carried out according to the following conditions:

6.1.1. The seat cover may be tested in the original vehicle compartment(s) where at minimum the seat and the interior trim shall be installed. Seat and seatback shall be placed in a medium position (longitudinal/height adjustment of the seat, angular adjustment of the seatback).

6.1.2. Instead of the tests described in paragraph 6.1.1., the seat or seatback shall be fixed to a stiff platform, and a stiff contour of the side wall shall be placed adjacent to the tested seat taking into account the main dimensions of the interior of the tested vehicles. In the absence of such data, the distance between a seat integrated airbag and the wall (door/sidewall simulation) shall be located 100 mm adjacent to the airbag system.

Seat and seatback shall be located in a medium position (longitudinal/height adjustment of the seat, angular adjustment of the seatback).

6.1.3. The deployment shall be activated if it can be guaranteed that the tested object has reached the relevant temperatures of at least $+85$ °C respectively -40 °C. An ambient temperature is a temperature of 22 °C ± 4 °C.

6.1.4. The airbag deployment shall be recorded by a high-speed camera system using a frequency of 2,000 frames per second. The record shall show important details for the evaluation of the correct function of the tested seat cover.

7. CONFORMITY OF PRODUCTION

The conformity of production procedures shall comply with those set out in the Agreement, appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2), with the following requirements:

- 7.1. Every seat cover pursuant to this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set out in paragraph 5. above.
- 7.2. The competent authority which granted type approval may at any time verify the conformity control methods applied for each production unit. The authority may also carry out random checks on serially manufactured seat covers with respect to the requirements set out in paragraph 5. above.

8. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

- 8.1. The approval granted in respect of a seat cover type pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 7.1. above are not complied with, or if the seat cover type fails in the checks prescribed in paragraph 7. above.
- 8.2. If a Contracting Party to the 1958 Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.

9. MODIFICATIONS OF AN ACCESSORY/ADD-ON SEAT COVER TYPE OR A REPLACEMENT SEAT COVER TYPE AND EXTENSION OF APPROVAL

- 9.1. Every modification of a seat cover type approved to this Regulation shall be notified to the administrative department which approved the seat cover type. The department may then either:
 - 9.1.1. consider that the modifications made are unlikely to have an appreciable adverse effect and that in any event the seat cover type still complies with the requirements or;
 - 9.1.2. consider that the modifications are sufficiently unimportant for the results specified in paragraphs 5. and 6. or;
 - 9.1.3. require a further report from the technical service responsible for conducting the tests.
- 9.2. Confirmation or refusal of approval, specifying the modifications, shall be communicated to the Contracting Parties applying this Regulation by means of the procedure laid down in paragraph 4.3. above.

- 9.3. The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.

10. PRODUCTION DEFINITELY DISCONTINUED

- 10.1. If the holder of the approval completely ceases to manufacture a device approved in accordance with this Regulation, he shall so inform the authority which granted the approval. Upon receiving the relevant communication that authority shall inform thereof the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.

11. INSTRUCTIONS FOR USE

- 11.1. For seat covers pursuant to this Regulation, the manufacturers shall provide instructions on how to install, adjust and clean the seat cover pursuant to this Regulation and, where applicable, replace or remove the existing seat cover of the vehicle.

12. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS

The Contracting Parties applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.

Annex 1

COMMUNICATION

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

Issued by:

Name of administration:



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

Concerning: 2/ APPROVAL GRANTED
APPROVAL EXTENDED
APPROVAL REFUSED
APPROVAL WITHDRAWN
PRODUCTION DEFINITELY DISCONTINUED

of an accessory/add-on seat cover type / replacement seat cover type 2/
as a component / separate technical unit 2/ with regard to Regulation No. XXX

Approval No.:

Extension No.:

1. Make (trade name of manufacturer):
2. Type and general commercial description(s):
3. Means of identification of type, if marked on the component / separate technical unit:
2/
- 3.1. Location of that marking:
4. Category of vehicle:
5. Name and address of manufacturer:
6. In the case of components and separate technical units,
location and method of affixing of the ECE approval mark:
7. Address(es) of assembly plant(s):

8. Additional information (where applicable): See Appendix
9. Technical service responsible for carrying out the tests:
10. Date of test report:
11. No. of test report:
12. Remarks (if any): See Appendix
13. Place:
14. Date:
15. Signature:
16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

1/ Distinguishing number of the country which issued/extended/refused/withdrew approval (see Regulation provisions on approval).

2/ Strike out what does not apply.

Annex 1 – Appendix

ADDITIONAL INFORMATION

1. This seat cover can be used on any vehicle type with the following restrictions:
yes / no 1/
- 1.1. Installation and/or connection conditions, if any:
- 1.2. Use or other conditions, if any:
2. This seat cover type can be used only on the following vehicle types:
- 2.1. Installation conditions, if any:
- 2.2. Use or other conditions, if any:
3. Approved/accredited laboratory (for the purpose of this Regulation) responsible for carrying out the tests:
4. Remarks:

1/ Strike out what does not apply and make additional remarks, if necessary.

Annex 2

ARRANGEMENT OF APPROVAL MARKS



The above approval mark affixed to an accessory/add-on or replacement seat cover type shows that the type concerned has been approved in the Netherlands (E 4) pursuant to Regulation No. 1## under approval No. 002439. The approval number indicates that the approval was granted according to the requirements of Regulation No. 1## in its original version (00).

Note: The approval number and additional symbols shall be placed close to the circle and either above or below the letter 'E', or to the right or left of that letter. The digits of the approval number shall be on the same side of the letter 'E' and face in the same direction. The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols."

B. JUSTIFICATION

In Germany, more than 1.5 million seat covers as after market accessories and replacement equipments are being sold every year for front and rear seats of passenger cars. These equipments are sold by both the vehicle manufacturers and the after market suppliers. Since the introduction of the side airbag some accessory manufacturers have developed special seat covers, which are qualified for seats with integrated side airbag e.g. in the seat or in the backrest outside, and which do not impair the function of the airbag.

The German approval authority (KBA) is granting national type approvals for those accessory parts according to national requirements since 1998. However, some after market manufacturers are selling seat covers and seat re-equipments, which do not take into account the function of the airbag or do not prove the proper function of the seat cover. In this case, the protection of the airbag cannot be effective, or even the uncontrolled deployment of the airbag still increases injury risk for the passenger. The driver is often not conscious of this problem.

In order to facilitate the access of the manufacturers of high quality accessory products to the international market without barriers to trade, the development of a new Regulation on accessory/add-on or replacement seat covers intended for the installation in vehicles equipped with or without seat integrated airbag systems is suggested. This item was already discussed in WP.29/AC.2 in March 2005 and was referred to GRSP for further consideration.
