

Proposal for Supplement 2 to the 02 series of amendments to Regulation No. 118 (M₂ and M₃ vehicles)

The text reproduced below was prepared by the expert from Germany. It clarifies the scope and the application of the Regulation. It is based on informal document GRSG-106-17 (see report ECE/TRANS/WP.29/GRSG/85, para. 37) and ECE/TRANS/WP.29/GRSG/2014/24. The modifications to the current text of UN Regulation No. 118 are marked in bold for new characters.

I. Proposal

Contents. 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."

Paragraph 1. amend to read:

"1. Scope

...

Type approvals are granted according to:

- 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 in the vehicle.**
- 1.3. Part II - Approval of a component with regard to its burning behaviour and/or its capability to repel fuel or lubricant installed in the interior compartment, the engine compartment or any separate heating compartment **and with regard to the burning behaviour of electric cables and cable sleeves or cable conduits used in the vehicle.**

Paragraph 5.2. amend to read:

"5.2. Specifications

- 5.2.1. The materials inside and no more than 13 mm beyond the interior compartment, materials of the engine compartment, **and** materials of any separate heating compartment **and electric cables and 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.
- 5.2.3. Such materials and/or equipment shall only be installed in accordance with their intended purposes and the test(s) which they have undergone (see paragraphs 6.2.1., 6.2.2., 6.2.3., 6.2.4., 6.2.5., 6.2.6. and 6.2.7.), especially in relation to their burning and melting behaviour (horizontal/vertical direction) and/or their capability to repel fuel or lubricant."

Part II, paragraph 6.2.7., amend to read:

- "6.2.7.4. 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.**"

Part II, paragraph 6.2.6., amend to read:

- "6.2.6. **Any Eelectric cables (e.g. single-core, multi-core, screened, unscreened, sheathed cables) exceeding a length of 100 mm used in the vehicle** shall undergo the resistance to flame propagation test described in ~~6722:2006, paragraph 12~~ **ISO 6722-1:2011, paragraph 5.22.**

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.

Any cable sleeves or cable conduits exceeding a length of 100 mm shall undergo the test to determine the burning rate of materials as specified in Annex 8."

II. Justification

1. The current text of UN Regulation No. 118 on the burning behaviour of electric cables has led to discussions and different interpretations of the provisions. One interpretation is that the requirement would have to be applied only to those electric cables as covered by ISO 6722. This was neither the intention of the original proposal nor would it ensure a better protection against fire.
 2. As the aim is to test any cable (e.g. single-core, multi-core, screened, unscreened, sheathed cables), not only those dealt with in ISO 6722, the new wording clarifies the application.
 3. Furthermore the proposal clarifies the application to any cable used in the entire vehicle, not only those in the interior compartment, engine compartment and separate heater compartment and it introduces requirements regarding cable sleeves or cable conduits to form a cable harness as these materials might considerably contribute to fire propagation.
 4. In paragraph 6.2.6. of UN Regulation No. 118, the reference to the cable test according to paragraph 12. of ISO 6722 is outdated. The correct reference is paragraph 5.22. of ISO 6722-1:2011.
 5. In paragraph 6.2.6. it is proposed to apply the tests for electric cables, cable sleeves and cable conduits to those materials that exceed a length of 100 mm.
 6. As short electric cables, cable sleeves and cable conduits fitted to components like e.g. alternators, starters, control devices, etc. have no significant effect on the fire propagation, it seems justified to focus on those materials exceeding a length of 100 mm.
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