Extended justifications to document GRSG/2014/24 - Regulation No. 118 (burning behaviour)

GRSG-106 requested OICA to provide clear information on the changes proposed per document ECE/TRANS/WP.29/GRSG/2014/24.

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ISO 6722-1:2011 (excerpt):

5.22 Resistance to flame propagation

5.22.1 Purpose
This test is intended to verify that a cable should not sustain combustion.

5.22.2 Test sample
Prepare five test samples with at least 600 mm of insulation.

5.22.3 Test
Determine the resistance to flame propagation using a Bunsen burner fed with 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 +/- 50) °C.

ISO 6722:2006 (excerpt):

12 Resistance to flame propagation

12.1 Test sample
Prepare a test sample with at least 600 mm of insulation.

12.2 Apparatus
Determine the resistance to flame propagation using a Bunsen burner fed with appropriate gas, having a combustion tube of 9 mm internal diameter and a flame height of 100 mm. The length of the inner blue cone of the flame shall be 50 mm.

Dimensions in millimetres

Key
1 test sample
2 Bunsen burner
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 10. 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. Finish the exposure to the test flame when the conductor becomes visible, or after 15 s for cables with conductor sizes ≤ 2.5 mm² and 30 s for cables with conductor sizes > 2.5 mm². Remove the flame sideways from the cable after exposure.

### 5.22.4 Requirement

Any combustion flame of insulating material shall extinguish within 70 s from the end of ignition and a minimum of 50 mm of insulation at the top of the test samples shall remain unburned. All five samples shall pass the test.