Submitted by the expert from OICA

Informal document **GRSG-107-18**
(107th GRSG, 30 September- 3 October 2014
agenda item 18)

# 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.

## ISO 6722-1:2011 (excerpt):

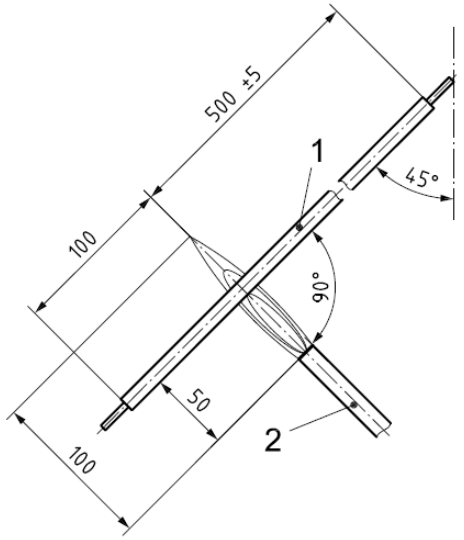
**5.22 Resistance to flame propagation**

**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.

Dimensions in millimetres




**Key**
1 test sample
2 Bunsen burner

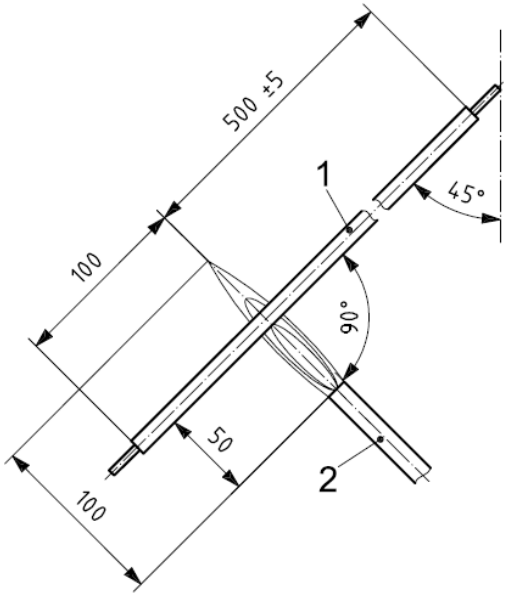
## ISO 6722:2006 (excerpt):

**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

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|---|---|
| **Figure 10 — Apparatus for resistance to flame propagation**<br><br>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° ± 1° 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.<br><br>**5.22.4 Requirement**<br><br>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. | **Figure 10 — Apparatus for resistance to flame propagation**<br><br>**12.3 Procedure**<br>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. Apply the flame (500 ± 5) mm from the upper end of the insulation. Finish the exposure to the flame when the conductor becomes visible, or after 15 s for test samples with conductor sizes u 2,5 mm2 and 30 s for test samples with conductor sizes > 2,5 mm2.<br><br>**12.4 Requirement**<br>Any combustion flame of insulating material shall extinguish within 70 s and a minimum of 50 mm of insulation at the top of the test sample shall remain unburned. |