

5 November 2012

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## 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\***

(Revision 2, including the amendments which entered into force on 16 October 1995)

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## **Addendum 15: Regulation No. 16**

### **Revision 7 - Erratum 1**

Corrigendum 1 to Revision 7 of the Regulation

#### **Uniform provisions concerning the approval of:**

- I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles**
- II. Vehicles equipped with safety-belts, safety-belt reminder, restraint systems, child restraint systems and ISOFIX child restraint systems**



**UNITED NATIONS**

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\* Former title of the Agreement: Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

*Paragraph 6.2.2.2., correct to read:*

"6.2.2.2. The buckle, even when not under tension, shall remain closed whatever the position of the vehicle. It shall not be possible to release the buckle inadvertently, accidentally or with a force of less than 1 daN. The buckle shall be easy to use and to grasp; when it is not under tension and when under the tension specified in paragraph 7.8.2. below, it shall be capable of being released by the wearer with a single simple movement of one hand in one direction; in addition, in the case of belt assemblies intended to be used for the front outboard seats, except in these harness belts, it shall also be capable of being engaged by the wearer with a simple movement of one hand in one direction. The buckle shall be released by pressing either a button or a similar device. The surface to which this pressure is applied shall have the following dimensions, with the button in the actual release position and when projected into a plane perpendicular to the button's initial direction of motion: for enclosed buttons, an area of not less than 4.5 cm<sup>2</sup> and a width of not less than 15 mm; for non-enclosed buttons, an area of not less than 2.5 cm<sup>2</sup> and a width of not less than 10 mm. The buckle release area shall be coloured red. No other part of the buckle shall be of this colour. When the seat is occupied, red warning light in any part of the buckle is permitted if it is switched off after the occupant has buckled."

*Paragraph 7.2.1., correct to read:*

"7.2.1. A complete safety-belt assembly shall be positioned in a test chamber as prescribed in Annex 12 to this Regulation. In the case of an assembly incorporating a retractor, the strap shall be unwound to full length less 300 ± 3 mm. Except for short interruptions that may be necessary, for example, to check and replenish the salt solution, the exposure test shall proceed continuously for a period of 50 hours."

*Paragraph 7.3.1., correct to read:*

"7.3.1. The samples to be submitted to the micro-slip test shall be kept for a minimum of 24 hours in an atmosphere having a temperature of 20 ± 5 °C and a relative humidity of 65 ± 5 per cent. The test shall be carried out at a temperature between 15 and 30 °C."

*Paragraph 7.3.3., correct to read:*

"7.3.3. A 5 daN load shall be attached to the lower end of the section of strap. The other end shall be subjected to a back and forth motion, the total amplitude being 300 ± 20 mm (see figure)."

*Paragraph 7.3.7., correct to read:*

"7.3.7. 1,000 cycles shall be completed at a frequency of 0.5 cycles per second, the total amplitude being 300 ± 20 mm. The 5 daN load shall be applied only during the time corresponding to a shift of 100 ± 20 mm for each half period."

*Paragraph 7.4.1.3.2., correct to read:*

"7.4.1.3.2. The strap shall then be kept for one and a half hours on a plane surface in a low-temperature chamber in which the air temperature is -30 ± 5 °C. It shall then be folded and the fold shall be loaded with a mass of 2 kg previously cooled to -30 ± 5 °C. When the strap has been kept under load for 30 minutes in the same low-temperature chamber, the mass shall be removed and the breaking load shall be measured within 5 minutes after removal of the strap from the low-temperature chamber."

*Paragraph 7.4.1.4.1., correct to read:*

"7.4.1.4.1. The strap shall be kept for three hours in a heating cabinet in an atmosphere having a temperature of  $60 \pm 5$  °C and a relative humidity of  $65 \pm 5$  per cent."

*Paragraph 7.4.1.5.1., correct to read:*

"7.4.1.5.1. The strap shall be kept fully immersed for three hours in distilled water, at a temperature of  $20 \pm 5$  °C, to which a trace of a wetting agent has been added. Any wetting agent suitable for the fibre under test may be used."

*Paragraph 7.4.2.2., correct to read:*

"7.4.2.2. Each strap shall be gripped between the clamps of a tensile-testing machine. The clamps shall be so designed as to avoid breakage of the strap at or near them. The speed of traverse shall be about 100 mm/min. The free length of the specimen between the clamps of the machine at the start of the test shall be  $200 \text{ mm} \pm 40 \text{ mm}$ ."

*Paragraphs 7.5.3. and 7.5.4., correct to read:*

"7.5.3. Two samples of the complete belt assembly shall be placed in a refrigerated cabinet at  $-10^\circ \pm 1$  °C for two hours. The mating parts of the buckle shall be coupled together manually immediately after being removed from the refrigerated cabinet.

7.5.4. Two samples of complete belt assembly shall be placed in a refrigerated cabinet at  $-10^\circ \text{C} \pm 1^\circ \text{C}$  for two hours. The rigid items and parts made of plastics under test shall then be laid in turn upon a flat rigid steel surface (which has been kept with the samples in the refrigerated cabinet) placed on the horizontal surface of a compact rigid block with a mass of at least 100 kg and within 30 seconds of being removed from the refrigerated cabinet, an 18 kg steel mass shall be allowed to fall under gravity through 300 mm on to the test sample. The impact face of the 18 kg mass shall take the form of a convex surface with a hardness of at least 45 HRC having a transverse radius of 10 mm and a longitudinal radius of 150 mm placed along the centre line of the mass. One test sample shall be tested with the axis of the curved bar in line with the strap and the other sample shall be tested at  $90^\circ$  to the strap."

*Paragraph 7.6.2.1., correct to read:*

"7.6.2.1. The retractor shall be tested once for locking when the strap has been unwound to full length less  $300 \pm 3$  mm."

*Paragraph 7.6.3.1., correct to read:*

"7.6.3.1. The retractor shall be positioned in a test chamber as described in Annex 5 to this Regulation. It shall be mounted in an orientation similar to that in which it is mounted in the vehicle. The test chamber shall contain dust as specified in paragraph 7.6.3.2. below. A length of 500 mm of the strap shall be extracted from the retractor and kept extracted, except that it shall be subjected to 10 complete cycles of retraction and withdrawal within one or two minutes after each agitation of the dust. For a period of five hours, the dust shall be agitated every 20 minutes for five seconds by compressed air free of oil and moisture at a gauge pressure of  $5.5 \cdot 10^5 \text{ Pa} \pm 0.5 \cdot 10^5 \text{ Pa}$  entering through an orifice,  $1.5 \pm 0.1$  mm in diameter."

*Paragraph 7.8.2.*, correct to read:

- "7.8.2. The belt assembly shall be removed from the test trolley without the buckle being opened. A load shall be applied to the buckle by direct traction via the straps tied to it so that all the straps are subjected to the force of  $\frac{60}{n}$  daN. (It is understood that n is the number of straps linked to the buckle when it is in a locked position.) In the case where the buckle is connected to a rigid part, the load shall be applied at the same angle as the one formed by the buckle and the rigid end during the dynamic test. A load shall be applied at a speed of  $400 \pm 20$  mm/min to the geometric centre of the buckle-release button along a fixed axis running parallel to the initial direction of motion of the button. During the application of the force needed to open the buckle, the buckle shall be held by a rigid support. The load quoted above shall not exceed the limit indicated in paragraph 6.2.2.5. above. The point of contact of the test equipment shall be spherical in form with a radius of  $2.5 \text{ mm} \pm 0.1 \text{ mm}$ . It shall have a polished metal surface."

*Paragraph 7.9.1.*, correct to read:

- "7.9.1. Conditioning  
The pre-loading device may be separated from the safety-belt to be tested and kept for 24 hours at a temperature of  $60^\circ \pm 5^\circ \text{C}$ . The temperature shall then be raised to  $100^\circ \pm 5^\circ \text{C}$  for two hours. Subsequently it shall be kept for 24 hours at a temperature of  $-30^\circ \pm 5^\circ \text{C}$ . After being removed from conditioning, the device shall warm up to ambient temperature. If it has been separated it shall be fitted again to the safety-belt."

*Annex 6,*

*Paragraph 4.3.*, correct to read:

- "4.3. The characteristics of the absorbing material are given in Table 1 of this annex. Immediately before each test the tubes shall be conditioned at a temperature between  $15^\circ$  and  $25^\circ \text{C}$  for at least 12 hours without being used. During the dynamic testing of safety-belts or restraint systems, the stopping device shall be at the same temperature as during the calibration test, with a tolerance of  $\pm 2^\circ \text{C}$ . The requirements to be met by the stopping device are given in Annex 8 to this Regulation. Any other device giving equivalent results may be used."

*Annex 12,*

*Paragraph 3.1.*, correct to read:

- "3.1. The salt solution shall be prepared by dissolving  $5 \pm 1$  parts by mass of sodium chloride in 95 parts of distilled water. The salt shall be sodium chloride substantially free of nickel and copper and containing on the dry basis not more than 0.1 per cent of sodium iodide and not more than 0.3 per cent of total impurities."

*Paragraph 5.1.*, correct to read:

- "5.1. The exposure zone of the mist chamber shall be maintained at  $35 \pm 5^\circ \text{C}$ . At least two clean mist collectors shall be placed within the exposure zone so that no drops of solution from the test samples or any other sources are collected. The collectors shall be placed near the test samples, one nearest to any nozzle and one furthest from all nozzles. The mist shall be such that for

each 80 cm<sup>2</sup> of horizontal collecting areas, there is collected in each collector from 1.0 to 2.0 ml of solution per hour when measured over an average of at least 16 hours."

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