

Proposal for amendments to Regulation No. 28 (Uniform provisions concerning the approval of audible warning devices and of motor vehicles with regard to their audible signals)

Note: The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA), in order to propose amendments to UNECE Regulation No. 28. Modifications to the text are marked in bold characters for new or as strikethrough for deleted text.

I. Proposal

Para. 14.4, amend to read:

- 14.1. The A-weighted sound pressure level emitted by the device(s) fitted on the vehicle shall be measured at a distance of 7 m in front of the vehicle, the latter being placed on an open site ^{2/}, on ground as smooth as possible, and, in case of devices supplied with direct current, with its engine stopped. **If the test voltage as specified in paragraph 6.2.3. cannot be reached, the test shall be performed on the vehicle with its engine warmed-up and at idle.**

Para. 14.8.2, amend to read:

- 14.2. Measured under the conditions specified in paragraphs 14.2 to 14.7, the maximum sound pressure level (14.7) of the audible warning signal tested shall be at least:
- 14.3. equal to 83 dB (A) and most 112 dB (A) for the signals of motor cycles of a power less than or equal to 7 kW.
- 14.4. equal to ~~93~~ **90** dB (A) and most 112 dB (A) for the signals of vehicles of category M and N 1/ and motor cycles of a power greater than 7 kW.

II. Justification

1. The test voltages as specifies in 14.2 respectively in 6.2.3 cannot be reached by the vehicles internal battery alone. The representative voltage for the operation of the horn is approximately reached, if the vehicle is warmed-up and can run at idle. Idle noise will not interfere with the measurement as it is more than 20 dB below the minimum required sound level.

2. A reduced sound level is justified, because this level is far enough to instantaneously warn pedestrians and other road users as it is typically 20 dB to 40 dB higher compared typical traffic noise. It would bring another small contribution to lower environmental noises. It is as well sufficient for vehicle-to-vehicle warning as the typical sound insulation of vehicles still provides enough transparency to make the horn sound audible inside a vehicle.

III. Excerpt of ECE R28 (Paragraphs 6.2.3 and 14 consolidated)

6.2.3 The AWD shall be supplied with current, as appropriate at the following voltages:

6.2.3.1 in the case of AWDs supplied with direct current, at a voltage measured at the terminal of the electric power source of 13/12 of the rated voltage.

6.2.3.2 in the case of AWDs supplied with alternating current, the current shall be supplied by an electric generator of the type normally used with this type of AWD. The acoustic characteristics of the AWD shall be recorded for electric generator speeds corresponding to 50%, 75% and 100% of the maximum speed indicated by the manufacturer of the generator for continuous operation. During this test, no other electrical load shall be imposed on the electric generator. The endurance test described in paragraph 6.3 shall be carried out at a speed indicated by the manufacturer of the equipment and selected from the above range.

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14. SPECIFICATIONS

The vehicle shall comply with the following specifications:

- 14.1. The audible warning device(s) (or system) fitted on the vehicle shall be of a type approved under this Regulation;
Audible warning Devices of class II approved under this Regulation in its original form, and therefore not bearing the approval symbol II in their approval mark, may continue to be fitted to vehicles types submitted for approval pursuant to this Regulation.
- 14.2. The test voltage shall be as specified in paragraph 6.2.3. of the Regulation;
- 14.3. The sound pressure measurements shall be made in the conditions specified in paragraph 6.2.2 of this Regulation;
- 14.4. The A-weighted sound pressure level emitted by the device(s) fitted on the vehicle shall be measured at a distance of 7 m in front of the vehicle, the latter being placed on an open site 2/, on ground as smooth as possible, and, in case of devices supplied with direct current, with its engine stopped;
- 14.5. The microphone of the measuring instrument shall be placed approximately in the mean longitudinal plane of the vehicle;
- 14.6. The sound pressure level of the background noise and wind noise must be at least 10 dB (A) below the sound to be measured;
- 14.7. The maximum sound-pressure level shall be sought within the range of 0.5 and 1.5 m above the ground;
- 14.8. Measured under the conditions specified in paragraphs 14.2 to 14.7, the maximum sound pressure level (14.7) of the audible warning signal tested shall be at least:
 - 14.8.1. equal to 83 dB (A) and most 112 dB (A) for the signals of motor cycles of a power less than or equal to 7 kW.
 - 14.8.2. equal to 93 dB (A) and most 112 dB (A) for the signals of vehicles of category M and N 1/ and motor cycles of a power greater than 7 kW.