

Proposal for amendments to the 06 series of amendments to Regulation No. 16 (Safety-belt)

The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal

Paragraph 1.4, amend to read and delete its footnote 2:

1.4. Vehicles of categories ~~M₁~~ **M and N** with regard to safety belt reminder.²

²~~Japan shall not be prevented, by the obligations of the Agreement to which this Regulation is annexed, from requiring vehicles of category N₁, which are granted type approvals under this regulation to meet its existing national requirements for safety belt reminders.~~

Paragraph 2.41 to 2.47, amend to read:

- 2.41. "Safety-belt reminder", means a system dedicated to alert the driver when ~~he/she~~ **any of the occupants** does not use the safety-belt. The system is constituted by a detection of an unfastened safety-belt and by two levels of driver's alert: a first level warning and a second level warning.
- 2.42. "Visual warning" means a warning by visual signal (lighting, blinking or visual display of symbol or message).
- 2.43. "Audible warning" means a warning by sound signal.
- 2.44. "First level warning" means a visual warning activated when the ignition switch **or master control switch** is ~~engaged~~ **activated** ~~(engine running or not)~~ and ~~the driver's~~ **any of the occupants'** safety-belt is not fastened. An audible warning can be added as an option.
- 2.45. "Second level warning" means a visual and audible warning activated when ~~a driver operates a~~ **the vehicle is operated** without ~~fastening~~ **fastening the safety-belt for any of the occupants being fastened.**
- 2.46. "Safety-belt is not fastened" means, at the option of the manufacturer, either the ~~driver~~ safety-belt buckle **of any occupants** is not engaged or the webbing length pulled out of the retractor is 100 mm or less.
- 2.47. "Vehicle is in normal operation" means that vehicle is in forward motion at the speed greater than 10 km/h.

Paragraph 8.4, amend to read and insert new paragraphs:

8.4. Safety-belt reminder equipment

8.4.1. ~~The driver seating position of the M₁ category of vehicles,¹⁰ shall be equipped with a safety belt reminder satisfying the requirements of this Regulation. Where the vehicle manufacturer provides a safety belt reminder system on the driver seat in another category of vehicle, the safety belt reminder system may be approved according to this Regulation.¹¹~~

Safety-belt reminder equipment

8.4.1.1. ~~Contracting Parties may allow deactivation of the safety belt reminder provided that such deactivation satisfies to the requirements of paragraph 8.4.2.6. below.~~

The seating position of the driver of M and N categories of vehicles¹⁰ as well as the seating positions of the occupants of seats in the same row as the driver seat of [M and N] categories of vehicles shall be equipped with a safety-belt reminder satisfying the requirements of paragraph 8.4.2.

[Where the vehicle manufacturer provides a safety-belt reminder system on a front passenger seat in another category of vehicle, the safety-belt reminder system may be approved according to this Regulation.¹¹]

8.4.1.2. **All seating positions of the rear seat row(s) of M1 [and N1] category vehicles¹⁰ shall be equipped with a safety-belt reminder satisfying the requirements of paragraph 8.4.2.**

Where the vehicle manufacturer provides a safety-belt reminder system on a rear seating position in another category of vehicle, the safety-belt reminder system may be approved according to this Regulation.

[8.4.1.3. A safety-belt reminder is not compulsory on folding seats (i.e. normally folded and designed for occasional use) and removable seats as well as seating positions fitted with an S-type belt or Harness belt.]

8.4.1.4. **Contracting Parties may allow deactivation of the safety-belt reminder provided that such deactivation satisfies the requirements of paragraph 8.4.2.6.**

8.4.2. Safety-belt reminder

8.4.2.1. General requirements

8.4.2.1.1. ~~Visual warning shall be so located as to be readily visible and recognisable in the daylight by the driver and distinguishable from other alerts. **The visual signal warning shall employ the colour red for unfastened condition of safety-belts covered by paragraph 8.4.1.1. and 8.4.1.2. it shall use a symbol in accordance with item 21 in Table 1 of ECE Regulation No. 121.**~~

¹⁰

¹⁰ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.3, para. 2 - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

¹¹ While the current requirements for a safety-belt reminder is limited to ~~the driver's~~ **certain** seats of ~~vehicles category M₁~~, it is understood that the scope of this Regulation will be extended to vehicles of other categories and to other seating positions. In recognition of the importance of human factors, the delivery of driver stimuli, future safety-belt reminder requirements demanded by this Regulation will seek a harmonized convergence of the alert systems.



~~(item K.01 – ISO 2575:2000) or,~~



- 8.4.2.1.2. Visual warning shall be by continuous (e.g. steady or flashing tell-tale) ~~or intermittent signal.~~
- 8.4.2.1.3. ~~Audible warning shall be by continuous or intermittent sound signal or by vocal information. Where vocal information is employed, the manufacturer shall ensure that the alert uses the language(s) of the market into which the vehicle is sold. This audible warning may be constituted by more than one step.~~
- A common tell-tale may be used for safety-belts covered by paragraph 8.4.1.1. However, for safety-belts covered by paragraph 8.4.1.2, the visual warning shall allow the driver to identify, while facing forward as seated on the driver seat, any relevant seating position in which the safety-belt is not fastened.**
- 8.4.2.1.4. ~~Audible warning shall be easily recognized by the driver.~~
- Audible warning shall be by continuous or intermittent, yet frequent, sound signal or by continuous vocal information. Where vocal information is employed, the vehicle manufacturer shall ensure that the alert is enabled to employ the languages of the market into which the vehicle is intended to be used. [The audible warning may employ progressive steps, provided that they are ascending in nature and the sound level as measured at the driver's ears is at least [80] dB(A) within [15] seconds of activation].**
- 8.4.2.2. ~~The first level warning shall be at least a visual warning activated for [4 or 30] seconds or longer for safety-belts covered by paragraph 8.4.1.1. and for [60] seconds or longer for safety-belts covered by paragraph 8.4.1.2. when the driver safety-belt of any of the relevant seats is not fastened and the ignition switch or master control switch is engaged/activated.~~
- 8.4.2.3. The activation of the first level warning shall be tested according to the test procedure defined in Annex 18, paragraph 1.
- 8.4.2.4. Second level warning shall be a visual and audible signal activated for **[unlimited duration or 30 seconds or longer]** except for ~~eases periods~~ in which the warning may stop for **up to [3 or 10] seconds within a [60] second timeframe** when the safety belt is not fastened, when the vehicle is in normal operation and when at least one of the following conditions (or any combination of these conditions), **either one or all of the conditions set out in paragraphs 8.4.2.4.1. and 8.4.2.4.2. is/are fulfilled:**
- 8.4.2.4.1. ~~Distance driven greater than the distance threshold. The threshold shall not exceed 500 m. The distance the vehicle is not in normal operation shall be excluded.~~
- When a safety-belt covered by paragraph 8.4.1.1. is or becomes unfastened, for both scenarios, when the vehicle is in normal operation and under one or any combination of the conditions set out in paragraphs 8.4.2.4.2.1. to 8.4.2.4.2.3.**
- 8.4.2.4.2. ~~Speed greater than the speed threshold. The threshold shall not exceed 25 km/h.~~

When a safety-belt covered by paragraph 8.4.1.2. becomes unfastened, when the vehicle is in normal operation and under one or any combination of the conditions set out in paragraphs 8.4.2.4.2.1. to 8.4.2.4.2.3.

- 8.4.2.4.2.1. The distance driven is greater than the distance threshold. The threshold shall not exceed 500 m. The distance driven when the vehicle is not in normal operation shall be excluded.
- 8.4.2.4.2.2. The vehicle speed is greater than the speed threshold. The threshold shall not exceed 25 km/h.
- 8.4.2.4.2.3. The duration time (engine running, propulsion system activated, etc.) is greater than the duration time threshold. The threshold shall not exceed 60 seconds. The first level warning duration time and the duration time when the vehicle is not in normal operation shall be excluded.
- ~~8.4.2.4.3. Duration time (engine running) greater than the duration time threshold. The threshold shall not exceed 60 seconds. The first level warning duration time and the duration time the vehicle is not in normal operation shall be excluded.~~
- 8.4.2.5. The activation of the second level warning shall be tested according to the test procedure defined in Annex 18, paragraph 2.
- 8.4.2.6. The **audible warning of a safety-belt reminder** may be designed to allow deactivation.
- 8.4.2.6.1. In the case of a short term deactivation is provided, it shall be **significantly** more difficult to deactivate the safety-belt reminder than buckling the safety-belt on and off (**i.e. it shall consist of an operation of specific controls that are not integrated in the safety-belt buckle**) and **this operation shall only be possible with the vehicle stationary**. When the ignition or master control switch is ~~switched off~~ **deactivated** for more than 30 minutes and ~~switched on~~ **activated** again, a short-term deactivated safety-belt reminder shall reactivate. **It shall not be possible to provide short term deactivation of the relevant visual warning(s).**
- 8.4.2.6.2. In the case that a facility for a long term deactivation is provided, it shall require a sequence of operations to deactivate, that are detailed only in the manufacturer's technical manual and/or which requires the use of tools (mechanical, electrical, digital, etc.) that are not provided with the vehicle. **It shall not be possible to provide long term deactivation of the relevant visual warning(s).**

Annex 18, amend to read and insert new paragraphs:

- 1. The first level warning shall be tested according to the following conditions:
 - (a) Safety-belt is not fastened;
 - (b) Engine **or propulsion system** is stopped or idling, and the vehicle is not in forward or reverse motion;
 - (c) Transmission is in neutral position;
 - (d) Ignition switch **or master control switch** is ~~engaged~~ **deactivated**.

(e) A load of [40] kg is put on each seat in the same row as the driver's seat, or the state in which occupants are on board the vehicle is simulated by an alternative method specified by the vehicle manufacturer, provided the occupant's load does not exceed [40] kg. This may also be done for the rear seats at the request of the vehicle manufacturer.

2. The second level warning shall be tested according to the following conditions **set out in paragraph 2.1. to 2.3. of this Annex, respectively.**

(a) ~~Safety belt is not fastened;~~

(b) ~~Test vehicle driven with one or any combination of the conditions of paragraphs 2.1. to 2.3. of this annex at the manufacturer's choice.~~

2.1. ~~Accelerate the test vehicle to 25 -0/+10 km/h from a halt and continue on the same speed.~~

Testing the driver's seating position

2.1.1. Testing the driver's seat when the safety-belt is unfastened before the journey

(a) **The safety-belt of the driver's seat is not fastened;**

(b) **The safety-belts of seats other than the driver's seat are fastened;**

(c) **Test vehicle driven with one or any combination of the conditions of paragraphs 2.1.1.1 to 2.1.1.3. of this annex at the manufacturer's choice.**

2.1.1.1. Accelerate the test vehicle to 25 -0/+10 km/h from a halt and continue on the same speed.

2.1.1.2. The test vehicle is driven forward at least 500 m from a halt position.

2.1.1.3. The vehicle is tested when the vehicle is in normal operation for at least 60 seconds.

2.1.2. Testing the driver's seat when the safety-belt becomes unbuckled during the journey.

(a) **The safety-belts of the driver's seat and seats other than the driver's seat are fastened.**

(b) **The test vehicle is driven, at the choice of the manufacturer, under one of the conditions in 2.1.1.1. to 2.1.1.3. of this annex or combination thereof;**

(c) **The safety -belt of the driver's seat is unbuckled.**

2.2. ~~The test vehicle is driven forward at least 500 m from a halt position.~~

Testing the seating position(s) in the same row as the driver's seat

2.2.1. Testing the seat(s) in the same row as the driver's seat when the safety-belt is unfastened before the journey

(a) **The safety-belt(s) of the seat(s) in the same row as the driver's seat is/are not fastened;**

(b) The safety-belts of the seats other than the seat(s) in the same row as the driver's seat are fastened;

(c) A load of [40] kg is applied to the seat(s) in the same row as the driver's seat, or the state in which occupants are onboard the vehicle is simulated by a method specified by the manufacturer;

(d) The test vehicle is driven, at the choice of the manufacturer, under one of the conditions in 2.1.1.1. to 2.1.1.3. of this annex or combination thereof;

(e) The state of the safety-belt reminder is checked for all of the seat(s) in the same row as the driver's seat, in conditions (a) to (d).

2.2.2. **Testing the seating position in the same row as the driver's seat when the safety-belt becomes unbuckled during the journey.**

(a) The safety-belts of the driver's seat and seats other than the driver's seat are fastened;

(b) A load of [40] kg is applied to the seat(s) in the same row as the driver's seat, or the state in which occupants are onboard the vehicle is simulated by a method specified by the manufacturer;

(c) The test vehicle is driven, at the choice of the manufacturer, under one of the conditions in 2.1.1.1. to 2.1.1.3. of this annex or combination thereof;

(d) The safety –belt of the seats other than the seat(s) in the same row as the driver's seat is unbuckled.

(e) The state of the safety-belt reminder is checked for all of the seat(s) in the same row as the driver's seat, in conditions (a) to (d).

2.3. ~~The vehicle is tested when the vehicle is in normal operation for at least 60 seconds.~~

Testing the rear seats

(a) With the test vehicle stationary, the safety-belts of all seats are fastened;

(b) The test vehicle is put in normal operation and kept running;

(c) The safety-belt of one of the rear seats is unfastened;

(d) The functioning of the safety-belt reminder is checked for all of the seating positions in all seating rows.

3. ~~In case of aA system that for which the first level warning stops after a certain period of time, the second level warning shall be tested according to paragraph 2. of this Annex after the first level warning has been deactivated.~~ **In case of aA system that for which the first level warning does not stop after a certain period of time, the second level warning shall be tested according to in accordance with paragraph 2. of this Annex while the first level warning is activated.**

II. Justification

1. It is widely recognised that the safety-belt is one of the most important and effective vehicle safety features.
2. Nevertheless, actual safety-belt wearing rates vary greatly between countries and also differs between front and rear seating positions, as is explained in the presentation also provided at this session of GRSP.
3. In Japan, rear seat safety-belt use can be as low as 35.1%.
4. When the effective SBR is made mandatory for all passenger car seats, an expected 150 lives can be saved annually in Japan.
5. In Korea, seat safety-belt use is generally between 80% and 90% on front seats, but even as low as 16.2% on rear seats.
6. In 2013, 310 persons not wearing a safety-belt died in cars in Korea, and over 18,000 persons not wearing safety-belts were injured.
7. The European Commission has published a study that quantifies the casualty benefit of legislative action on SBRs for all M and N vehicles by comparing a baseline, i.e. “do nothing” scenario, with an action scenario which involved mandating SBRs.
8. The relevant findings, including Benefit-to-Cost ratios, can be found in the report available here:
<http://ec.europa.eu/DocsRoom/documents/6662/attachments/1/translations/en/renditions/pdf>