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Item 4.8.6 of the provisional agenda

1958 Agreement:

Consideration of draft amendments to existing

UN Regulations submitted by GRE

Proposal for Supplement 2 to the 09 series of amendments to UN Regulation No. 48 (Installation of Lighting and Light- Signalling Devices)

Submitted by the Working Party on Lighting and Light-Signalling*

The text reproduced below was adopted by the Working Party on Lighting and Light-Signalling (GRE) at its ninety-second session (ECE/TRANS/WP.29/GRE/92, paras. 16, 17, 18, 19 and 23). It is based on ECE/TRANS/WP.29/GRE/2025/4 and GRE-92-31, ECE/TRANS/WP.29/GRE/2025/5 as amended by GRE-92-10-Rev.1, ECE/TRANS/WP.29/GRE/2025/6, ECE/TRANS/WP.29/GRE/2025/7 and ECE/TRANS/WP.29/GRE/2024/20/Rev.1 as amended by GRE-92-32. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their November 2025 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraph 2.5.19., amend to read:

"2.5.19. "Manoeuvring lamp" means a lamp used to provide supplementary illumination to the side and/or the rear of the vehicle to assist during slow manoeuvres."

Insert a new paragraph 2.5.21. to read:

"2.5.21. "Reversing projector" means a device used to provide reversing projection."

Insert new paragraphs 2.7.10. to 2.7.11., to read:

"2.7.10. "Basic element" of a reversing projection means the single shape composing the projected patterns."

"2.7.11. "Reversing projection" means light signal projected on the ground by reversing projectors to provide enhanced recognition of reversing indication to other road users."

Insert a new paragraph 5.9.5., to read:

"5.9.5. Reversing projection may vary according to the steering wheel angle and/or the speed of the vehicle and/or the proximity to an obstacle."

Paragraph 5.10.3., amend to read:

"5.10.3. No account shall be taken of lighting devices fitted for the interior lighting of the vehicle nor of reversing projections."

Paragraph 5.15., amend to read:

"5.15. The colours of the light emitted by the lamps are the following:

Main-beam headlamp:	White
...	...
Answer-back signal:	In accordance with the individual specifications applicable to the specific lamp used for the answer-back signal.
Reversing projection:	White"

Insert a new paragraph 5.36. and related sub-paragraphs, to read:

"5.36. General provision relating to reversing projection.

5.36.1. The patterns shall be explained in the owner's handbook.

5.36.2. When reversing projection are provided,

5.36.2.1. only the basic elements listed in Annex 17 shall be used;

5.36.2.2. the pattern of each projection shall be constituted by one or more basic element(s) of the same type in a line;

5.36.2.3. the number, size, ratio and the spacing between the basic elements in the pattern are not restricted, provided that the requirements of paragraph 6.28.5. are met.

5.36.3. The light transmitted downwards by light-signalling devices is not considered a reversing projection.

5.36.4. When more than one projection is switched ON simultaneously, the projected patterns shall not overlap each other."

5.36.5. When the windshield wiper is switched ON and its continuous operation has occurred for a period of at least two minutes, the reversing projection(s) whose luminous intensity exceeds $8.00 \cdot 10^3$ cd shall either be switched OFF, or have its luminous intensity reduced to a value less than or equal to $8.00 \cdot 10^3$ cd. The conformity to this requirement shall be verified at the time of the reversing projector type approval and indicated in the related communication form.

- 5.36.6. The applicant shall provide sufficient evidence that the reversing projection will not negatively affect rear camera system performance as defined in UN Regulation No. 158.”

Paragraph 6.12.1. amend to read:

- "6.12.1. Presence

On motor vehicles not exceeding 6m in length, optional.

On all other vehicles, prohibited."

Paragraph 6.17.4.3., first indent, amend to read:

- "6.17.4.3. In length: at least one side retro-reflector shall be fitted to the middle third of the vehicle, the foremost side retro-reflector being not further than 3 m (4 m for semi-trailers) from the front.

..."

Paragraph 6.26.2., amend to read:

- "6.26.2. Number

Side mounted:

One or two (one per side) on vehicles not exceeding 6m in length.

A maximum of four (up to two per side) on vehicles above 6m and up to and including 9m in length.

A maximum of six (up to three per side) on vehicles exceeding 9m in length.

Rear mounted:

One.

However, installed lamps (mounted to the side or rear) shall be type-approved according to the 00 or subsequent series of amendments to UN Regulation No. 23, or to the 00 or subsequent series of amendments to UN Regulation No. 148."

Paragraph, 6.26.4.2., amend to read:

- "6.26.4.2. In height:

Side mounted: above the ground, not more than 1,500mm.

Rear mounted: no higher than the vehicle."

Paragraph, 6.26.4.3., amend to read:

- "6.26.4.3. In length:

Side mounted: In the case of the installation of more than one manoeuvring lamp, lamps shall be mounted as symmetrically as practicable along each side of the vehicle.

The distance between two adjacent manoeuvring lamps on the same side shall not be less than 0.5 m.

Rear mounted: at the rear of the vehicle."

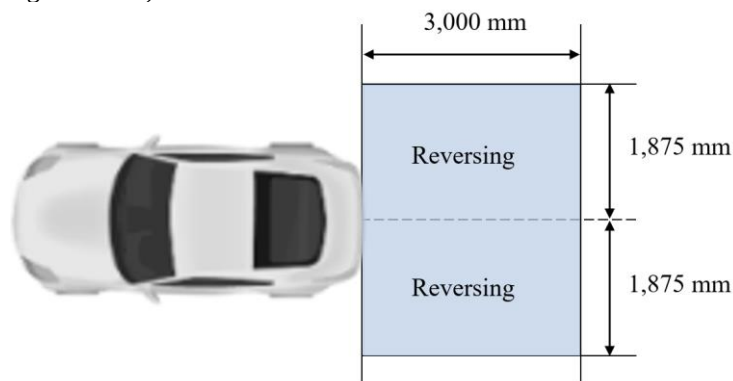
Paragraph 6.27.9.4., amend to read:

- "6.27.9.4. The duration of the optical indication of the answer-back signal shall not exceed 3 seconds. This time is defined from the beginning to the end of the signal, irrespective of whether it contains flashes, variations of intensity or variations in apparent surface."

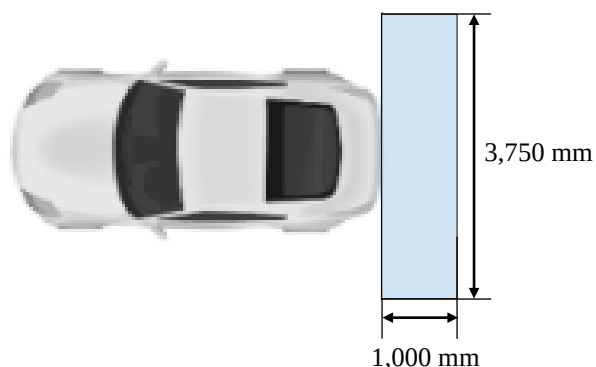
Insert a new paragraph 6.28. and related sub-paragraphs, to read:

- "6.28. Reversing projection

- 6.28.1. Presence
Optional
- 6.28.2. Number
One or two reversing projection(s).
The reversing projector(s) shall be type approved according to the 01 or subsequent series of amendments to UN Regulation No. 148.
- 6.28.3. Arrangement
Such that the provisions of paragraphs 6.28.5., 6.28.6. and 6.28.9. are fulfilled.
- 6.28.4. Position
Such that the provisions of paragraphs 6.28.5., 6.28.6. and 6.28.9. are fulfilled.
- 6.28.5. Projection area
- 6.28.5.1. The lateral distance from the outer edge of the projection with respect to the longitudinal plane of the vehicle shall not be more than 1,875 mm.
The longitudinal distance from the farthest edge of the projection shall not be more than 3,000 mm from the backward extreme outer edge of the vehicle (see figure below).



- 6.28.5.2. The patterns of the reversing projections shall start with their closest edge within a rectangle, symmetrical to the median longitudinal plane and adjacent to the extreme outer edge of the vehicle a width of 1,000 mm and a length of 3,750 mm (see figure below).



- 6.28.6. Orientation
Rearwards
- 6.28.7. Electrical connections
- 6.28.7.1. If provided, the reversing projections shall be switched ON only when the reversing lamp(s) is/are switched ON.

- 6.28.7.2. The system which operates the reversing projections may be automatically and/or manually deactivated and/or reactivated.
- 6.28.8. Tell-tale
Optional
- 6.28.9. Other requirements
- 6.28.9.1. The technical service shall, to the satisfaction of the Type Approval Authority, perform a visual test to verify that there is no direct visibility of the apparent surface of any reversing projector, if viewed by an observer moving on the boundary of a zone on a transverse plane 10 m from the front of the vehicle, a transverse plane 10 m from the rear of the vehicle, and two longitudinal planes 10 m from each side of the vehicle; these four planes to extend from 1 m to 3 m above and perpendicular to the ground as shown in Annex 14.
- This requirement shall be deemed to be satisfied if the installation conditions comply with paragraph 5.12.1.2. (a) in the 01 series of amendments to UN Regulation No. 148.
- At the request of the applicant and with the consent of the Technical Service, this requirement may also be verified by a drawing or simulation.
- 6.28.9.2. If the requirement of paragraph 6.28.9.1. is not fulfilled, the requirement of paragraph 5.12.1.2. (b) in the 01 series of amendments to UN Regulation No. 148 applies. The related indication shall be made in the Communication Form in Annex 1.”

Annex 1,

Insert new items 9.32. and related sub-items, to read:

- “9.32. Reversing projection: yes/no²
- 9.32.1. According to paragraph 6.28.9., the reversing projector fulfils the requirements of paragraph
- (a) 5.12.1.2. (a) of UN Regulation No. 148 yes/no²
- (b) 5.12.1.2. (b) of UN Regulation No. 148 yes/no²”

Annex 14,

Title, amend to read:

“Observing area towards the apparent surface of manoeuvring lamps, exterior courtesy lamps and reversing projectors”

Insert a new Annex 17, to read:

“Annex 17

Basic element to be used for reversing projection patterns

Basic element		Applicable function
Rectangle		Reversing projection • Colour of the Basic element: White
Note: Minor deviations from the shape of the basic element when projected on the road, due to technical restrictions or environmental conditions are considered to comply with the shape of the basic element.		

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