

Draft amendments to UN Regulation No. 93 (Front Underrun Protection)

The text reproduced below was prepared by the expert from the European Commission to update the provisions on Frontal Underrun Protection (FUP) approved as integrated part of the motor vehicle. The amendment is proposed in particular to allow more rounded shape of the cab in light of better aerodynamic performance. The modifications to the current text of the UN Regulations are marked in bold for new or strikethrough for deleted characters.

I. Proposal for Supplement 1 to the original series of UN Regulation No. 93 (Uniform provisions concerning the approval of: I. Front underrun protective devices (FUPDs); II. Vehicles with regard to the installation of an FUPD of an approved type; III. Vehicles with regard to their front underrun protection (FUP))

Paragraph 10.5., amend to read:

"10.5. The FUP shall have sufficient strength so that the horizontal distance measured in the rearward direction between the foremost part of the vehicle, **as measured in the vertical plane which is parallel to the median longitudinal plane of the vehicle and which is corresponding with the geometric centre of the test ram contact surface in its initial position,** ~~after the application of the test forces (specified in this annex)~~ and the test ram contact surface on the vehicle **after the application of the relevant test forces (as specified in Annex 5)**, does not exceed 400 mm."

Annex 5, insert new paragraph 2.2.6., to read:

"2.2.6. **In order to avoid lateral loading on the test ram during the test, the FUP may be locally adapted to provide for an appropriately flat area for force application. Any such modification shall however not act as a reinforcement of the FUP structure itself.**"

II. Justification

1. It is expected that truck cabs will become more aerodynamic to improve fuel efficiency and CO₂ emissions. This may lead to more rounded cabs and more unique truck cab shapes. Hence, the proposal is to update Part III where the FUP is integrated in the motor vehicle.
 2. The current version of this Regulation is only suitable for conventional flat fronted trucks, as the most forward point of the cab is taken as the reference point, regardless of the point of application of the FUP test force.
 3. In this proposed amendment, the forward reference point is to be taken in the same transverse location as where the force is applied. This means that the FUP can follow the contour of the cab and the distance is measured along this contour, rather than at the foremost point of the overall cab.
 4. This results in FUPs that, in the case of cab fronts that are curved, at least 400 mm must be maintained along the front contour of the cab, instead of the foremost point.
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