

Informal document amending ‘Proposal for Amendments to the 03 series of Amendments to UN Regulation No. 79 (Steering equipment)’

Submitted by the expert from the European Association for Electromobility

The text reproduced below was prepared by the expert from the European Association for Electromobility (AVERE) introducing an amendment to UN Regulation No. 79. It is aimed at clarifying the text of the Regulation. The modifications to the existing text of the Regulation are marked in bold for new and strikethrough for deleted characters.

I. Proposal

Paragraph 5.6.2.1.3, amend to read (insert a new provision):

"5.6.2.1.3. The system shall be designed so that excessive intervention of steering control is suppressed to ensure the steering operability by the driver and to avoid unexpected vehicle behaviour, during its operation. To ensure this, the following requirements shall be fulfilled:

(a) The steering control effort necessary to override the directional control provided by the system shall not exceed 50 N;

(b) The specified maximum lateral acceleration $a_{y\max}$ shall be within the limits as defined in the following table:

Table 1

For vehicles of category M₁, N₁

Speed range	10 - 60 km/h	> 60 - 100 km/h	> 100 - 130 km/h	> 130 km/h
Maximum value for the specified maximum lateral acceleration	3 4 m/s ²	3 4 m/s ²	3 m/s ²	3 m/s ²
Minimum value for the specified maximum lateral acceleration	0 m/s ²	0.5 m/s ²	0.8 m/s ²	0.3 m/s ²

For vehicles of category M₂, M₃, N₂, N₃

Speed range	10 - 30 km/h	> 30 - 60 km/h	> 60 km/h
Maximum value for the specified maximum lateral acceleration	2.5 m/s ²	2.5 m/s ²	2.5 m/s ²
Minimum value for the specified maximum lateral acceleration	0 m/s ²	0.3 m/s ²	0.5 m/s ²

(c) In the presence of weather conditions which have the potential to adversely affect vehicle performance, the maximum lateral acceleration shall be limited to 3 m/s² across all speed categories for M1 and N1 category vehicles.

The control strategies for the detection of weather conditions shall be declared to the satisfaction of the Technical Service, and the methodology shall be included in the Annex 6 report.

II. Justification

A. Paragraph 5.6.2.1.3.

1. Based on input received from the contracting parties, we propose to limit our proposal to a 100 km/h. A limit of 100 km/h still does not encompass all the cases where a vehicle may experience lateral acceleration values above 3 m/s² based on manual driving data that was collected. This is especially problematic in situations (such as interchanges or exits) where a curve becomes progressively tighter. Reducing this limit further will increase the number of situations where the vehicle is not able to maintain a safe position in the curve, resulting in confusing behavior for the driver and surrounding traffic, and a safety risk by the potential departure of the vehicle from the lane. A manufacturer will not design the system to reach the 4 m/s² value at all times as this would not be a desirable experience for the driver. Nonetheless, the increased limit should be maintained to ensure a safe performance in a multitude of environments. The following data is from 500 vehicles over the course of 30 days.

