

Proposal for amendments to Regulation No. 79 (Steering equipment)

Proposed changes with regard to the implementation of technical specifications for Lane Departure Warning Systems (LDWS)

Note: The text reproduced below was prepared by the expert from Germany in order to introduce in Regulation No. 79 technical specifications on Lane Departure Warning Systems (LDWS). The modifications to the existing text of the Regulation are marked in ***bold and italic*** characters.

A. PROPOSAL:

1. SCOPE

1.1. This Regulation applies to the steering equipment of vehicles of categories M, N and O. ^{1/}

Insert a new paragraph 1.1.1 to read:

1.1.1 This Regulation applies to also "Lane Departure Warning Systems"

1.2. ...

2. DEFINITIONS

2.1. -2.2. ...

2.3 amend to read:

2.3. "Steering equipment" means all the equipment the purpose of which is to determine the direction of movement of the vehicle ***and to get information about not intended lane departure.***

2.3.1. - 2.3.3.

Insert a new paragraph 2.3.4. to read:

2.3.4. "Lane Departure Warning System (LDWS)" means a system to warn the driver of an unintentional drift of the vehicle out of its travel lane.

Following numbers amend to read:

2.3.5. "Advanced Driver Assistance Steering System" means ...

- 2.3.5.1. "Automatically commanded steering function" means ...
- 2.3.5.2. "Corrective steering function" means ...
- 2.3.6. "Steered wheels" means ...
- 2.3.7. "Energy supply" includes ...
- 2.3.7.1. "Energy source" means ...
- 2.3.7.2. "Energy reservoir" means ...
- 2.3.7.3. "Storage reservoir" means ...
- 2.4. – 4.8. ...

5. CONSTRUCTION PROVISIONS

5.1. General provisions

5.1.1. - 5.1.9. ...

Insert a new paragraph 5.1.10. to read:

5.1.10 *Additional requirements for vehicles equipped with Lane Departure Warning Systems*
If vehicles of categories M₂, M₃, N₂ or N₃ 1/ fitted with Lane Departure Warning Systems then they shall meet the requirements of Annex 7.
If Lane Departure Warning Systems voluntarily fitted by the manufacturer to a vehicle in categories M₁ or N₁ 1/ is the application of Annex 7 also possible.

Following number amend to read

5.1.**11** Control systems

...

5.2. – 11. ...

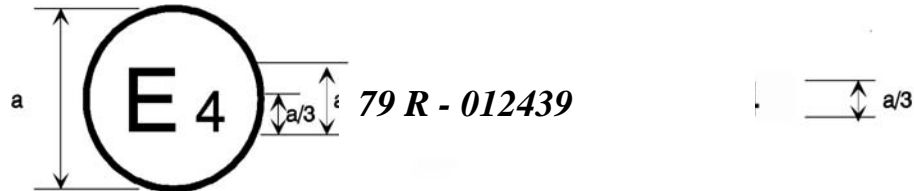
Annex 2, amend to read:

Annex 2

ARRANGEMENTS OF APPROVAL MARKS

Model A

(See paragraph 4.4. of this Regulation)



or:

79 R(7) - 012439

a = 8 mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to steering equipment, been approved in the Netherlands (E4) pursuant to Regulation No. 79 under approval No. 012439. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 79 incorporating the 01 series of amendments. ***In the case the requirement of Annex 7 are also fulfilled shall the letter “R” a number “7” in brackets following***

...

Insert a new Annex 7, to read:

"Annex 7

TEST REQUIREMENTS FOR VEHICLES FITTED WITH LANE DEPARTURE WARNING SYSTEMS

1. GENERAL

This annex defines the requirements for Lane Departure Warning Systems (LDWS).

2. DEFINITIONS

For the purposes of this annex the terms and definitions of ISO 17361:2007 will apply.

3. DOCUMENTATION

3.1. The manufacturer shall provide a brief documentation package which gives access to the basic design of the system and, if applicable, the means by which it is linked to other vehicle systems. The function of the system shall be explained and the documentation shall describe how the current operational status of the system can be checked.

3.1.1. Boundary conditions

Limits defining the boundaries of functional operation shall be stated where appropriate to system performance.

3.1.2. Functions of the units

The function of each unit of the system shall be outlined and the signals linking it with other units or with other vehicle systems shall be shown. This may be provided by a labelled block diagram or other schematic, or by a description aided by such a diagram.

3.1.3. Interconnections and signal flow

Interconnections within the system shall be shown, e.g. by a circuit diagram for the electric transmission links. There shall be a clear correspondence between these transmission links and the signals carried between units.

3.1.4. Identification of units

Each unit shall be clearly and unambiguously identifiable (e.g. by marking for hardware and marking or software output for software content) to provide corresponding hardware and documentation association.

Where functions are combined within a single unit or indeed within a single computer, but shown in multiple blocks in the block diagram for clarity and ease of explanation, only a single hardware identification marking shall be used. The manufacturer shall, by the use of

this identification, affirm that the equipment supplied conforms to the corresponding document.

4. VERIFICATION AND TEST

- 4.1.** *The system may be fitted with a system on/off control that can be operated by the driver at all times. The LDWS shall automatically be switched on when the ignition (start) device is set to the "ON" (run) position.*
- 4.2.** *[The system shall meet the requirements for LDWS of class II as defined in ISO 17361:2007, item 4.2.]*
- 4.3.** *The system shall meet the requirements as defined in ISO 17361:2007, item 4.3. with following exceptions and supplements:*
- *The LDWS shall be automatically activated when the vehicle speed exceeds [60 km/h].*
 - *The latest warning line (as defined in 3.17 in ISO 17361:2007) is located [0,3 m] outside of the lane boundary for all vehicles.*
 - *The requirements for the earliest warning line (4.3.2 subitem c in ISO 17361:2007) will not apply.*
- 4.4** *The test methods in ISO 17361:2007 item 5 will apply with the following exception:*
- *Warning generation test (item 5.6.1 in ISO 17361:2007)*
The system shall provide repeatable warnings within a zone of [30 cm] prior to crossing the latest warning line for each test case.
- 5.** *In the case a system defined in paragraph 2.3.5 (e.g. a Lane Keeping System) fulfilled the requirements of this annex then the approval mark defined in annex 2 shall be the same as LDWS"*

B. JUSTIFICATION:

Some Contracting Parties take the obligatory equipment of "lane departure warning systems" (LDWS) into consideration. To achieve an optimal road safety increase with these systems it is necessary to provide minimal requirements.

With regard to the expected evolution of LDWS in line of active intervention on the steering system the implementation in Regulation No. 79 seems practical.

The above proposed amendment takes over the requirements (terms, definitions and test method) of ISO 17361:2007. Considering the technology of modern LDWS some requirements of the ISO Standard should be changed.
