E/ECE/324
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21 March 1997

# AGREEMENT

## CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS*/

(Revision 2, including the amendments entered into force on 16 October 1995)

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*Addendum 67: Regulation No. 68*

*Amendment 1*

**Supplement 1 to the Regulation in its original version - Date of entry into force: 30 November 1996**

**UNIFORM PROVISIONS CONCERNING THE APPROVAL OF POWER-DRIVEN VEHICLES INCLUDING PURE ELECTRIC VEHICLES WITH REGARD TO THE MEASUREMENT OF THE MAXIMUM SPEED**

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**UNITED NATIONS**

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*/ Former title of the Agreement:

Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

GE.97-20807

The title of the Regulation, amend to read: (see cover page)

Paragraph 1 (including footnote 1/), amend to read :

1. SCOPE

This Regulation applies to the approval of power-driven vehicles including pure electric vehicles of categories M1 and N1 1/ with regard to the measurement of the maximum speed indicated by the manufacturer.

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1/ As defined in annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3) (document TRANS/SC1/WP29/78/Amend.3)."

Insert new paragraphs 2.2. and 2.3., to read :

2.2. "Maximum speed" means:

2.2.1. For thermal engine driven vehicles, the maximum steady speed.

2.2.2. For electric vehicles, the highest average value of the speed, which the vehicle can maintain twice over a distance of 1 km.

2.3 "Maximum 30 minutes speed", for electric vehicles, means the average value of the maximum speed, indicated by the manufacturer, which the vehicle can maintain for 30 minutes."

Paragraphs 2.2. to 2.3. (former), renumber as paragraphs 2.4. to 2.5., and amend to read:

"2.4. "Type of vehicle" means vehicles powered either by:

2.4.1. A "thermal engine" and which do not differ in such essential respects as: shape of the bodywork, engine, transmission, tyres and unladen mass of the vehicle, or

2.4.2. An "electric motor(s)" and which do not differ in such essential respects as: shape of the bodywork, electric drive train (motor(s) and controller(s)), traction battery (type, capacity, battery management), transmission (if any), tyres and unladen mass of the vehicle.

2.5. "Unladen mass" means the mass of the vehicle in running order without occupants or load, but with the fuel tank full (if any), cooling liquid, service and traction batteries, oils, onboard charger, portable charger, tools and spare wheel, if provided in series by the manufacturer of the vehicle."

Paragraph 3.2.1., amend to read:

"3.2.1. Detailed description of the vehicle type as regards the shape of the bodywork, the engine or electric drive train (motor(s) and controller(s)), traction battery (type capacity, battery management) (if any), transmission (if any), tyres and unladen mass of the vehicle."

Paragraph 5.1., amend the word "speed" to read "speeds".

Insert a new paragraph 5.2.1., to read :

"5.2.1. Thermal engine driven vehicles:"

Paragraphs 5.2.1. to 5.2.4. (former), renumber as paragraphs 5.2.1.1. to 5.2.1.4.

Insert new paragraphs 5.2.2. to 5.2.2.5., to read:

"5.2.2. Electric vehicles:

5.2.2.1. Requirements of paragraph 5.2.1.1. shall be met, if applicable.

5.2.2.2. The charge of the traction battery shall be carried out with the on-board charger (if any) or with a portable charger, recommended by the vehicle manufacturer.
The procedure shall be according to a normal overnight charge, excluding all types of special charge, such as equalization or the servicing charge. The ambient temperature shall be between 20°C and 30°C.

The end of charge shall be specified by the vehicle manufacturer, but charging, expressed in hours (h), shall not last longer than:

$$\frac{3\,C}{P}$$

where:

C is the battery energy-capacity (Wh), as specified by the manufacturer, and
P is the mean power (W), drawn from the mains during charging.

5.2.2.3. All the energy storage systems available for use other than for propelling the vehicle (electric, hydraulic, pressure, etc.) must be charged according to the manufacturer's recommendations.

5.2.2.4. The vehicle shall have covered a distance of at least 300 km during a period of seven days preceding the test, using the batteries that will be installed in the vehicle for measuring the maximum speed.

5.2.2.5. The mass of the vehicle shall be its unladen mass plus half the full load in any case."

Paragraph 5.3., amend to read :

"5.3. Characteristics of the test track

The measurement shall be effected on either:

A straight track in the conditions set out in paragraph 5.3.1.;

and/or

A loop track in the conditions set out in paragraph 5.3.2."

Paragraph 5.3.1.2.1, amend to read:

"5.3.1.2.1. The length L shall be selected in relation to the precision of the apparatus and the method used for measuring the time t of the run so that the actual speed can be determined within ± 1 per cent. For electric vehicles, the length of the measuring zone shall be at least 1000 m.
The length actually used for the measurement shall be recorded in the report."

Paragraph 5.5.1.1., amend to read:

"5.5.1.1. Warming up for thermal engine driven vehicles."

Paragraphs 5.5.1.1. and 5.5.1.2. (former), renumber as paragraphs 5.5.1.1.1. and 5.5.1.1.2.

Insert new paragraphs 5.5.1.2. to 5.5.1.2.2., to read:

"5.5.1.2. Warming up for electric vehicles:

5.5.1.2.1. After full charging carried out according to paragraph 5.2.2.2.2., the vehicle must be conditioned at a temperature ranging from 20° to 30°C during a minimum period of two hours.

5.5.1.2.2. After the thermal conditioning and just before the beginning of the test, the vehicle must be driven on a minimal distance of five kilometres, at a speed equivalent to 80 per cent of the maximum 30 minutes speed as defined in paragraph 2.3."

Paragraphs 5.5.2. and 5.5.3. (former), renumber as paragraphs 5.5.3. and 5.5.4.

Paragraph 5.5.3.1. (former), renumber as paragraph 5.5.4.1. and amend to read:

"5.5.4.1. Two-direction test

.... 3 per cent.
For electric vehicles, the procedure shall be effected once in each direction.
A time T...."

Paragraph 5.5.3.2., renumber as paragraph 5.5.4.2.

Paragraph 5.5.4., renumber as paragraph 5.5.5. and amend to read:

"5.5.5. Determination of the maximum speed on loop track.

.... 3 per cent.
For electric vehicles, the distance covered shall not be less than 2000 metres.
The time T...."

Insert a new paragraph 5.5.6., to read:

"5.5.6. Determination of the maximum 30 minutes speed for electric vehicles on a loop track.

After preparation and warming up of the electric vehicle according to the requirements of paragraphs 5.2.2. and 5.5.1.2., the test shall be performed at a speed indicated by the vehicle manufacturer, which can be maintained over thirty minutes with a tolerance of ± 5 per cent.

The distance L (km) covered shall be measured and the average speed (V) calculated as follows:

$$V = 2\ L\ (km/h)"$$

Annex 1,

Item 9, amend to read:

"9. Maximum speed as approved

9.1. For thermal engine powered vehicles: . . . . . (km/h)

9.2. For electric vehicles: . . . . . (km/h)"

Insert a new item 10, to read (including new footnote 3/):

"10. Maximum 30 minutes speed 3/: . . . . . (km/h)

3/ If applicable."

Items 10 to 20 (former), renumber as items 11 to 21.

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