E/ECE/324
E/ECE/TRANS/505 } Rev.1/Add.63/Amend.3

8 April 2008

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 that entered into force on 16 October 1995)

Addendum 63: Regulation No. 64

Amendment 4

Incorporating:
01 series of amendments: Date of entry into force: 3 February 2008
Corrigendum 1 to the 01 series of amendments, subject of Depositary Notification C.N.1161.2007.TREATIES-2 dated 18 January 2008

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF VEHICLES EQUIPPED WITH TEMPORARY-USE SPARE WHEELS/TYRES

UNITED NATIONS

*/ 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.

The title, (in both instances where title is used), amend to read:

"UNIFORM PROVISIONS CONCERNING THE APPROVAL OF VEHICLES WITH REGARD TO THEIR EQUIPMENT WHICH MAY INCLUDE A TEMPORARY USE SPARE WHEEL AND TYRE UNIT, RUN FLAT TYRES AND/OR A RUN FLAT"

The table of contents, amend to read (inserting a new Annex 4):

"Annex 4 - Test requirements for Run-Flat Warning System (RFWS)"

Text of the Regulation

Paragraph 1. (including the addition of a new footnote 1/), amend to read:

"1. SCOPE

This Regulation applies to the approval of vehicles of category M_1 and N_1 1/ with regard to their equipment which may include run flat tyres, a run flat system, a spare wheel and tyre unit, other than a "Standard spare unit" as defined in paragraph 2.9. of the Regulation, intended for temporary use in the event of damage to the wheel and tyre unit fitted to the vehicle for normal, long term, road use.

For the purposes of this Regulation, spare wheel and tyre substitute units in the form of run-flat tyres or a run-flat system in a totally deflated condition, are to be treated as being temporary use spare units as defined in paragraph 2.10. of the Regulation.

_____

1/ As defined in Annex 7 of the Consolidated Resolution on the Construction of Vehicles (R.E.3) (TRANS/WP.29/78/Rev.1/Amend.2, as last amended by Amend.4)."

Paragraph 2.1., amend to read:

" ..... regard to its temporary use spare wheel and tyre unit."

Paragraph 2.2.2., amend to read:

"2.2.2. the characteristics of the temporary-use spare wheel and tyre unit,"

Insert a new paragraph 2.2.7., to read:

"2.2.7. wheel offset."

Paragraph 2.3., amend to read:

" ..... of a rim and a wheel disc;"

Insert new paragraphs 2.3.1. and 2.3.2., to read:

"2.3.1. "Wheel size designation" means a designation comprising at least the nominal rim diameter, the nominal rim width and the rim profile;

2.3.2. "Wheel offset" means the distance from the hub abutment face to the centre line of the rim."

Paragraph 2.4., amend to read:

"2.4. "Tyre" means a pneumatic tyre, being a reinforced flexible envelope that is provided with, or forms in conjunction with the wheel on which it is mounted, a continuous, essentially toroidal, closed chamber containing a gas (usually air) or a gas and liquid, that is intended normally to be used at a pressure greater than atmospheric pressure. It may be a:"

Insert new paragraphs 2.4.1. to 2.4.4., to read:

"2.4.1. "Normal tyre" being a tyre that is suitable for all normal, on-road, conditions of use;

2.4.2. "Temporary use spare tyre" being a tyre that is specifically designed to be different from a normal tyre and intended only for temporary use under restricted driving conditions;

2.4.3. "Run flat tyre" or "Self supporting tyre" describes a pneumatic tyre structure provided with any technical solutions (for example, reinforced sidewalls, etc.) allowing the pneumatic tyre, mounted on the appropriate wheel and in the absence of any supplementary component, to supply the vehicle with the basic tyre functions, at least, at a speed of 80 km/h (50 mph) and a distance of 80 km when operating in flat tyre running mode;

2.4.4. "Run flat system" or "Extended mobility system" describes an assembly of specified functionally dependant components, including a tyre, which together provide the specified performance granting the vehicle with the basic tyre functions, at least, at a speed of 80 km/h (50 mph) and a distance of 80 km when operating in flat tyre running mode."

Paragraphs 2.5. to 2.7., amend to read:

"2.5. "Flat tyre running mode" describes the state of tyre, essentially maintaining its structural integrity, while operating at an inflation pressure between 0 and 70 kPa.

2.6. "Basic tyre function" means the normal capability of an inflated tyre in supporting a given load up to a given speed and transmitting the driving, the steering and the braking forces to the ground on which it runs.

2.7. "Tyre size designation" means a combination of figures that uniquely identify the geometric size of the tyre, comprising the nominal section width, the nominal aspect ratio and the nominal diameter. Precise definitions of these features may be found in Regulation No. 30."

Paragraphs 2.8.1. to 2.8.2.4. should be deleted.

Insert new paragraphs 2.8. to 2.10.5., to read:

"2.8. "Tyre structure" means the technical characteristics of the tyre's carcass. This may be bias ply (diagonal or cross ply), bias-belted, radial ply or run flat tyre as further defined in Regulation No. 30.

2.9. "Standard spare unit" means an assembly of a wheel and tyre identical in terms of wheel and tyre size designations, wheel offset and tyre structure to that fitted in the same axle position and to the particular model or version of the vehicle for normal operation. It includes the case of a wheel that is produced from a different material, for example, steel instead of aluminium alloy, that may use different wheel fixing nut or bolt designs but which is otherwise identical to the wheel intended for normal operation.

2.10. "Temporary use spare unit" means an assembly of any wheel and tyre that is not within that defined as a "Standard spare unit" in paragraph 2.9. Temporary use spare units may be of the following types:

2.10.1. Type 1
An assembly in which the tyre is a temporary use spare tyre as defined in paragraph 2.4.2.;

2.10.2. Type 2
An assembly in which the wheel has a different offset from that of the wheel fitted in the same axle position for normal operation of the vehicle;

2.10.3. Type 3
An assembly in which the tyre is of a different structure from that fitted in the same axle position for normal operation of the vehicle;

2.10.4. Type 4
An assembly in which the tyre is a normal tyre as defined in paragraph 2.4.1. but where the size designation of the wheel or the tyre or both, differ from those of the wheel or tyre fitted in the same axle position for normal operation of the vehicle;

2.10.5. Type 5
An assembly in which a wheel and tyre unit as defined in paragraph 2.4.3. or 2.4.4. is fitted to the vehicle for normal, long term road use, but used in an emergency in a totally deflated condition;"

Paragraphs 2.9. and 2.10. (former), renumber as paragraphs 2.11. and 2.12.

Paragraph 2.11. (former), renumber as paragraph 2.13. and amend to read:

Paragraph 2.13., amend to read:

"2.13. "Run-Flat Warning System" - describes a system which delivers information to the driver that a tyre is operating in the flat tyre running mode."

Paragraph 3.3., amend to read:

"….. shall be submitted to the type approval authority or the technical service ....."

Paragraph 4.2., correct to read:

"4.2. An approval number shall be assigned to each type approval. Its first two digits (at present 01 corresponding to the 01 series of amendments) shall indicate the series ……"

"Paragraph 4.4.1., the reference to footnote 1/ and footnote 1/, renumber as footnote 2/, and amend to read:

"2/ 1 for Germany, 2 for France, 3 for Italy, 4 for Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Serbia, 11 for the United Kingdom, 12 Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 for Ireland, 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30 (vacant), 31 for Bosnia and Herzegovina, 32 for Latvia, 33 (vacant), 34 for Bulgaria, 35 (vacant), 36 for Lithuania, 37 for Turkey, 38 (vacant), 39 for Azerbaijan, 40 for The former Yugoslav Republic of Macedonia, 41 (vacant), 42 for the European Community (Approvals are granted by its member States using their respective ECE symbol), 43 for Japan, 44 (vacant), 45 for Australia, 46 for Ukraine, 47 for the Republic of South Africa, 48 for New Zealand, 49 for Cyprus, 50 for Malta, 51 for Republic of Korea, 52 for Malaysia, 53 for Thailand, 54 and 55 (vacant), 56 for Montenegro, 57 (vacant) and 58 for Tunisia. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the 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 Approval Granted on the Basis of these Prescriptions, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement."

Paragraph 5.1.1., amend to read (the reference to footnote 2/ and the corresponding footnote 2/ should be deleted):

"5.1.1 Tyres intended for use as part of a temporary use spare unit as defined in paragraph 2.10., shall be approved in accordance with Regulation No. 30"

Paragraph 5.1.3., amend to read:

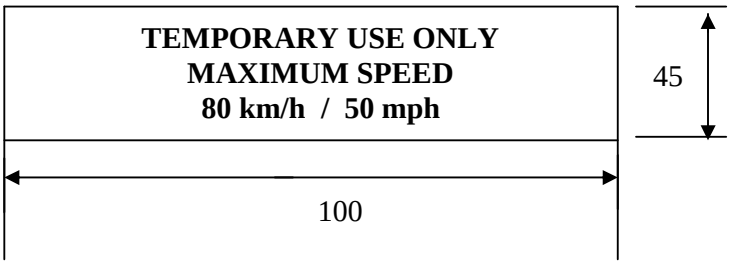
"5.1.3. The design speed of the temporary-use spare unit shall be at least 120 km/h for types 1, 2 and 3."

Paragraph 5.1.4.1., amend to read (the diagram is not amended):

"5.1.4.1. An 80 km/h maximum speed warning symbol arranged in accordance with the diagram below shall be permanently displayed on the outer face of the wheel in a prominent position.

In the case of vehicles intended to be sold in countries using imperial units of measurement, an additional warning symbol, identical to that described above, with the exception that the figure "80" shall be replaced by "50" and the wording "km/h" by "mph", shall be permanently displayed on the outer face of the wheel in a prominent position.

Alternatively a single warning symbol arranged in accordance with the diagram below, shall be permanently displayed on the outer face of the wheel in a prominent position.



Upper case letters shall be at least 5 mm high and the numbers "80" and "50" shall be at least 20 mm high with the elements that make up each character of the number at least 3 mm line thickness. Lower case text shall at least have a line height of 5 mm. All text shall be enclosed in a border and be on a background of contrasting colour.

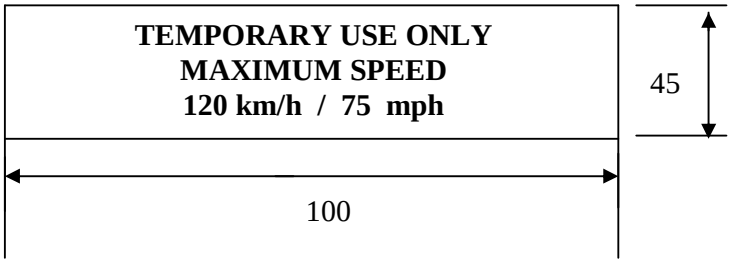
The requirements of this paragraph shall only apply to types 1, 2 and 3 temporary use spare unit as defined in paragraphs 2.10.1., 2.10.2. and 2.10.3."

Add a new paragraph 5.1.4.1.1. to read:

"5.1.4.1.1. An 120 km/h maximum speed warning symbol arranged in accordance with the diagram below shall be permanently displayed on the outer face of the wheel in a prominent position.

In the case of vehicles intended to be sold in countries using imperial units of measurement, an additional warning symbol, identical to that described above, with the exception that the figure "120" shall be replaced by "75" and the wording "km/h" by "mph", shall be permanently displayed on the outer face of the wheel in a prominent position.

Alternatively a single warning symbol arranged in accordance with the diagram below, shall be permanently displayed on the outer face of the wheel in a prominent position.



Upper case letters shall be at least 5 mm high and the numbers "120" and "75" shall be at least 20 mm high with the elements that make up each character of the number at least 3 mm line thickness. Lower case text shall at least have a line height of 5 mm. All text shall be enclosed in a border and be on a background of contrasting colour.

The requirements of this paragraph shall only apply to a type 4 temporary use spare unit as defined in paragraph 2.10.4. to be supplied for use on an M_1 category vehicle.

Insert new paragraphs 5.1.5. to 5.1.6.6., to read:

"5.1.5. Except in the case of a run-flat/self supporting tyres or run-flat/extended mobility system, it is permitted to supply only one temporary use spare unit with the vehicle.

5.1.6. In the case of vehicles equipped with run-flat/self supporting tyres or run-flat/extended mobility system the vehicle shall also be fitted with a Run-Flat Warning System (defined in paragraph 2.13.). The run-flat warning system shall be capable of operating within a speed range from 40 km/h to the maximum design speed of the vehicle.

5.1.6.1. The warning indication shall be by means of an optical yellow warning signal.

5.1.6.2. The warning signal shall be activated when the ignition (start) switch is in the "on" (run) position (bulb check).

5.1.6.3. A warning shall be indicated to the driver by the operation of the warning signal referred to in paragraph 5.1.6.1. at the latest when one tyre is detected to be in the flat tyre running mode.

5.1.6.4. Electrical failure or sensor anomaly that affects the Run-Flat Warning System, including failure of the electrical source, supply or transmission of the output signal, shall be indicated to the driver by an optical yellow run flat malfunction signal. If the warning signal described in paragraph 5.1.6.1. is used to indicate both a tyre in the run flat mode and a malfunction in the run-flat warning system, the following shall apply: with the ignition (start) switch in the "on" (run) position the warning signal shall flash to indicate a system failure. After a short period of time the warning signal shall remain continuously illuminated as long as the failure exists and the ignition (start) switch is in the "on" (run) position. The flashing and illumination sequence shall be repeated each time the ignition (start) switch is in the "on" (run) position until the failure has been corrected.

5.1.6.5. When the system is being manually reset in accordance with the vehicle manufacturer's instructions the provisions in paragraphs 5.1.6.3. and 5.1.6.4. may not apply.

5.1.6.6. The operation of the warning signal specified in paragraphs 5.1.6.2. to 5.1.6.4. shall meet the requirements in Annex 4."

Paragraph 6.1.2., amend to read:

"6.1.2. An instruction to drive with caution and at no more than the permitted maximum speed of 80 km/h (50 mph) when a type 1, 2 or 3 temporary-use spare unit as defined in paragraphs 2.10.1., 2.10.2. or 2.10.3. is fitted, and to reinstall a standard unit as soon as possible. It shall be made clear that this instruction also applies to a type 5 temporary-use spare unit as defined in paragraph 2.10.5. being used in the flat tyre running mode."

Insert a new paragraph 6.1.2.1., to read:

"6.1.2.1. An instruction to drive with caution and at no more than the permitted maximum speed of 120 km/h (75 mph), when a type 4 spare unit as defined in paragraph 2.10.4. is fitted, and to reinstall a standard unit as soon as possible."

Paragraph 6.1.3., amend to read:

"6.1.3. ….. fitted at the same time. This requirement shall only apply to a type 1, 2 and 3 temporary-use spare unit as defined in paragraphs 2.10.1., 2.10.2. and 2.10.3."

Paragraph 6.1.5., amend to read:

"6.1.5. For vehicles equipped with a temporary use spare unit stored in a deflated condition, a description of the procedure for ….. "

Paragraph 6.2., amend to read:

"6.2. If the vehicle is equipped with a temporary use spare unit stored in a deflated condition, a device must be provided ……"

Paragraph 6.3., amend to read:

" .....shall be displayed in a prominent place on the vehicle."

Paragraph 8.1., amend to read:

"8.1. The Conformity of Production procedures shall comply with those set out in Appendix 2 of the Agreement (E/ECE/324 – E/ECE/TRANS/505/Rev.2), with the following requirements:"

Paragraph 8.2., amend to read:

"8.2. The type approval authority or technical service which has granted type approval, may at any time verify the conformity of production in each production facility. The normal frequency of these verifications shall be at least once per year."

Paragraphs 8.3. to 8.4.5., should be deleted.

Paragraph 9.1., amend to read:

" ..... laid down in paragraph 8. are not complied with."

Insert new paragraphs 12. to 12.5., to read:

"12. TRANSITIONAL PROVISIONS

12.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the 01 series of amendments.

12.2. As from 36 months after the date of entry into force of the 01 series of amendments, Contracting Parties applying this Regulation with respect to the temporary use spare wheels/tyres, run flat tyres or a run flat system shall grant approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 01 series of amendments.

12.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the preceding series of amendments to this Regulation.

12.4. Contracting Parties applying this Regulation shall continue to grant approvals to those types of vehicles which comply with the requirements of this Regulation as amended by the proceeding series during the 36 months' period which follows the date of entry into force of the 01 series of amendments.

12.5. Notwithstanding the transitional provisions above, Contracting Parties whose application of this Regulation comes into force after the date of entry into force of the most recent series of amendments are not obliged to accept approvals which were granted in accordance with any of the preceding series of amendments to this Regulation."

Annex 1, item 9.3., amend to read:

"9.3. Details of temporary use spare unit, including wheel and tyre size designations and marking, tyre load and speed capability, run-flat tyre including the maximum distance wheel offset (where different from standard unit)."

Annex 3,

Paragraph 1.5., amend to read:

"1.5. Except in the case of a run-flat tyre, the tyres shall be inflated to the pressures recommended by the vehicle manufacturer for the vehicle type and loading condition. A run-flat tyre shall be tested in the fully deflated condition."

Paragraph 2.3., amend to read:

"2.3. The braking performance shall correspond to the test procedure given in Regulation No. 13 or 13-H for categories M_1 and N_1 vehicles for the Type O cold test with the engine disconnected:"

Insert new paragraphs 2.3.1. to 2.3.1.4., to read:

"2.3.1. In the case of M_1 category vehicles approved to Regulation No. 13 fitted with type(s) 1, 2, 3 and 5 temporary use spare units as defined in paragraphs 2.10.1., 2.10.2., 2.10.3. and 2.10.5. and tested using a prescribed speed of 80 km/h;

the stopping distance achieved using a maximum force of 500 N applied to the foot control, shall not exceed 50.7 m and;

the mean fully developed deceleration (mfdd) given by the following formula shall be not less than 5.8 ms^{-2}:

$$Mfdd = v^2/41.14\ s$$

where "v" is the initial speed at which braking commences and "s" is the distance covered during braking between 0.8 v and 0.1 v.

2.3.1.1. In the case of N_1 category vehicles approved to Regulation No. 13 fitted with type(s) 1, 2, 3 and 5 temporary use spare units as defined in paragraphs 2.10.1., 2.10.2., 2.10.3. and 2.10.5. and tested using a prescribed speed of 80 km/h;

the stopping distance achieved using a maximum force of 700 N applied to the foot control shall not exceed 61.2 m and;

the mean fully developed deceleration (mfdd) given by the following formula shall be not less than 5.0 ms^{-2}:

$$Mfdd = v^2/41.14\ s$$

where v is the initial speed at which braking commences and s is the distance covered during braking between 0.8 v and 0.1 v.

2.3.1.2. In the case of M_1 category vehicles approved to Regulation No. 13 fitted with type 4 spare unit as defined in paragraph 2.10.4. tested using a prescribed speed of 120 km/h;

the stopping distance achieved using a maximum force of 500 N applied to the foot control, shall not exceed 108 m and;

the mean fully developed deceleration (mfdd) given by the following formula shall be not less than 5.8 ms^{-2}:

$$Mfdd = v^2/41.14\ s$$

where "v" is the initial speed at which braking commences and "s" is the distance covered during braking between 0.8 v and 0.1 v.

2.3.1.3. In the case of M_1 or N_1 category vehicles approved to Regulation No. 13-H fitted with type(s) 1, 2, 3 and 5 temporary use spare units as defined in paragraphs 2.10.1., 2.10.2., 2.10.3. and 2.10.5. and tested using a prescribed speed of 80 km/h;

the stopping distance achieved using a maximum force of 650 N + 0 / -50 N applied to the foot control, shall not exceed 46.4 m and;

the mean fully developed deceleration (mfdd) given by the following formula shall be not less than 6.43 ms^{-2}:

$$Mfdd = v^2/41.14\ s$$

where "v" is the initial speed at which braking commences and "s" is the distance covered during braking between 0.8 v and 0.1 v.

2.3.1.4. In the case of M_1 category vehicles approved to Regulation No. 13-H fitted with type 4 temporary use spare unit as defined in paragraph 2.10.4. and tested using a prescribed speed of 120 km/h;

the stopping distance achieved using a maximum force of 650 N + 0 / -50 N applied to the foot control, shall not exceed 98.4 m and;

the mean fully developed deceleration (mfdd) given by the following formula shall be not less than 6.43 ms^{-2}:

$$Mfdd = v^2/41.14\ s$$

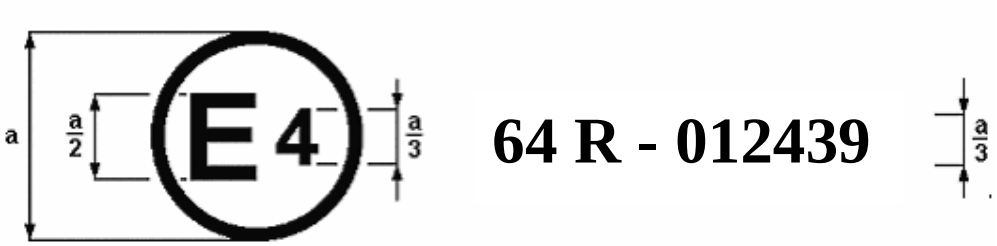
where "v" is the initial speed at which braking commences and "s" is the distance covered during braking between 0.8 v and 0.1 v."

Annex 2, correct to read:

"Annex 2

ARRANGEMENTS OF APPROVAL MARKS

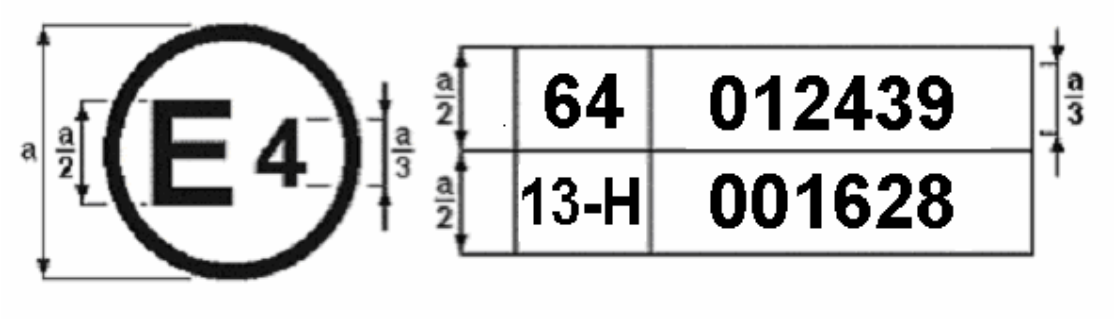
Model A
(See paragraph 4.4. of this Regulation)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to the equipment of temporary-use spare unit(s), been approved in the Netherlands (E 4), pursuant to Regulation No. 64 under approval number 012439. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 64, incorporating the 01 series of amendments.

Model B
(See paragraph 4.5. of this Regulation)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. 64 and 13-H. 1/ The approval numbers indicate that, at the dates when the respective approvals were given, Regulation No. 64 included the 01 series of amendments and Regulation No. 13-H was in its original form.

1/ The latter number is given as an example only."

Insert a new Annex 4, to read:

"Annex 4

TEST FOR RUN-FLAT WARNING SYSTEM

1. Test Conditions

1.1. Ambient temperature
The ambient temperature shall be between 0 °C and 40 °C.

1.2. Test road surface
The test road surface shall be dry and smooth.

1.3. Test location
The test location shall be other than an environment susceptible to radio wave interference such as a strong electric field.

1.4. Condition of the test vehicle in a stationary state
The vehicle's tyres shall be shaded from direct sun when the vehicle is parked.

2. Test Method

2.1. Test procedures for detection of a tyre in the flat tyre running mode. The requirements of either paragraph 2.1.1. or 2.1.2. shall be met.

2.1.1. Test 1

2.1.1.1. The tyres are to be inflated to the pressure recommended by the vehicle manufacturer.

2.1.1.2. With the vehicle stationary and the ignition (start) switch in the "Lock" or "Off" position, turn the ignition (start) switch to the "On" ("Run") position or, where applicable, the appropriate key position. Confirm the activation of the warning signal.

2.1.1.3. Turn off the ignition and reduce the inflation pressure of any one of the tyres until the adjusted tyre inflation pressure is 100 kPa below the recommended cold inflation pressure.

2.1.1.4. Within 5 minutes after reducing the inflation pressure of the tyre, drive the vehicle normally between 40 and 100 km/h.

2.1.1.5. The test is completed when either:
(a) the run flat warning system as described in paragraph 5.1.6.1. has activated or,

(b) a period of 5 minutes has elapsed, when determined in accordance with paragraph 2.3., from the time the test speed has been reached. If the warning does not activate the test has failed.

The vehicle shall be brought to a halt and the ignition switched off.

2.1.1.6. If the warning signal as required in paragraph 2.1.1.5. above has activated, wait 5 minutes before turning the ignition on; the signal must reactivate and remain active as long as the ignition switch is in the "on" ("run") position.

2.1.1.7. Repeat the process described in paragraphs 2.1.1.1. to 2.1.1.6., but with a test speed of 130 km/h or higher. All the relevant requirements shall be met for both test speeds.

2.1.2. Test 2

2.1.2.1. The tyres are to be inflated to the pressure recommended by the vehicle manufacturer.

2.1.2.2. With the vehicle stationary and the ignition (start) switch in the "Lock" or "Off" position, turn the ignition (start) switch to the "On" ("Run") position or, where applicable, the appropriate key position. Confirm the activation of the warning signal. Turn off the ignition.

2.1.2.3. Produce on one tyre a gradual pressure loss of between 10 kPa/min and 20 kPa/min.

2.1.2.4. Drive the vehicle at any speed above 25 km/h.

2.1.2.5. The test requirement is satisfied if the system delivers an alert by the time the pressure drop has reached 100 kPa.

2.2. Test procedures for detecting a failure of the Run-Flat Warning System.

2.2.1. With the vehicle in the normal use condition, simulate a Run-Flat Warning System failure. This may be simulated by, for example, disconnecting connectors for wiring related to the power supply from the power source or wiring related to the input/output to/from the warning system control.

2.2.2. With a simulated fault introduced, drive the vehicle normally between 40 and 100 km/h.

2.2.3. When:

(a) the run flat malfunction signal as described in paragraph 5.1.6.4. has activated or,

(b) a period of 5 minutes has elapsed, when determined in accordance with paragraph 2.3., from the time the test speed has been reached. If the warning does not activate the test has failed,

The vehicle shall be brought to a halt and the ignition switched off.

2.2.4. If the warning signal as required in paragraph 2.2.3. above has activated, wait 5 minutes before turning the ignition on; the signal must reactivate and remain active as long as the ignition switch is in the "on" ("run") position.

2.3. Calculation of time duration

The time to be taken for determination of the requirements of paragraphs 2.1.1.5. and 2.2.3. shall be the total elapsed time while the vehicle is driven in the test speed range 40 km/h to 100 km/h.

The time shall be calculated over a continuous drive but it is not necessary that the vehicle maintains throughout the test a speed within the test speed range. Where the vehicle speed falls outside the test speed range, any time accumulated during such events shall not be considered as part of the total test time duration.

The type approval authority shall satisfy itself that the run flat warning system records the time within the test speed range on a cumulative basis and does not restart the time calculation if the vehicle falls outside the test speed range."
