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Contents

II *Non-legislative acts*

ACTS ADOPTED BY BODIES CREATED BY INTERNATIONAL AGREEMENTS

- ★ **Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of I. Vehicles with regard to their lateral protection devices (LPD) — II. Lateral protection devices (LPD) — III. Vehicles with regard to the installation of LPD of an approved type according to Part II of this Regulation** 1
- ★ **Regulation No 97 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of vehicle alarm systems (VAS) and of motor vehicles with regard to their alarm systems (AS)** 19

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Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

The titles of all other acts are printed in bold type and preceded by an asterisk.

II

*(Non-legislative acts)***ACTS ADOPTED BY BODIES CREATED BY
INTERNATIONAL AGREEMENTS**

Only the original UN/ECE texts have legal effect under international public law. The status and date of entry into force of this Regulation should be checked in the latest version of the UN/ECE status document TRANS/WP.29/343, available at:
<http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29fdocsts.html>

**Regulation No 73 of the Economic Commission for Europe of the United Nations (UN/ECE) —
Uniform provisions concerning the approval of****I. Vehicles with regard to their lateral protection devices (LPD)****II. Lateral protection devices (LPD)****III. Vehicles with regard to the installation of LPD of an approved type according to Part II of this
Regulation**

Incorporating all valid text up to:

01 series of amendments — Date of entry into force: 9 December 2010

CONTENTS

REGULATION

1. Scope
2. Definitions
3. Requirements
4. Application for approval
5. Approval
6. Modification and extension of approval of a type of vehicle or lateral protection device
7. Conformity of production
8. Penalties for non-conformity of production
9. Production definitely discontinued
10. Names and addresses of technical services responsible for conducting approval tests, and of administrative departments
11. Transitional provisions

PART I — APPROVAL OF VEHICLES WITH REGARD TO THEIR LATERAL PROTECTION DEVICES (LPD)

12. Requirements
13. Derogations

PART II — APPROVAL OF LATERAL PROTECTION DEVICES (LPD)

14. Requirements

PART III — APPROVAL OF A VEHICLE WITH REGARD TO THE INSTALLATION OF AN LPD OF AN APPROVED TYPE ACCORDING TO PART II OF THIS REGULATION

15. Requirements

16. Derogations

ANNEXES

- Annex 1 — Appendix 1 — Communication (Part I)
Appendix 2 — Communication (Part II)
Appendix 3 — Communication (Part III)

Annex 2 — Arrangement of approval marks

Annex 3 — Test conditions

1. SCOPE

1.1. This Regulation applies to:

- 1.1.1. PART I: vehicles of categories N₂, N₃, O₃ and O₄ ⁽¹⁾ equipped with lateral protection devices which have not been separately approved according to Part II of this Regulation or are so designed and/or equipped that their component parts may be regarded as totally or partially fulfilling the function of a device.
- 1.1.2. PART II: Lateral protection devices which are intended to be fitted to vehicles of categories N₂, N₃, O₃ and O₄ ⁽¹⁾.
- 1.1.3. PART III: the installation on vehicles of categories N₂, N₃, O₃ and O₄ ⁽¹⁾ of lateral protection devices which have been type-approved according to Part II of this Regulation and to the completion of vehicles partially approved according to Part I and completed with lateral protection devices which have been type-approved according to Part II of this Regulation;

1.2. This Regulation does not apply to:

- 1.2.1. tractors for semi-trailers;
- 1.2.2. vehicles designed and constructed for special purposes where it is not possible, for practical reasons, to fit lateral protection devices.

2. DEFINITIONS

For the purposes of this Regulation:

2.1. Definitions common to Parts I, II and III

- 2.1.1. 'Unladen mass' means the mass of the vehicle in running order, unoccupied and unladen but complete with fuel, coolant, lubricant, tools and a spare wheel (if provided as standard equipment by the vehicle manufacturer);
- 2.1.2. 'Maximum mass' means the mass stated by the vehicle manufacturer to be technically permissible (this mass may be higher than the 'permissible maximum mass' laid down by the national administration);
- 2.1.3. 'Unprotected road users' means pedestrians, cyclists or motor cyclists using the road in such a way that they are liable to fall under the sides of the vehicle and be caught under the wheels;
- 2.1.4. 'Lateral protection device (LPD)' consist of longitudinal member(s) and link(s) (fixing elements) to the chassis side members or other structural parts of the vehicle, designed to offer effective protection to unprotected road users against the risk of falling under the sides of the vehicle and being caught under the wheels. Parts of the vehicle can also be used as LPD.

⁽¹⁾ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.2, paragraph 2.

- 2.2. Definitions specific to Part I
 - 2.2.1. 'Approval of a vehicle' means the approval of a complete, incomplete or completed vehicle type with regard to its lateral protection;
 - 2.2.2. 'Vehicle type' means a category of vehicle which does not differ with respect to the essential points such as the width of the rear axle, the overall width, the dimensions, the shape and the materials of the whole side of the vehicle (including the cab if fitted), and the characteristics of the suspension in so far as they have a bearing on the requirements specified in paragraph 12.
- 2.3. Definitions specific to Part II
 - 2.3.1. 'Approval of an LPD' means the approval of a type of LPD with respect to the requirements laid down in paragraph 14;
 - 2.3.2. 'Type of LPD' means an LPD that does not differ with respect to the essential characteristics such as shape, dimensions, attachment, materials and the markings specified in paragraph 5.2.4.
- 2.4. Definitions specific to Part III
 - 2.4.1. 'Approval of a vehicle' means the approval of a vehicle type with regard to the installation of LPD of a type approved according to Part II of this Regulation, including, if necessary, the completion of a vehicle partially approved according to Part I;
 - 2.4.2. 'Vehicle type' means vehicles which do not differ in such essential aspects as:
 - (a) the width of the rear axle;
 - (b) the structure, the dimensions, the shape and the height from the ground of the sides of the vehicle and the characteristics of the suspension, in so far as they have a bearing on the requirements specified in paragraph 15 of this Regulation;
 - (c) the approved LPD fitted to the vehicle.
- 3. REQUIREMENTS
 - 3.1. GENERAL
 - 3.1.1. The requirements of this Regulation shall be considered satisfied either:
 - 3.1.1.1. If the vehicle is equipped with LPD in accordance with the requirements of Part I and/or Part III; or
 - 3.1.1.2. If the vehicle is so designed and/or equipped at the side that, by virtue of their shape and characteristics, its component parts may be incorporated and/or regarded as replacing the LPD. Components whose combined function satisfies the requirements set out in paragraphs 12 and 15 are considered to form an LPD.
 - 3.2. VEHICLE TEST CONDITIONS

Compliance with the requirements contained in Part I and Part III, shall be determined with the vehicle positioned in accordance with Annex 3.
- 4. APPLICATION FOR APPROVAL
 - 4.1. Application for approval pursuant to Part I of this Regulation
 - 4.1.1. The application for approval of a vehicle type to Part I of this Regulation shall be submitted by the vehicle manufacturer or by his duly accredited representative.
 - 4.1.2. It shall be accompanied by the undermentioned documents in triplicate and by the following particulars:
 - 4.1.2.1. A detailed description of the vehicle type with respect to its state of completion, structure, dimensions, lines and constituent materials;
 - 4.1.2.2. Drawings of the vehicle showing the vehicle type in side and rear elevation and design details of the lateral parts of the structure;
 - 4.1.2.3. A detailed description of the LPD: their dimensions, lines, constituent materials, design details of their links to the vehicle and position on the vehicle.

- 4.1.3. A vehicle representative of the type to be approved shall be submitted to the technical service responsible for conducting the approval tests.
- 4.1.3.1. A vehicle not comprising all the components proper to the type may be accepted for approval provided that it can be shown that the absence of the components omitted has no detrimental effect on the results of the approval, so far as the requirements of this part are concerned.
- 4.1.3.2. It shall be the responsibility of the applicant for approval to show that acceptance of the variants referred to in paragraph 4.1.3.1 is compatible with compliance with the requirements of this part.
- 4.2. Application for approval pursuant to Part II of this Regulation
- 4.2.1. The application for approval pursuant to Part II of this Regulation shall be submitted by the manufacturer of the LPD or by his duly accredited representative.
- 4.2.2. It shall be accompanied by the undermentioned documents in triplicate and by the following particulars:
 - 4.2.2.1. A detailed description of the LPD: their dimensions, lines, constituent materials and the details of their intended links to the vehicle;
 - 4.2.2.2. A sample of the type of LPD: the sample must be clearly and indelibly marked on all its main components with the applicant's trade name or mark and the type designation;
 - 4.2.2.3. A LPD representative of the type to be approved shall be submitted to the technical service responsible for conducting the approval tests.
- 4.3. Application for approval pursuant to Part III of this Regulation
- 4.3.1. The application for approval pursuant to Part III of this Regulation shall be submitted by the vehicle manufacturer or by his duly accredited representative.
- 4.3.2. It shall be accompanied by the undermentioned documents in triplicate and by the following particulars:
 - 4.3.2.1. Drawings of the vehicle showing, according to the criteria referred to in paragraph 2.4.2, the vehicle type in side elevation with an indication of the position of the approved LPD and design details of their links to the vehicle;
 - 4.3.2.2. A list of the LPD intended to be fitted to the vehicle;
 - 4.3.2.3. At the request of the approval authority the type approval communication form (i.e. Annex 1, Appendix 2 to this Regulation) for the LPD shall also be supplied.
- 4.3.3. A vehicle representative of the type to be approved and fitted with approved LPD shall be submitted to the technical service responsible for conducting the approval tests.
- 4.3.3.1. A vehicle not comprising all the components proper to the type may be accepted for approval provided that it can be shown that the absence of the components omitted has no detrimental effect on the results of the approval, so far as the requirements of this part are concerned.
- 4.3.3.2. It shall be the responsibility of the applicant for approval to show that acceptance of the variants referred to in paragraph 4.3.3.1 is compatible with compliance with the requirements of this part.
- 5. APPROVAL
- 5.1. Approval pursuant to Part I of this Regulation
- 5.1.1. If the complete, incomplete or completed vehicle submitted for approval pursuant to this part meets the requirements of paragraph 12, approval of that vehicle type shall be granted.
- 5.1.2. An approval number shall be assigned to each type approved. Its first two digits (at present 01 corresponding to the 01 series of amendment) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another vehicle type as defined in this Regulation.

- 5.1.3. Notice of approval or refusal or extension of approval of a vehicle type pursuant to this part shall be communicated to the Contracting Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in Annex 1, Appendix 1, to this Regulation.
- 5.1.4. There shall be affixed, conspicuously and in a readily accessible location specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation, an approval mark consisting of:
- 5.1.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽²⁾;
- 5.1.4.2. The number of this Regulation, followed by the letter 'R', a dash and the approval number to the right of the circle prescribed in paragraph 5.1.4.1.
- 5.1.5. If the vehicle conforms to a vehicle type approved, under one or more other Regulations annexed to the Agreement, in the country that has granted approval under this Regulation, the symbol prescribed in paragraph 5.1.4.1 need not be repeated; in such a case the Regulation and approval numbers and the additional symbols of all the Regulations under which approval has been granted in the country that has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 5.1.4.1.
- 5.1.6. The approval mark shall be clearly legible and be indelible.
- 5.1.7. The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.
- 5.1.8. Annex 2 to this Regulation gives examples of arrangements of approval marks.
- 5.2. Approval pursuant to Part II of this Regulation
- 5.2.1. If the LPD submitted for approval pursuant to this part meet the requirements of paragraph 14, approval of that type of LPD shall be granted.
- 5.2.2. An approval number shall be assigned to each type approved. Its first two digits (at present 01 corresponding to the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another type of device.
- 5.2.3. Notice of approval, or refusal or extension of approval of a type of LPD pursuant to this part shall be communicated to the Contracting Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in Annex 1, Appendix 2, to this Regulation.
- 5.2.4. There shall be affixed, conspicuously and in a readily accessible location specified on the approval form, to the main components of LPD conforming to a type of LPD approved under this Regulation an approval mark consisting of:
- 5.2.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽²⁾;
- 5.2.4.2. The approval number to the right of the circle prescribed in paragraph 5.2.4.1.

⁽²⁾ 1 for Germany, 2 for France, 3 for Italy, 4 for the 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 for 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 for Kazakhstan, 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 Union (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 South Africa, 48 for New Zealand, 49 for Cyprus, 50 for Malta, 51 for the Republic of Korea, 52 for Malaysia, 53 for Thailand, 54 and 55 (vacant), 56 for Montenegro, 57 (vacant) and 58 for Tunisia. Other 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 Approvals 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.

- 5.2.5. The approval mark shall be clearly legible and be indelible.
- 5.2.6. Annex 2 to this Regulation gives examples of arrangements of approval marks.
- 5.3. Approval pursuant to Part III of this Regulation
 - 5.3.1. If the vehicle submitted for approval pursuant to this part is equipped with an approved LPD and meets the requirements of paragraph 15, approval of that vehicle type shall be granted.
 - 5.3.2. An approval number shall be assigned to each type approved. Its first two digits (at present 01 corresponding to the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another vehicle type.
 - 5.3.3. Notice of approval or refusal or extension of approval of a vehicle type pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in Annex 1, Appendix 3, to this Regulation.
 - 5.3.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation an approval mark consisting of:
 - 5.3.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽²⁾;
 - 5.3.4.2. The number of this Regulation, followed by the letter 'R', a dash and the approval number to the right of the circle prescribed in paragraph 5.3.4.1.
 - 5.3.5. If the vehicle conforms to a vehicle type approved, under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 5.3.4.1 need not be repeated; in such a case the Regulation and approval numbers and the additional symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 5.3.4.1.
 - 5.3.6. The approval mark shall be clearly legible and be indelible.
 - 5.3.7. The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.
 - 5.3.8. Annex 2 to this Regulation gives examples of arrangements of approval marks.
- 6. MODIFICATION AND EXTENSION OF APPROVAL OF A TYPE OF VEHICLE OR LPD
 - 6.1. Every modification of the type of vehicle or LPD shall be notified to the administrative department which approved the type. The department may then either:
 - 6.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the vehicle or LPD still complies with the requirements; or
 - 6.1.2. Require a further test report from the technical service responsible for conducting the tests.
 - 6.2. Confirmation or refusal of approval, specifying the modifications, shall be communicated by the procedure specified in paragraph 5.1.3, 5.2.3 or 5.3.3, as applicable, to the Contracting Parties to the Agreement applying this Regulation.
 - 6.3. The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Contracting Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.
- 7. CONFORMITY OF PRODUCTION

The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2), with the following requirements:

- 7.1. Every vehicle or LPD approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements of the respective parts above;
- 7.2. The approval authority that has granted type approval may at any time verify the conformity control methods applicable to each production facility.
8. PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 8.1. The approval granted in respect of a type of vehicle or LPD pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 12, 14 or 15, as applicable, are not complied with.
- 8.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in Annex 1 to this Regulation.
9. PRODUCTION DEFINITELY DISCONTINUED
- If the holder of the approval completely ceases to manufacture a type of vehicle or LPD approved in accordance with this Regulation, he shall so inform the authority that granted the approval. Upon receiving the relevant communication that authority shall inform thereof the other Contracting Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.
10. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS
- The Contracting Parties to the 1958 Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments that grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.
11. TRANSITIONAL PROVISIONS
- 11.1. 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 ECE approval under this Regulation as amended by the 01 series of amendments.
- 11.2. As from 12 months after the date of entry into force of the 01 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the type of vehicle or LPD to be approved meets the requirements of this Regulation as amended by the 01 series of amendments.
- 11.3. Even after the entry into force of the 01 series of amendments to this Regulation, approvals issued to the 00 series of amendments shall remain valid and Contracting Parties applying this Regulation shall continue to grant extensions to such approvals and shall continue to accept them.
- 11.4. No Contracting Party applying this Regulation shall refuse national or regional type approval of a vehicle type approved to the 00 series of amendments to this Regulation.

PART I — APPROVAL OF VEHICLES WITH REGARD TO THEIR LATERAL PROTECTION DEVICES (LPD)

12. REQUIREMENTS
- 12.1. LPD shall not increase the overall width of the vehicle and the main part of their outer surface shall not be more than 150 mm inboard from the outermost plane (maximum width) of the vehicle. Their forward end may be turned inwards on some vehicles in accordance with paragraphs 12.4.3 and 12.4.4. Their rearward end shall not be more than 30 mm inboard from the outermost edge of the rear tyres (excluding any bulging of the tyres close to the ground) over at least the rearmost 250 mm.
- 12.2. The outer surface of the LPD shall be smooth, and so far as possible continuous from front to rear; adjacent parts may however overlap provided that the overlapping edge faces rearwards or downwards, or a gap of not more than 25 mm measured longitudinally may be left, provided that the rearward part does not protrude outboard of the forward part; domed heads of bolts or rivets may protrude beyond the surface to a distance not exceeding 10 mm and other parts may

protrude to the same extent provided that they are smooth and similarly rounded; all external edges and corners that may be contacted by a sphere of 100 mm diameter shall be rounded with a radius not less than 2,5 mm; those protruding less than 5 mm shall have blunted outward facing edges.

- 12.3. LPD may consist of a continuous flat surface, or of one or more horizontal rails, or a combination of surface and rails; when rails are used they shall be not more than 300 mm apart and not less than:

(a) 50 mm high in the case of vehicles of categories N₂ and O₃;

(b) 100 mm high and essentially flat in the case of vehicles of categories N₃ and O₄.

Combinations of surfaces and rails shall form a practically continuous LPD subject, however, to the provisions of paragraph 12.2.

- 12.4. The forward edge of LPD shall be constructed as follows:

- 12.4.1. Their position shall be:

12.4.1.1. On a vehicle of category N₂ or N₃: not more than 300 mm to the rear of the vertical plane perpendicular to the longitudinal plane of the vehicle and tangential to the outer surface of the tyre on the wheel immediately forward of the device;

12.4.1.2. On a drawbar trailer: not more than 500 mm to the rear of the plane defined in paragraph 12.4.1.1;

12.4.1.3. On a semi-trailer: not more than 250 mm to the rear of the transverse median plane of the support legs, if support legs are fitted, but in any case the distance from the front edge to the transverse plane passing through the centre of the kingpin in its rearmost position may not exceed 2,7 m;

12.4.1.4. On a central axle trailer: in the area forward of the transverse plane passing through the centre of the front axle but not more than the front of the bodywork, if any, to ensure the normal manoeuvrability of the trailer.

12.4.2. Where the forward edge lies in an open space of more than 25 mm, the edge shall consist of a continuous vertical member extending over the whole height of the device; the outer and forward faces of this member shall measure at least 50 mm rearwards and be turned 100 mm inwards or have a minimum radius of 50 mm in the case of vehicles of categories N₂ and O₃ and at least 100 mm rearwards and be turned 100 mm inwards or have a minimum radius of 100 mm in the case of vehicles of categories N₃ and O₄.

12.4.3. On a vehicle of category N₂ or N₃ where the 300 mm dimension referred to in paragraph 12.4.1.1 falls within the cab, the device shall be so constructed that the gap between its forward edge and the cab panels do not exceed 100 mm and, if necessary, shall be turned in through an angle not exceeding 45°. In this case, the provisions of paragraph 12.4.2 are not applicable.

12.4.4. At the manufacturer's option, on a vehicle of category N₂ or N₃ where the 300 mm dimension referred to in paragraph 12.4.1.1 falls behind the cab and the device extends forward to within 100 mm of the cab, then the provisions of paragraph 12.4.3 may be met.

12.5. The rearward edge of LPD shall not be more than 300 mm forward of the vertical plane perpendicular to the longitudinal plane of the vehicle and tangential to the outer surface of the tyre on the wheel immediately to the rear; a continuous vertical member is not required on the rear edge.

12.6. The requirements of paragraphs 12.4 and 12.5 are independent and cannot be combined. However, in the case of a vehicle having two steered axles an LPD shall not be required between those two axles if the longitudinal distance between their centre lines does not exceed 2 100 mm.

12.7. The front and rear overhang of the LPD shall not exceed the distance between the links and the centre of the ram measured during the test prescribed in paragraph 12.10. In the case of several such distances the greatest of the test distances shall not be exceeded.

12.8. The lower edge of LPD shall at no point be more than 550 mm above the ground.

- 12.9. The upper edge of LPD shall not be more than 350 mm below that part of the structure of the vehicle, cut or contacted by a vertical plane tangential to the outer surface of the tyres, excluding any bulging close to the ground, except in the following cases:
- 12.9.1. Where the plane in paragraph 12.9 does not cut the structure of the vehicle, then the upper edge shall be level with the surface of the load-carrying platform, or 950 mm from the ground, whichever is the less;
- 12.9.2. Where the plane in paragraph 12.9 cuts the structure of the vehicle at a level more than 1,3 m above the ground, then the upper edge of the device shall not be less than 950 mm above the ground;
- 12.9.3. On a vehicle specially designed and constructed, and not merely adapted, for the carriage of a container or demountable body, the upper edge of the device may be determined in accordance with paragraphs 12.9.1 and 12.9.2, the container or body being considered as part of the vehicle;
- 12.9.4. On a vehicle fitted with a crane for loading, unloading or other operations, having a permanently fitted operator's workstation or operating platform from which the crane may be controlled, the upper edge of the LPD may be determined in accordance with paragraphs 12.9.1 and 12.9.2, the workstation or operating platform being considered as if it was the load carrying platform.
- 12.10. LPD shall be essentially rigid, securely mounted (they shall not be liable to loosening due to vibration in normal use of the vehicle) and, except as regards the parts listed in paragraph 12.11, made of metal or any other suitable material. LPD shall be considered suitable if they are capable of withstanding a horizontal static force of 1 kN applied perpendicularly to any part of their external surface by the centre of a ram the face of which is circular and flat, with a diameter of 220 mm $\pm$ 10 mm, and if the deflection of the device under load measured at the centre of the ram is then not more than:
- (a) 30 mm over the rearmost 250 mm of the device; and
- (b) 150 mm over the remainder of the device.
- At the request of the manufacturer, compliance with this requirement may be demonstrated by calculation. The validity of the calculation method shall be established to the satisfaction of the Technical Service.
- 12.11. Components permanently fixed to the vehicle, e.g. spare wheels, battery box, air tanks, fuel tanks, lamps, reflectors and tool boxes may be incorporated in a device, provided that they meet the dimensional requirements of this part. The requirements of paragraph 12.2 shall apply as regards gaps between protective devices and permanently fixed components.
- 12.12. The device may not be used for the attachment of brake, air or hydraulic pipes.
- 12.13. LPD may be so designed to have several positions at the side of the vehicle. In this event, there must be a guaranteed method of securing them in their normal operating position so that any unintentional change of position is precluded. The force applied by the operator to vary the position of the device shall not exceed 40 daN.
13. DEROGATIONS
- 13.1. By derogation from the above provisions, vehicles of the following types need comply only as indicated in each case:
- 13.1.1. An extendible trailer shall comply with all the requirements of paragraph 12 when closed to its minimum length; when the trailer is extended, however, the LPD need only comply with paragraphs 12.8, 12.9, and 12.10, and with either paragraph 12.4 or 12.5, but not necessarily both; extension of the trailer shall not produce gaps along the length of the LPD;

- 13.1.2. A tank vehicle, that is a vehicle designed solely for the carriage of a fluid substance in a closed tank permanently fitted to the vehicle and provided with hose or pipe connections for loading or unloading, shall be fitted with LPD that comply so far as is practicable with all the requirements of paragraph 12; strict compliance may be waived only where operational requirements make this necessary;
- 13.1.3. On a vehicle fitted with extendible legs to provide additional stability during loading, unloading or other operations for which the vehicle is designed, LPD may be arranged with additional gaps where these are necessary to permit extension of the legs;
- 13.1.4. On a vehicle equipped with lashing and securing points in accordance with ISO 9367-1:1989 or ISO 9367-2:1994 for water borne transportation on Ro/Ro vessels, gaps shall be permitted within LPD to accept the attachment of restraint devices.
- 13.1.5. On a vehicle fitted with a crane for loading, unloading or other operations for which the vehicle is designed, making it impracticable to comply with all the requirements of paragraph 12, the LPD may be arranged with additional gaps where these are necessary to permit the movement or stowage of the crane.
- 13.2. If the sides of the vehicle are so designed and/or equipped that by their shape and characteristics the component parts together meet the requirements of paragraph 12, they may be regarded as replacing the LPD.

PART II — APPROVAL OF LATERAL PROTECTION DEVICES (LPD)

14. REQUIREMENTS

- 14.1. The outer surface of the LPD shall be smooth, and so far as possible continuous from front to rear; adjacent parts may however overlap provided that the overlapping edge faces rearwards or downwards, or a gap of not more than 25 mm measured longitudinally may be left, provided that the rearward part does not protrude outboard of the forward part; domed heads of bolts or rivets may protrude beyond the surface to a distance not exceeding 10 mm and other parts may protrude to the same extent provided that they are smooth and similarly rounded; all external edges and corners that may be contacted by a sphere of 100 mm diameter shall be rounded with a radius not less than 2,5 mm; those protruding less than 5 mm shall have blunted outward facing edges.
- 14.2. LPD may consist of a continuous flat surface, or of one or more horizontal rails, or a combination of surface and rails; when rails are used they shall be not more than 300 mm apart and not less than:
 - (a) 50 mm high in the case of LPD for vehicles of categories N₂ and O₃; or
 - (b) 100 mm high and essentially flat in the case of LPD for vehicles of categories for N₃ and O₄.

Combinations of surfaces and rails shall form a practically continuous LPD subject, however, to the provisions of paragraph 14.1.

- 14.3. The forward edge shall consist of a continuous vertical member extending over the whole height of the device; the outer and forward faces of this member shall measure at least 50 mm rearwards and be turned 100 mm inwards or have a minimum radius of 50 mm in the case of vehicles of categories N₂ and O₃ and at least 100 mm rearwards and be turned 100 mm inwards or a minimum radius of 100 mm in the case of vehicles of categories N₃ and O₄.
- 14.4. LPD shall be essentially rigid and, except as regards the parts listed in paragraph 14.5, made of metal or any other suitable material. LPD shall be considered suitable if they are capable of withstanding a horizontal static force of 1 kN applied perpendicularly to any part of their external surface by the centre of a ram the face of which is circular and flat, with a diameter of 220 mm ± 10 mm, and if the deflection of the device under load measured at the centre of the ram is then not more than:
 - (a) 30 mm over the rearmost 250 mm of the device; and
 - (b) 150 mm over the remainder of the device.

At the request of the manufacturer, compliance with this requirement may be demonstrated by calculation. The validity of the calculation method shall be established to the satisfaction of the Technical Service.

- 14.5. Components permanently fixed to the vehicle, e.g. spare wheels, battery box, air tanks, fuel tanks, lamps, reflectors and tool boxes may be incorporated in a device, provided that they meet the dimensional requirements of this part.
- 14.6. LPD may be so designed to have several positions at the side of the vehicle. In this event, there must be a guaranteed method of securing them in their normal operating position so that any unintentional change of position is precluded. The force applied by the operator to vary the position of the device shall not exceed 40 daN.

PART III — APPROVAL OF A VEHICLE WITH REGARD TO THE INSTALLATION OF LATERAL PROTECTION DEVICES (LPD) OF A TYPE APPROVED ACCORDING TO PART II OF THIS REGULATION

15. REQUIREMENTS

- 15.1. LPD shall not increase the overall width of the vehicle and the main part of its outer surface shall not be more than 150 mm inboard from the outermost plane (maximum width) of the vehicle. Their forward end may be turned inwards on some vehicles in accordance with paragraphs 15.2.3 and 15.2.4. Their rearward end shall not be more than 30 mm inboard from the outermost edge of the rear tyres (excluding any bulging of the tyres close to the ground) over at least the rearmost 250 mm.
- 15.2. The forward edge of LPD shall be constructed as follows:
 - 15.2.1. Their position shall be:
 - 15.2.1.1. On a vehicle of category N₂ or N₃: not more than 300 mm to the rear of the vertical plane perpendicular to the longitudinal plane of the vehicle and tangential to the outer surface of the tyre on the wheel immediately forward of the device;
 - 15.2.1.2. On a drawbar trailer: not more than 500 mm to the rear of the plane defined in paragraph 15.2.1.1;
 - 15.2.1.3. On a semi-trailer: not more than 250 mm to the rear of the transverse median plane of the support legs, if support legs are fitted, but in any case the distance from the front edge to the transverse plane passing through the centre of the kingpin in its rearmost position may not exceed 2,7 m.
 - 15.2.2. Where the forward edge lies in an open space more than 25 mm, the edge shall consist of a continuous vertical member extending over the whole height of the device; the outer and forward faces of this member shall measure at least 50 mm rearwards and be turned 100 mm inwards or have a minimum radius of 50 mm in the case of vehicles of categories N₂ and O₃ and at least 100 mm rearwards and be turned 100 mm inwards or have a minimum radius of 100 mm in the case of vehicles of categories N₃ and O₄.
 - 15.2.3. On a vehicle of category N₂ or N₃ where the 300 mm dimension referred to in paragraph 15.2.1.1 falls within the cab, the device shall be so constructed that the gap between its forward edge and the cab panels do not exceed 100 mm and, if necessary, shall be turned in through an angle not exceeding 45°. In this case, the provisions of paragraph 15.2.2 are not applicable.
 - 15.2.4. At the manufacturer's option, on a vehicle of category N₂ or N₃ where the 300 mm dimension referred to in paragraph 15.2.1.1 falls behind the cab and the device extends forward to within 100 mm of the cab, then the provisions of paragraph 15.2.3 may be met.
- 15.3. The rearward edge of LPD shall not be more than 300 mm forward of the vertical plane perpendicular to the longitudinal plane of the vehicle and tangential to the outer surface of the tyre on the wheel immediately to the rear; a continuous vertical member is not required on the rear edge.
- 15.4. The requirements of paragraphs 15.2 and 15.3 are independent and cannot be combined. However, in the case of a vehicle having two steered axles an LPD shall not be required between those two axles if the longitudinal distance between their centre lines does not exceed 2 100 mm.

- 15.5. The front and rear overhang of the LPD shall not exceed the distance between the links and the centre of the ram measured during the test prescribed in paragraph 14.4. In the case of several such distances the greatest of the test distances shall not be exceeded.
- 15.6. The lower edge of LPD shall at no point be more than 550 mm above the ground.
- 15.7. The upper edge of LPD shall not be more than 350 mm below that part of the structure of the vehicle, cut or contacted by a vertical plane tangential to the outer surface of the tyres, excluding any bulging close to the ground, except in the following cases:
- 15.7.1. Where the plane in paragraph 15.7 does not cut the structure of the vehicle, then the upper edge shall be level with the surface of the load-carrying platform, or 950 mm from the ground, whichever is the less;
- 15.7.2. Where the plane in paragraph 15.7 cuts the structure of the vehicle at a level more than 1,3 m above the ground, then the upper edge of the device shall not be less than 950 mm above the ground;
- 15.7.3. On a vehicle specially designed and constructed, and not merely adapted, for the carriage of a container or demountable body, the upper edge of the LPD may be determined in accordance with paragraphs 15.7.1 and 15.7.2, the container or body being considered as part of the vehicle;
- 15.7.4. On a vehicle fitted with a crane for loading, unloading or other operations, having a permanently fitted operator workstation or operating platform from which the crane may be controlled, the upper edge of the LPD may be determined in accordance with paragraphs 12.9.1 and 12.9.2, the workstation or operating platform being considered as if it was the load carrying platform.
- 15.8. LPD shall be securely mounted; they shall not be liable to loosening due to vibration in normal use of the vehicle.
- 15.9. Components permanently fixed to the vehicle, e.g. spare wheels, battery box, air tanks, fuel tanks, lamps, reflectors and tool boxes may be incorporated in a device, provided that they meet the dimensional requirements of this part or they are approved according to Part I. The requirements of paragraph 12.2 or 14.1 shall apply as regards gaps between protective devices and permanently fixed components.
- 15.10. LPD may not be used for the attachment of brake, air or hydraulic pipes.
16. DEROGATIONS
- 16.1. By derogation from the above provisions, vehicles of the following types need comply only as indicated in each case:
- 16.1.1. An extendible trailer shall comply with all the requirements of paragraph 15 when closed to its minimum length; when the trailer is extended, however, the LPD shall comply with paragraphs 15.6, 15.7, and 15.8, and with either paragraph 15.2 or 15.3, but not necessarily both; extension of the trailer shall not produce gaps along the length of the LPD;
- 16.1.2. A tank-vehicle, that is a vehicle designed solely for the carriage of a fluid substance in a closed tank permanently fitted to the vehicle and provided with hose or pipe connections for loading or unloading, shall be fitted with devices that comply so far as is practicable with all the requirements of paragraph 15; strict compliance may be waived only where operational requirements make this necessary;
- 16.1.3. On a vehicle fitted with extendible legs to provide additional stability during loading, unloading or other operations for which the vehicle is designed, the LPD may be arranged with additional gaps where these are necessary to permit extension of the legs;

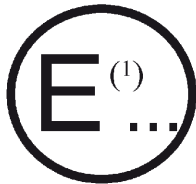
- 16.1.4. On a vehicle equipped with lashing and securing points in accordance with ISO 9367-1:1989 or ISO 9367-2:1994 for water borne transportation on Ro/Ro vessels, gaps shall be permitted within the LPD to accept the attachment of restraint devices;
 - 16.1.5. A vehicle fitted with a crane for loading, unloading or other operations for which the vehicle is designed, where the movement or stowage of the crane renders it impracticable to fit LPD, shall be fitted with LPD that comply so far as is practicable with all the requirements of paragraph 12; strict compliance may be waived only where operational requirements make this necessary.
-

ANNEX 1

Appendix 1

COMMUNICATION

(Maximum format: A4 (210 × 297 mm))



issued by: Name of administration:

.....

.....

.....

Communication concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a complete/incomplete/completed ⁽²⁾ vehicle type with regard to its lateral protection device (LPD) pursuant to Part I of Regulation No 73

Approval No Extension No

1. Trade name or mark of the vehicle
2. Vehicle type
3. Manufacturer's name and address
4. If applicable, name and address of manufacturer's representative
5. Brief description of the vehicle type as regards its state of completion, structure, dimensions, lines and any constituent materials
6. Brief description of the LPD, as regards its lines, dimensions and constituent materials
7. Vehicle category
8. Vehicle submitted for approval on
9. Technical service responsible for conducting approval tests
10. Date of report issued by that service
11. Number of report issued by that service
12. Approval granted/refused/extended/withdrawn ⁽²⁾
13. Position of approval mark on the vehicle
14. Place
15. Date
16. Signature
17. The following documents, bearing the approval number shown above, are available upon request

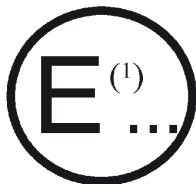
⁽¹⁾ Distinguishing number of the country which has granted/extended refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

Appendix 2

COMMUNICATION

(Maximum format: A4 (210 × 297 mm))



issued by: Name of administration:

.....

.....

.....

Communication concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a type of: lateral protection device (LPD)
 pursuant to Part II of Regulation No 73

Approval No Extension No

1. Trade name or mark of LPD
2. Type of LPD
3. Name and address of manufacturer
4. If applicable, name and address of manufacturer's representative
5. Characteristics of the LPD (dimensions and its links)
6. Test conducted on a rigid bench/on a vehicle/on a representative part of the vehicle ⁽²⁾
7. Position on the LPD of the points of application of the test forces
8. Vehicle category on which the LPD may be installed
9. Device submitted for approval on
10. Technical service responsible for conducting approval tests
11. Date of report issued by that service
12. Number of report issued by that service
13. Approval granted/refused/extended/withdrawn ⁽²⁾
14. Position of approval mark on the LPD
15. Place
16. Date
17. Signature
18. The following documents, bearing the approval number shown above, are available upon request

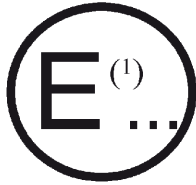
⁽¹⁾ Distinguishing number of the country which has granted/extended refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

Appendix 3

COMMUNICATION

(Maximum format: A4 (210 × 297 mm))



issued by: Name of administration:

.....

.....

.....

Communication concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to the installation of a lateral protection device (LPD) of an approved type pursuant to Part III of Regulation No 73

Approval No Extension No

1. Trade name or mark of the vehicle
2. Vehicle type
3. Manufacturer's name and address
4. If applicable, name and address of manufacturer's representative
5. Brief description of the vehicle type as regards its dimensions and lines
6. Trade name or mark of the LPD(s) and its/their approval number(s), including the approval number of a partial vehicle approval granted according to Part I
7. Vehicle category
8. Vehicle submitted for approval on
9. Technical service responsible for conducting approval tests
10. Date of report issued by that service
11. Number of report issued by that service
12. Approval granted/refused/extended/withdrawn ⁽²⁾
13. Position of approval mark on the vehicle
14. Place
15. Date
16. Signature
17. The following documents, bearing the approval number shown above, are available upon request

⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

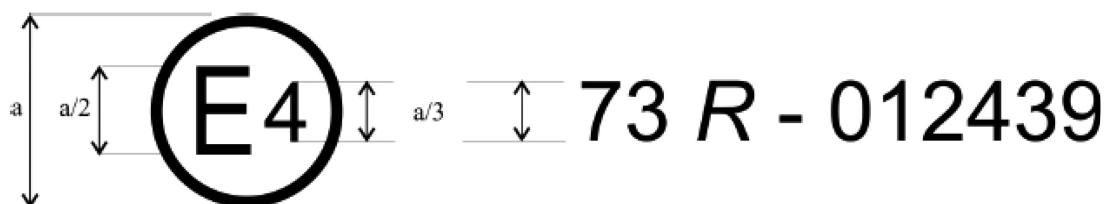
⁽²⁾ Strike out what does not apply.

ANNEX 2

EXAMPLES OF APPROVAL MARKS

MODEL A

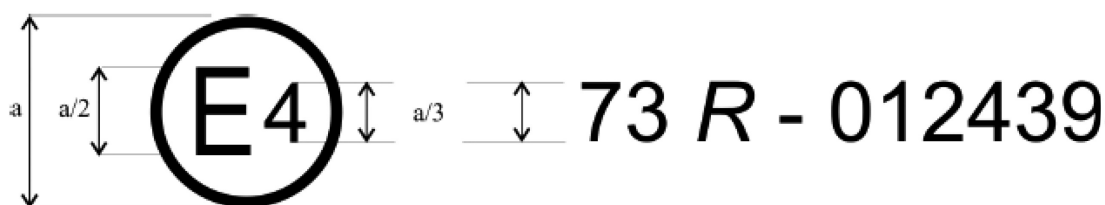
(see paragraphs 5.1.4 and 5.3.4 of this Regulation)

 $a = 8 \text{ mm min}$

The above approval mark affixed to a vehicle or to an LPD shows that the vehicle type concerned has, with regard to its lateral protection, been approved in the Netherlands (E 4) pursuant to Regulation No 73 under approval number 012439 as a complete vehicle. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No 73 as amended by the 01 series of amendments.

MODEL B

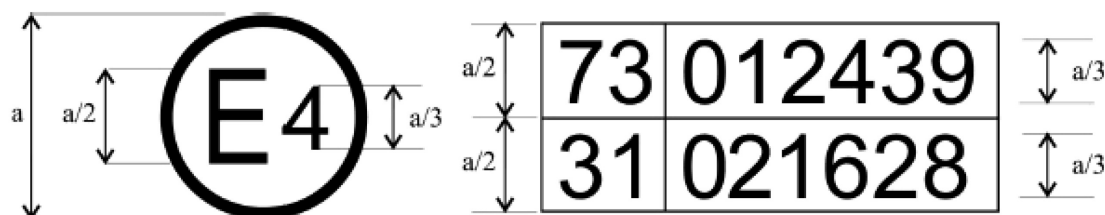
(see paragraph 5.2.4 of this Regulation)



The above approval mark affixed to an LPD shows that the LPD type concerned has, with regard to its lateral protection, been approved in the Netherlands (E 4) pursuant to Regulation No 73 under approval number 012439. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No 73 as amended by the 01 series of amendments.

MODEL C

(see paragraphs 5.1.5 and 5.3.5 of this Regulation)



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 No 73 and No 31⁽¹⁾. The first two digits of the approval numbers indicate that, at the dates when the respective approvals were granted, Regulation No 73 included the 01 series of amendments and the approval was granted for a completed vehicle, and Regulation No 31 included the 02 series of amendments.

⁽¹⁾ This latter number is given as an example only.

ANNEX 3

TEST CONDITIONS

1. TEST CONDITIONS FOR LPD

1.1. At the request of the manufacturer the test may be conducted either:

1.1.1. On a vehicle of the type for which LPD is intended; in this case the conditions set out in paragraph 2 shall be observed; or

1.1.2. On a part of the chassis of the vehicle type for which the LPD is intended; this part shall be representative of the vehicle type(s) in question; or

1.1.3. On a rigid test bench.

1.2. In the case of paragraphs 1.1.2 and 1.1.3 the parts used to connect the LPD to part of the vehicle chassis or bodywork or to the rigid test bench shall be equivalent to those which are used to secure the LPD when it is installed on the vehicle.

2. TEST CONDITIONS FOR VEHICLES

2.1. The vehicle shall be positioned on a horizontal, rigid and smooth surface.

2.2. The steered wheels shall be in the straight-ahead position.

2.3. The tyres shall be inflated to the pressure recommended by the vehicle manufacturer.

2.4. The vehicle may, if necessary to achieve the test forces required in paragraphs 2.8 and 14.4, be restrained by any method, this method to be specified by the vehicle manufacturer.

2.5. Vehicles equipped with hydropneumatic, hydraulic or pneumatic suspension or a device for automatic levelling according to load shall be tested in the normal unladen running condition specified by the manufacturer.

2.6. Semi-trailers shall be positioned such that the load platform is essentially horizontal.

Only the original UN/ECE texts have legal effect under international public law. The status and date of entry into force of this Regulation should be checked in the latest version of the UN/ECE status document TRANS/WP.29/343, available at:
<http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29fdocstts.html>

Regulation No 97 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of vehicle alarm systems (VAS) and of motor vehicles with regard to their alarm systems (AS)

Incorporating all valid text up to:

Supplement 6 to the 01 series of amendments — Date of entry into force: 23 June 2011

CONTENTS

REGULATION

1. Scope

Part I — Approval of vehicle alarm systems

2. Definitions

3. Application for approval of VAS

4. Approval

5. General specifications

6. Particular specifications

7. Operation parameters and test conditions

8. Instructions

9. Modification of the VAS type and extension of approval

10. Conformity of production

11. Penalties for non-conformity of production

12. Production definitely discontinued

13. Names and addresses of Technical Services responsible for conducting approval tests, and of Administrative Departments

Part II — Approval of a vehicle with regard to its alarm system

14. Definitions

15. Application for approval

16. Approval

17. General specifications

18. Particular specifications

19. Test conditions

20. Instructions

21. Modification of the vehicle type and extension of approval

22. Conformity of production

23. Penalties for non-conformity of production

24. Production definitely discontinued

25. Names and addresses of Technical Services responsible for conducting approval tests, and of Administrative Departments

Part III — Approval of immobilisers and approval of a vehicle with regard to its immobiliser

26. Definitions
27. Application for approval of an immobiliser
28. Application for approval of a vehicle
29. Approval of an immobiliser
30. Approval of a vehicle
31. General specifications
32. Particular specifications
33. Operation parameters and test conditions
34. Instructions
35. Modifications of the immobiliser type or vehicle type and extension of approval
36. Conformity of production
37. Penalties for non-conformity of production
38. Production definitely discontinued
39. Transitional provisions
40. Names and addresses of Technical Services responsible for conducting approval tests, and of Administrative Departments

ANNEXES

- Annex 1 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a type of vehicle alarm system (VAS) pursuant to Part I of Regulation No 97
- Annex 1A — Information documents
- Annex 2 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a vehicle type with regard to its alarm system pursuant to Part II of Regulation No 97
- Annex 3 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a type of immobiliser pursuant to Part III of Regulation No 97
- Annex 4 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a vehicle type with regard to its immobiliser pursuant to Part III of Regulation No 97
- Annex 5 — Arrangements of approval marks
- Annex 6 — Model of certificate of conformity
- Annex 7 — Model of installation certificate
- Annex 8 — Test of systems for the protection of the passenger compartment
- Annex 9 — Electromagnetic compatibility
- Annex 10 — Specifications for mechanical key switches

1. SCOPE

This Regulation applies to:

- 1.1. PART I: Vehicle alarm systems (VAS) which are intended to be permanently fitted to vehicles of category M₁ and those of category N₁ with a maximum mass of not more than 2 tonnes (*).
- 1.2. PART II: Vehicles of category M₁, and those of category N₁ with a maximum mass of not more than 2 tonnes, with regard to their alarm system(s) (AS) (*).
- 1.3. PART III: Immobilisers and vehicles of category M₁ and vehicles of category N₁ with a maximum mass of not more than 2 tonnes with regard to immobilisers (*).
- 1.4. The fitting of devices specified under Parts II and III to vehicles of categories other than M₁, or N₁ with a maximum mass exceeding 2 tonnes, is optional, but any such device fitted is required to comply with all relevant provisions of this Regulation. Vehicles approved in accordance with the provisions of Parts III or IV of Regulation No 116 are deemed to comply with Parts II and III respectively of this Regulation.

PART I — APPROVAL OF VEHICLE ALARM SYSTEMS

2. DEFINITIONS

For the purpose of Part I of this Regulation,

- 2.1. 'Vehicle alarm system' (VAS) means a system intended for installation on (a) type(s) of vehicle(s), designed to indicate intrusion into or interference with the vehicle; these systems may provide additional protection against unauthorised use of the vehicle;
- 2.2. 'Sensor' means a device which senses a change which could be caused by intrusion into or interference with a vehicle;
- 2.3. 'Warning device' means a device indicating that intrusion into or interference has occurred;
- 2.4. 'Control equipment' means equipment necessary for the setting, unsetting and testing of a VAS and for sending an alarm condition to warning devices;
- 2.5. 'Set' means the state of a VAS in which an alarm condition can be transmitted to warning devices;
- 2.6. 'Unset' means the state of a VAS in which an alarm condition cannot be transmitted to warning devices;
- 2.7. 'Key' means any device designed and constructed to provide a method of operating a locking system which is designed and constructed to be operated only by that device;
- 2.8. 'Type of vehicle alarm system' means systems which do not differ significantly in such essential aspects as:
 - (a) the manufacturer's trade name or mark;
 - (b) the kind of sensor;
 - (c) the kind of warning device;
 - (d) the kind of control equipment;
- 2.9. 'Approval of a vehicle alarm system' means the approval of a type of VAS with respect to the requirements laid down in paragraphs 5, 6 and 7 below;
- 2.10. 'Immobiliser' means a device which is intended to prevent the vehicle being driven away powered by its own engine;
- 2.11. 'Panic Alarm' means a device which enables a person to use an alarm, installed on the vehicle, to summon assistance in an emergency.

(*) Only vehicles with 12 volts electrical systems are considered.

- 2.12. 'Component' means a device subject to the requirements of this Regulation and intended to be part of a vehicle, which may be type-approved independently of a vehicle where this Regulation makes express provisions for so doing.
- 2.13. 'Separate technical unit' means a device subject to the requirements of this Regulation and intended to be part of a vehicle, which may be type-approved separately, but only in relation to one or more specified types of vehicle where this Regulation makes express provisions for so doing.
3. APPLICATION FOR APPROVAL OF VAS
- 3.1. The application for approval of a VAS shall be submitted by the manufacturer of the VAS or by his duly accredited representative.
- 3.2. For each type of VAS, the application must be accompanied by an information document established in accordance with the model shown in Annex 1A, Part 1, and giving a description of the technical characteristics of the VAS, the method of installation for each make and type of vehicle on which VAS is intended to be installed.
- 3.2.1. (A) vehicle(s) fitted with the VAS to be type-approved, chosen by the applicant in agreement with the Technical Service responsible for conducting approval tests;
- 3.2.2. Instructions in triplicate in accordance with paragraph 8 below.
4. APPROVAL
- 4.1. If the VAS submitted for approval pursuant to this Regulation meets the requirements of paragraphs 5, 6 and 7 below, approval of that type of VAS shall be granted.
- 4.2. An approval number shall be assigned to each type approved. Its first two digits (currently 01 for the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of VAS.
- 4.3. Notice of approval or of extension or of refusal of approval of a type of VAS pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 1 to this Regulation.
- 4.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to the main component(s) of the VAS conforming to a type of VAS approved under this Regulation, an international approval mark consisting of:
- 4.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽¹⁾;
- 4.4.2. The number of this Regulation, followed by the letter 'R', a symbol 'A' or 'T' or 'AI' indicating if the system is a vehicle alarm system or an immobiliser or a combination of both, a dash and the approval number in the vicinity of the circle prescribed in paragraph 4.4.1.
- 4.4.3. The approval mark shall be clearly legible and indelible.

⁽¹⁾ 1 for Germany, 2 for France, 3 for Italy, 4 for the 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 for 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 South Africa, 48 for New Zealand, 49 for Cyprus, 50 for Malta, 51 for the Republic of Korea, 52 for Malaysia and 53 for Thailand. 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 Approvals 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.

- 4.4.4. Annex 5 to this Regulation gives examples of arrangements of approval marks.
- 4.5. As an alternative to the approval mark described in paragraph 4.4 above, a certificate of conformity shall be issued for every VAS offered for sale.

Where a VAS manufacturer supplies an approved unmarked VAS to a vehicle manufacturer, for fitment by that manufacturer as original equipment for a vehicle model or range of vehicle models, the VAS manufacturer shall supply a number of copies of the certificate of conformity to the vehicle manufacturer, sufficient for that manufacturer to obtain the vehicle approval to Part II of this Regulation.

If the VAS is made up of separate components, its main component(s) shall bear a reference mark and the certificate of conformity shall provide a list of such reference marks.

A model of the certificate of conformity is given in Annex 6 to this Regulation.

5. GENERAL SPECIFICATIONS

- 5.1. VAS shall, in the event of intrusion into or interference with a vehicle, provide a warning signal.

The warning signal shall be audible and in addition may include optical warning devices, or be a radio alarm or any combination of the above.

- 5.2. VASs shall be designed, constructed and installed in such a way that the vehicle when equipped shall continue to comply with the relevant technical requirements, especially with regard to electromagnetic compatibility (EMC).
- 5.3. If the VAS includes the possibility of a radio transmission, e.g. for setting or unsetting of the alarm or for alarm transmission, it shall comply with the relevant ETSI Standards ⁽²⁾, e.g. EN 300 220-1 V1.3.1 (2000-09), EN 300 220-2 V1.3.1 (2000-09), EN 300 220-3 V1.1.1 (2000-09) and EN 301 489-3 V1.2.1 (2000-08) (including any advisory requirements). The frequency and maximum radiated power of radio transmissions for the setting and unsetting of the alarm system must comply with the CEPT/ERC ⁽³⁾ Recommendation 70-03 (17 February 2000) relating to the use of short range devices ⁽⁴⁾.
- 5.4. The installation of a VAS in a vehicle shall not be capable of influencing the vehicle's performance (in the unset state), or its safe operation.
- 5.5. The VAS and components thereof shall not activate inadvertently, particularly whilst the engine is in its running mode.
- 5.6. Failure of the VAS, or failure of its electrical supply shall not affect the safe operation of the vehicle.
- 5.7. The VAS, its components and the parts controlled by them shall be designed, built and installed in such a way as to minimise the risk for anyone to make them inoperable or to destroy them rapidly and without calling attention, e.g. using low-cost, easily-concealed tools, equipment or fabrications readily available to the public at large.
- 5.8. The means of setting and unsetting of the VAS shall be designed in such a way that it does not invalidate the requirements of Regulation No 18. Electrical connections to components covered by this Regulation are allowed.

⁽²⁾ ETSI: European Telecommunications Standards Institute.

If these Standards are not available when this Regulation comes into force, then the relevant domestic requirements shall apply.

⁽³⁾ CEPT: Conference of European Posts and Telecommunications
ERC: European Radio communications Committee.

⁽⁴⁾ Contracting Parties may prohibit the frequency and/or the power and may permit the use of other frequency and/or power.

- 5.9. The system shall be so arranged that the shorting out of any warning signal circuit shall not render inoperative any aspects of the alarm system, other than the circuit which is shorted out.
- 5.10. VAS may include an immobiliser which shall comply with the requirements of Part III of this Regulation.

6. PARTICULAR SPECIFICATIONS

6.1. Protection range

6.1.1. Specific requirements

The VAS shall at least detect and signal the opening of any vehicle door, engine bonnet and luggage compartment. The failure or switching off of light sources, e.g. passenger compartment light, shall not impair the control operation.

Additional efficient sensors for information/display, e.g.:

- (a) of intrusions into the vehicle, e.g. passenger compartment control, window glass control, breakage of any glazed area; or
- (b) of attempted vehicle theft, e.g. inclination sensor;

are allowed, taking account of measures to prevent any unnecessary sounding of the alarm (= false alarm, see paragraph 6.1.2 below).

In so far as these additional sensors generate an alarm signal even after an intrusion has occurred (e.g. by breakage of a glazed area) or under external influences (e.g. wind), the alarm signal, activated by one of the abovementioned sensors, shall be activated not more than 10 times within the same activation period of the VAS.

In this case the activation period shall be limited by the authorised unsetting of the system as a result of the vehicle user's action.

Some kinds of additional sensors, e.g. passenger compartment control (ultrasonic, infrared) or inclination sensor, etc., may be intentionally deactivated. In this case, separate deliberate action must be taken each time before the VAS is set. It must not be possible to deactivate the sensors while the alarm system is in a set state.

6.1.2. Safety against false alarm.

6.1.2.1. By adequate measures, e.g.:

- (a) mechanical design and design of the electrical circuit according to conditions specific to motor vehicles;
- (b) selection and application of operation and control principles for the alarm system and components thereof;

it shall be ensured that the VAS both in set and unset conditions, cannot cause the alarm signal to sound unnecessarily, in the event of:

- (a) an impact on the vehicle: test specified in paragraph 7.2.13;
- (b) electromagnetic compatibility: tests specified in paragraph 7.2.12;
- (c) reduction of battery voltage by continuous discharge: test specified in paragraph 7.2.14;
- (d) false alarm of the passenger compartment control: test specified in paragraph 7.2.15.

6.1.2.2. If the applicant for approval can demonstrate, e.g. by technical data, that safety against false alarm is satisfactorily ensured, the Technical Service responsible for conducting approval tests may not require some of the above tests.

6.2. Audible alarm

6.2.1. General

The warning signal shall be clearly audible and recognisable and shall differ significantly from the other audible signals used in road traffic.

In addition to the original equipment audible warning device, a separate audible warning device may be fitted in the area of the vehicle which is controlled by the VAS, where it shall be protected against easy, rapid access by persons.

If a separate audible warning device according to paragraph 6.2.3.1 below is used, the original equipment standard audible warning device may additionally be actuated by the VAS, provided that any tampering with the standard audible warning device (generally more easily accessible) does not affect the operation of the additional audible warning device.

6.2.2. Duration of the audible signal

Minimum: 25 s

Maximum: 30 s.

The audible signal may sound again only after the next interference with the vehicle, i.e. after the abovementioned time span.

(Restrictions: see paragraphs 6.1.1 and 6.1.2 above).

Unsetting of the alarm system shall immediately cut the signal.

6.2.3. Specifications concerning the audible signal.

6.2.3.1. Constant tone signal device (constant frequency spectrum), e.g. horns: acoustical, etc., data according to Regulation No 28, Part I.

Intermittent signal (on/off):

Trigger frequency(2 ± 1) Hz

On time = off time ± 10 per cent

6.2.3.2. Audible signal device with frequency modulation:

acoustical, etc., data according to Regulation No 28, Part I but equal passage of a significant frequency range within the abovementioned range (1 800 through 3 550 Hz) in both directions.

Passage frequency(2 ± 1) Hz

6.2.3.3. Sound level

The sound source shall be:

(a) either an audible warning device approved under Regulation No 28, Part I;

(b) or a device meeting the requirements of Regulation No 28, Part I, paragraphs 6.1 and 6.2.

However, in the case of a different sound source from the original equipment audible warning device, the minimum sound level may be reduced to 100 dB(A), measured under the conditions of Regulation No 28, Part I.

6.3. Optical alarm — if fitted

6.3.1. General

In the event of intrusion into or interference with the vehicle, the device shall activate an optical signal as specified in paragraphs 6.3.2 and 6.3.3 below.

6.3.2. Duration of the optical signal

The optical signal shall have a duration between 25 s and 5 min after the alarm has been activated.

The unsetting of the alarm system shall immediately stop the signal.

6.3.3. Type of optical signal

Flashing of all direction indicators and/or passenger compartment light of the vehicle, including all lamps in the same electrical circuit.

Trigger frequency (2 ± 1) Hz

In relation to the audible signal, also asynchronous signals are allowed.

On time = off time $\pm$ 10 per cent

6.4. Radio alarm (pager) — if fitted

The VAS may include a facility generating an alarm signal by radio transmission.

6.5. Alarm system setting lock

6.5.1. When the engine is in its running mode, deliberate or inadvertent setting of the alarm system shall be impossible.

6.6. Setting and unsetting of the VAS

6.6.1. Setting

Any suitable means of setting of the VAS is allowed, provided that such means does not inadvertently cause false alarms.

6.6.2. Unsetting

Unsetting of the VAS shall be achieved by one or a combination of the following devices. Other devices giving an equivalent performance are permitted.

6.6.2.1. A mechanical key (complying with the requirements of Annex 10 to this Regulation) which can be coupled with a centralised vehicle locking system comprising at least 1 000 variants, operated from the outside.

6.6.2.2. Electrical/electronic device, e.g. remote control, with at least 50 000 variants and shall incorporate rolling codes and/or have a minimum scan time of 10 days, e.g. a maximum of 5 000 variants per 24 hours for 50 000 variants minimum.

6.6.2.3. A mechanical key or an electrical/electronic device within the protected passenger compartment, with timed exit/entry delay.

6.7. Exit delay

If the switching device for setting the VAS is fitted within the protected area, an exit delay shall be provided. It shall be possible for the exit delay to be set to between 15 seconds and 45 seconds after the switch has been operated. The delay period may be adjustable to suit individual operators' circumstances.

6.8. Entry delay

If the device for unsetting the VAS is fitted within the protected area, a delay of 5 seconds minimum and 15 seconds maximum shall be allowed before the activation of the audible and optical signals. The delay period may be adjustable to suit individual operators' circumstances.

- 6.9. Status display
- 6.9.1. To provide information on the status of the VAS (set, unset, alarm setting period, alarm has been activated), optical displays inside and outside the passenger compartment are allowed. The light intensity of optical signals installed outside the passenger compartment shall not exceed 0,5 cd.
- 6.9.2. If an indication of short-term 'dynamic' processes such as changes from 'set' to 'unset' and vice versa is provided, it shall be optical, according to paragraph 6.9.1. Such optical indication may also be produced by the simultaneous operation of the direction indicators and/or passenger compartment lamp(s), provided that the duration of the optical indication by the direction indicators does not exceed 3 seconds.
- 6.10. Power supply
- The source of power for the VAS shall either be the vehicle battery or a rechargeable battery. Where provided, an additional rechargeable or non-rechargeable battery may be used. These batteries shall by no means supply energy to other parts of the vehicle electrical system.
- 6.11. Specifications for optional functions
- 6.11.1. Self check, automatic failure indication
- On setting the VAS, irregular situations, e.g. open doors, etc., can be detected by a self-check function (plausibility control), and this situation is indicated.
- 6.11.2. Panic alarm
- An optical and/or audible and/or radio alarm is allowed independent of the state (set or unset) and/or function of the VAS. Such an alarm shall be triggered from within the vehicle and shall not affect the state (set or unset) of the VAS. Also it must be possible for the vehicle user to switch off the panic alarm. In the case of an audible alarm, its sounding duration per activation shall not be restricted. A panic alarm shall not immobilise the engine or stop it if it is running.
7. OPERATION PARAMETERS AND TEST CONDITIONS ⁽⁵⁾
- 7.1. Operation parameters
- All components of the VAS shall operate without any failure under the following conditions:
- 7.1.1. Climatic conditions
- Two classes of environmental temperature are defined as follows:
- 40 °C to + 85 °C for parts to be fitted in the passenger or luggage compartment;
 - 40 °C to + 125 °C for parts to be fitted in the engine compartment unless otherwise specified.
- 7.1.2. Degree of protection for installation
- The following degrees of protection in accordance with IEC Publication 529-1989 shall be provided:
- IP 40 for parts to be fitted in the passenger compartment;
- IP 42 for parts to be fitted in the passenger compartment of roadsters/convertibles and cars with moveable roof-panels if the installation location requires a higher degree of protection than IP 40;
- IP 54 for all other parts.
- The VAS manufacturer shall specify in the installation instructions any restrictions on the positioning of any part of the installation with respect to dust, water and temperature.
- 7.1.3. Weatherability
- 7 days according to IEC 68-2-30-1980.

⁽⁵⁾ Lamps which are used as part of the optical warning devices and which are included in the standard car lighting system need not comply with the operation parameters in paragraph 7.1 and shall not be submitted to tests listed under paragraph 7.2.

7.1.4. Electrical conditions

Rated supply voltage: 12 V

Operation supply voltage range: from 9 V to 15 V in the temperature range according to paragraph 7.1.1.

Time allowance for excess voltages at 23 °C: $U = 18 \text{ V}$, max. 1 h

$U = 24 \text{ V}$, max. 1 min.

7.2. Test conditions

7.2.1. Operation tests

For the operation tests required in paragraphs 7.2.3, 7.2.4, 7.2.5, 7.2.6 and 7.2.8.4, if some of the tests required in each of these paragraphs prior to the operation tests are performed in series on a single VAS, the operation test may be carried out one time only after the chosen tests are completed instead of performing the operation tests required in these paragraphs after each of the chosen tests. Vehicle manufacturers and suppliers have to guarantee satisfactory results only on non-accumulated procedures.

7.2.1.1. Compliance of the VAS with the following specifications shall be checked:

- (a) alarm duration according to paragraphs 6.2.2 and 6.3.2;
- (b) frequency and on/off ratio according to paragraphs 6.3.3 and 6.2.3.1 or 6.2.3.2 respectively;
- (c) number of alarm cycles according to paragraph 6.1.1, if applicable;
- (d) alarm system setting lock check according to paragraph 6.5.

7.2.1.2. Normal test conditions

Voltage $U = (12 \pm 0,2) \text{ V}$

Temperature $\Theta = (23 \pm 5) \text{ °C}$

7.2.2. Resistance to temperature and voltage changes

Compliance with the specifications defined under paragraph 7.2.1.1 shall also be checked under the following conditions:

7.2.2.1. Test temperature $\Theta = (-40 \pm 2) \text{ °C}$

Test voltage $U = (9 \pm 0,2) \text{ V}$

Storage duration 4 hours

7.2.2.2. For parts to be fitted in the passenger or luggage compartment:

Test temperature $\Theta = (+85 \pm 2) \text{ °C}$

Test voltage $U = (15 \pm 0,2) \text{ V}$

Storage duration 4 hours

7.2.2.3. For parts to be fitted in the engine compartment unless otherwise specified:

Test temperature $\Theta = (+125 \pm 2) \text{ °C}$

Test voltage $U = (15 \pm 0,2) \text{ V}$

Storage duration 4 hours

7.2.2.4. The VAS, in both set and unset state, shall be submitted to an excess voltage equal to $(18 \pm 0,2) \text{ V}$ for 1 hour.

- 7.2.2.5. The VAS, in both set and unset state, shall be submitted to an excess voltage equal to $(24 \pm 0,2)$ V for 1 minute.

7.2.3. Safe operation after foreign body and water-tightness testing

After the test for tightness to foreign body and water according to IEC 529-1989, for degrees of protection as in paragraph 7.1.2, the operation tests according to paragraph 7.2.1 shall be repeated.

With the agreement of the Technical Service this requirement need not apply in the following circumstances:

- (a) Type Approval of a VAS which is to be type approved as a separate technical unit

In this case, the manufacturer of the VAS shall:

- (i) specify in item 4.5 of the information document (Annex 1A, Part 1) that the requirement of this paragraph was not applied to the VAS (in accordance with Part I of this Regulation); and
- (ii) specify in item 4.1 of the information document, the list of vehicles on which the VAS is intended to be fitted and the relevant installation conditions in item 4.2.

- (b) Type approval of a vehicle in respect of an AS

In this case, the manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the AS due to the nature of installation conditions and the vehicle manufacturer shall prove it by submitting related documents.

- (c) Type approval of a vehicle in respect of the installation of a VAS which is type approved as a separate technical unit

In this case, the vehicle manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the installation of the VAS where the relevant installation conditions are met.

This requirement does not apply in cases where the information required in item 3.1.3.1.1 of Annex 1A, Part 2 has already been submitted for the approval of a separate technical unit.

7.2.4. Safe operation after condensed water test

After a resistance-to-humidity test to be carried out according to IEC 68-2-30 (1980), the operation tests according to paragraph 7.2.1 shall be repeated.

7.2.5. Test for safety against reversed polarity

The VAS and components thereof shall not be destroyed by reversed polarity up to 13 V during 2 minutes.

After this test, the operation tests according to paragraph 7.2.1 shall be repeated with fuses changed, if necessary.

7.2.6. Test for safety against short-circuits

All electrical connections of the VAS must be short-circuit proof against earth, maximum 13 V and/or fused.

After this test, the operation tests according to paragraph 7.2.1 shall be repeated, with fuses changed if necessary.

7.2.7. Energy consumption in the set condition

The energy consumption in set condition under the conditions given in paragraph 7.2.1.2 shall not exceed 20 mA in average for the complete alarm system including status display.

With the agreement of the Technical Service this requirement need not apply in the following circumstances:

- (a) Type Approval of a VAS which is to be type approved as a separate technical unit

In this case, the manufacturer of the VAS shall:

- (i) specify in item 4.5 of the information document (Annex 1A, Part 1), that the requirement of this paragraph was not applied to the VAS (in accordance with Part I of this Regulation);
- (ii) specify in item 4.1 of the information document, the list of vehicles to which the VAS is intended to be fitted and the relevant installation conditions in item 4.2; and
- (iii) prove the energy consumption requirements are not exceeded by submitting related documents.

- (b) Type approval of a vehicle in respect of an AS

In this case, the manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the AS due to the nature of installation conditions and the vehicle manufacturer shall prove it by submitting related documents.

- (c) Type approval of a vehicle in respect of the installation of a VAS which is type approved as a separate technical unit

In this case, the vehicle manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the installation of the VAS where the relevant installation conditions are met.

This requirement does not apply to the case where the information required in item 3.1.3.1.1 of Annex 1A, Part 2 is already submitted at the approval of a separate technical unit.

7.2.8. Safe operation after vibration test

7.2.8.1. For this test, the components are subdivided into two types:

Type 1: components normally mounted on the vehicle;

Type 2: components intended for attachment to the engine.

7.2.8.2. The components/VAS shall be submitted to a sinusoidal vibration mode whose characteristics are as follows:

7.2.8.2.1. For type 1

The frequency shall be variable from 10 Hz to 500 Hz with a maximum amplitude of ± 5 mm and maximum acceleration of 3 g (0-peak).

7.2.8.2.2. For type 2

The frequency shall be variable from 20 Hz to 300 Hz with a maximum amplitude of ± 2 mm and maximum acceleration of 15 g (0-peak).

7.2.8.2.3. For both type 1 and type 2:

- (a) the frequency variation is 1 octave/min;
- (b) the number of cycles is 10, the test shall be performed along each of the 3 axes;
- (c) the vibrations are applied at low frequencies at a maximum constant amplitude and at a maximum constant acceleration at high frequencies.

7.2.8.3. During the test, the VAS shall be electrically connected and the cable shall be supported after 200 mm.

7.2.8.4. After the vibration test, the operation tests according to paragraph 7.2.1 shall be repeated.

7.2.9. Durability test

Under the test conditions specified in paragraph 7.2.1.2, triggering of 300 complete alarm cycles (audible and/or optical) with a rest time of the audible device of 5 min.

7.2.10. Tests for external key switch (installed on the outside of the vehicle)

The following tests shall only be performed if the locking cylinder of the original equipment door lock is not used.

7.2.10.1. The key switch shall be so designed and constructed that it remains fully effective even after 2 500 set/unset cycles in each direction, followed by 96 hours minimum of exposure to salt spray test according to IEC 68-2-11-1981, corrosion resistance test.

7.2.11. Test of systems for the protection of the passenger compartment

The alarm shall be activated, when a vertical panel of $0,2 \times 0,15$ m is inserted for 0,3 m (measured from the centre of the vertical panel) through an open front door window into the passenger compartment, towards the front and parallel to the road at a speed of 0,4 m/s and at an angle of 45° with the longitudinal median plane of the vehicle. (See drawings in Annex 8 to this Regulation).

7.2.12. Electromagnetic compatibility

The VAS shall be submitted to the tests described in Annex 9.

In this case, a VAS which meets all the functional status of the tests in Annex 9 is deemed not to cause the alarm signal to sound unnecessarily in association with the requirements in paragraph 6.1.2.1.

With regard to the conformity to the functional status in each test, a VAS, which is designed to sound the alarm in the set state in some of the test conditions given in Annex 9 and sound the alarm signal in the tests, is deemed to function as designed in the tests and thus deemed to meet the functional status of the tests. In this case, the manufacturer of the VAS shall prove it by submitting related documents.

7.2.13. Safety against false alarm in the event of an impact on the vehicle

It shall be verified that an impact of up to 4,5 Joules of a hemispherical body with 165 mm in diameter and 70 ± 10 Shore A applied anywhere to the vehicle bodywork or glazing with its curved surface does not cause false alarms.

7.2.14. Safety against false alarm in the event of a voltage reduction

It shall be verified that slow reduction of the main battery voltage by continuous discharge of 0,5 V per hour down to 3 V does not cause false alarms.

Test conditions: see paragraph 7.2.1.2 above.

7.2.15. Test for safety against false alarm of the passenger compartment control

Systems intended for the protection of the passenger compartment according to paragraph 6.1.1 above shall be tested together with a vehicle under normal conditions (paragraph 7.2.1.2).

The system, installed according to the manufacturer's instructions, shall not be triggered when subjected 5 times to the test described in paragraph 7.2.13 above at intervals of 0,5 s.

The presence of a person touching or moving around the outside of the vehicle (windows closed) shall not cause any false alarm.

8. INSTRUCTIONS

Each VAS shall be accompanied by:

- 8.1. Instructions for installation:
 - 8.1.1. The list of vehicles and vehicle models for which the device is intended. This list may be specific or generic, e.g. 'all cars with petrol engines and 12 V negative earth batteries'.
 - 8.1.2. The method of installation illustrated by photographs and/or very clear drawings.
 - 8.1.3. In the case of VAS which includes an immobiliser, additional instructions regarding compliance with the requirements of Part III of this Regulation.
- 8.2. A blank installation certificate, an example of which is given in Annex 7.
- 8.3. A general statement to the VAS purchaser calling his attention to the following points:

The VAS should be installed in accordance with the manufacturer's instructions;

The selection of a good installer is recommended (the VAS manufacturer may be contacted to indicate appropriate installers);

The installation certificate supplied with the VAS should be completed by the installer.
- 8.4. Instructions for use
- 8.5. Instructions for maintenance
- 8.6. A general warning regarding the danger of making any alterations or additions to the system; such alterations or additions would automatically invalidate the certificate of installation referred to in paragraph 8.2 above.
- 8.7. Indication of the location(s) of the international approval mark mentioned in paragraph 4.4 of this Regulation and/or the international certificate of conformity mentioned in paragraph 4.5 of this Regulation.
9. MODIFICATION OF THE VAS TYPE AND EXTENSION OF APPROVAL

Every modification of the VAS type shall be notified to the Administrative Department which approved this type of VAS.

The department may then either:

 - (a) consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the VAS still complies with the requirements; or
 - (b) require a further test report for some or all the tests described in paragraphs 5, 6 and 7 of this Regulation from the Technical Service responsible for conducting the tests.

Confirmation or refusal of approval, specifying the alteration, shall be communicated by the procedure specified in paragraph 4.3 above to the Contracting Parties to the Agreement applying this Regulation.

The Competent Authority issuing the extension of approval shall assign a serial number to each communication form drawn up for such an extension.
10. CONFORMITY OF PRODUCTION

The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2), with the following requirements:

 - 10.1. Every vehicle alarm system approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set out in paragraphs 5, 6 and 7 above.
 - 10.2. For each type of vehicle alarm system, the tests prescribed in paragraphs 7.2.1 to 7.2.10 of this Regulation shall be carried out on a statistically controlled and random basis, in accordance with one of the regular quality assurance procedures.

- 10.3. The authority which has granted approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be one every two years.

11. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

- 11.1. The approval granted in respect of a type of VAS pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 10 above are not complied with.

- 11.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a form conforming to the model in Annex 1 to this Regulation.

12. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a type of VAS approved in accordance with this Regulation, he shall so inform the authority which granted the approval.

Upon receiving the relevant communication, that authority shall inform thereof the other Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 1 to this Regulation.

13. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS

The Contracting Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries are to be sent.

PART II — APPROVAL OF A VEHICLE WITH REGARD TO ITS ALARM SYSTEM

When a VAS approved to Part I of this Regulation is being used in a vehicle submitted for approval to Part II of this Regulation, tests required to be passed by a VAS in order to obtain approval to Part I of this Regulation shall not be repeated.

14. DEFINITIONS

For the purpose of Part II of this Regulation,

- 14.1. 'Alarm system(s)' (AS) means an arrangement of components fitted as original equipment in a vehicle type, designed to indicate intrusion into or interference with the vehicle; these systems may provide additional protection against unauthorised use of the vehicle.

- 14.2. 'Vehicle type with regard to its alarm system' means vehicles which do not differ significantly in such essential aspects as:

- (a) the manufacturer's trade name or mark;
- (b) vehicle features which significantly influence the performances of the AS;
- (c) the type and design of the AS or VAS.

- 14.3. 'Approval of a vehicle' means the approval of a vehicle type with regard to the requirements laid down in paragraphs 17, 18 and 19 below.

- 14.4. Other definitions applicable to Part II are contained in paragraph 2 of this Regulation.

15. APPLICATION FOR APPROVAL

- 15.1. The application for approval of a vehicle type with regard to its AS shall be submitted by the vehicle manufacturer or by his duly accredited representative.

- 15.2. It shall be accompanied by an information document in accordance with the model shown in Annex 1A, Part 2.
- 15.3. A vehicle representative of the type to be approved shall be submitted to the Technical Service.
- 15.4. A vehicle not comprising all the components proper to the type may be accepted provided that it can be shown by the applicant to the satisfaction of the Competent Authority that the absence of the components omitted has no effect on the results of the verifications, so far as the requirements of this Regulation are concerned.
16. APPROVAL
- 16.1. If the vehicle submitted for approval pursuant to this Regulation meets the requirements of paragraphs 17, 18 and 19 below, approval of that vehicle type shall be granted.
- 16.2. An approval number shall be assigned to each type approved. Its first two digits (currently 01 for the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another vehicle type.
- 16.3. Notice of approval or of extension or of refusal of approval of a vehicle type pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 2 to this Regulation.
- 16.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation, an international approval mark consisting of:
- 16.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽⁶⁾;
- 16.4.2. The number of this Regulation, followed by the letter 'R', a symbol 'A' or 'T' or 'AI' indicating if the vehicle has been approved with regard to its alarm system or its immobilisers or a combination of both, a dash and the approval number to the right of the circle prescribed in paragraph 16.4.1.
- 16.5. If the vehicle conforms to a vehicle type approved under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 16.4.1 need not be repeated; in such a case the Regulation and approval numbers and the additional symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 16.4.1.
- 16.6. The approval mark shall be clearly legible and indelible.
- 16.7. The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.
- 16.8. Annex 5 to this Regulation gives examples of arrangements of approval marks.
17. GENERAL SPECIFICATIONS
- 17.1. ASs shall be designed and built in such a way that they, in the event of intrusion into or interference with a vehicle, provide a warning signal, and may include an immobiliser.
- The warning signal shall be audible and in addition may include optical warning devices, or be a radio alarm, or any combination of the above.
- 17.2. Vehicles which are equipped with alarm systems shall comply with the relevant technical requirements, especially with regard to electromagnetic compatibility (EMC).

⁽⁶⁾ See footnote 1.

- 17.3. If the AS includes the possibility of a radio transmission, e.g. for setting or unsetting of the alarm or for alarm transmission, it shall comply with the relevant ETSI Standards (see footnote 2 pertinent to paragraph 5.3), e.g. EN 300 220-1 V1.3.1 (2000-09), EN 300 220-2 V1.3.1 (2000-09), EN 300 220-3 V1.1.1 (2000-09) and EN 301 489-3 V1.2.1 (2000-08) (including any advisory requirements). The frequency and maximum radiated power of radio transmissions for the setting and unsetting of the alarm system must comply with the CEPT/ERC (see footnote 3 pertinent to paragraph 5.3) Recommendation 70-03 (17 February 2000) relating to the use of short range devices (see footnote 4 to paragraph 5.3).
- 17.4. The AS and components thereof shall not activate inadvertently, particularly whilst the engine is in its running mode.
- 17.5. Failure of the AS, or failure of its electrical supply shall not affect the safe operation of the vehicle.
- 17.6. The alarm system, its components and the parts controlled by them shall be so installed as to minimise the risk for anyone to make them inoperable or to destroy them rapidly and without calling attention, e.g. using low-cost, easily-concealed tools, equipment or fabrications readily available to the public at large.
- 17.7. The system shall be so arranged that the shorting out of any warning signal circuit shall not render inoperative any aspects of the alarm system, other than the circuit which is shorted out.
- 17.8. The AS may include an immobiliser which shall comply with the requirements of Part III of this Regulation.

18. PARTICULAR SPECIFICATIONS

18.1. Protection range

18.1.1. Specific requirements

The AS shall at least detect and signal the opening of any vehicle door, engine bonnet and luggage compartment. The failure or switching off of light sources, e.g. passenger compartment light, shall not impair the control operation.

The installation of additional efficient sensors for information/display, e.g.:

(a) of intrusions into the vehicle, e.g. passenger compartment control, window glass control, breakage of any glazed area; or

(b) of attempted vehicle theft, e.g. inclination sensor;

are allowed, taking account of measures to prevent any unnecessary sounding of the alarm (= false alarm, see paragraph 18.1.2 below).

In so far as these additional sensors generate an alarm signal even after an intrusion has occurred (e.g. by breakage of a glazed area) or under external influences (e.g. wind), the alarm signal, activated by one of the abovementioned sensors, shall be activated not more than 10 times within the same activation period of the AS.

In this case the activation period shall be limited by the authorised unsetting of the system as a result of the vehicle user's action.

Some kinds of additional sensors, e.g. passenger compartment control (ultrasonic, infrared) or inclination sensor, etc., may be intentionally deactivated. In this case, separate deliberate action must be taken each time before the AS is set. It must not be possible to deactivate the sensors while the alarm system is in a set state.

18.1.2. Safety against false alarm.

18.1.2.1. It shall be ensured that the AS both in set and unset conditions, cannot cause the alarm signal to sound unnecessarily, in the event of:

(a) an impact on the vehicle: test specified in paragraph 7.2.13;

- (b) electromagnetic compatibility: tests specified in paragraph 7.2.12;
 - (c) reduction of battery voltage by continuous discharge: test specified in paragraph 7.2.14;
 - (d) false alarm of the passenger compartment control: test specified in paragraph 7.2.15.
- 18.1.2.2. If the applicant for approval can demonstrate, e.g. by technical data, that safety against false alarm is satisfactorily ensured, the Technical Service responsible for conducting approval tests may not require some of the above tests.
- 18.2. Audible alarm
- 18.2.1. General
- The warning signal shall be clearly audible and recognisable and shall differ significantly from the other audible signals used in road traffic.
- In addition to the original equipment audible warning device, a separate audible warning device may be fitted in the area of the vehicle which is controlled by the AS, where it shall be protected against easy, rapid access by persons.
- If a separate audible warning device according to paragraph 18.2.3.1 below is used, the original equipment standard audible warning device may additionally be actuated by the AS, provided that any tampering with the standard audible warning device (generally more accessible) does not affect the operation of the additional audible warning device.
- 18.2.2. Duration of the audible signal
- Minimum: 25 s
- Maximum: 30 s.
- The audible signal may sound again only after the next interference with the vehicle, i.e. after the abovementioned time span.
- (Restrictions: see paragraphs 18.1.1 and 18.1.2 above).
- Unsetting of the alarm system shall immediately cut the signal.
- 18.2.3. Specifications concerning the audible signal.
- 18.2.3.1. Constant tone signal device (constant frequency spectrum), e.g. horns: acoustical, etc., data according to Regulation No 28, Part I.
- Intermittent signal (on/off):
- Trigger frequency(2 ± 1) Hz
- On time = off time ± 10 per cent
- 18.2.3.2. Audible signal device with frequency modulation: acoustical, etc., data according to Regulation No 28, Part I but equal passage of a significant frequency range within the abovementioned range (1 800 through 3 550 Hz) in both directions.
- Passage frequency(2 ± 1) Hz
- 18.2.3.3. Sound level
- The sound source shall be:
- (a) either an audible warning device approved under ECE Regulation No 28, Part I;
 - (b) or a device meeting the requirements of ECE Regulation No 28, Part I, paragraphs 6.1 and 6.2. However, in the case of a different sound source from the original equipment audible warning device, the minimum sound level may be reduced to 100 dB(A), measured under the conditions of ECE Regulation No 28, Part I.

- 18.3. Optical alarm — if fitted
- 18.3.1. General
- In the event of intrusion into or interference with the vehicle, the device shall activate an optical signal as specified in paragraphs 18.3.2 and 18.3.3 below.
- 18.3.2. Duration of the optical signal
- The optical signal shall have a duration between 25 s and 5 min after the alarm has been activated. The unsetting of the alarm system shall immediately stop the signal.
- 18.3.3. Type of optical signal
- Flashing of all direction indicators and/or passenger compartment light of the vehicle, including all lamps in the same electrical circuit.
- Trigger frequency(2 ± 1) Hz
- In relation to the audible signal, also asynchronous signals are allowed.
- On time = off time ± 10 per cent
- 18.4. Radio alarm (pager) — if fitted
- The AS may include a facility generating an alarm signal by radio transmission.
- 18.5. Alarm system setting lock
- 18.5.1. When the engine is in its running mode, deliberate or inadvertent setting of the alarm system shall be impossible.
- 18.6. Setting and unsetting of the AS
- 18.6.1. Setting
- Any suitable means of setting of the AS is allowed, provided that such means does not inadvertently cause false alarms.
- 18.6.2. Unsetting
- Unsetting of the AS shall be achieved by one or a combination of the following devices. Other devices giving equivalent performance are permitted.
- 18.6.2.1. A mechanical key (complying with the requirements of Annex 10 to this Regulation) which can be coupled with a centralised vehicle locking system comprising of at least 1 000 variants, operated from the outside.
- 18.6.2.2. Electrical/electronic device, e.g. remote control, with at least 50 000 variants and shall incorporate rolling codes and/or have a minimum scan time of 10 days, e.g. a maximum of 5 000 variants per 24 hours for 50 000 variants minimum.
- 18.6.2.3. A mechanical key or an electrical/electronic device within the protected passenger compartment, with timed exit/entry delay.
- 18.7. Exit delay
- If the switching device for setting the AS is fitted within the protected area, an exit delay shall be provided. It shall be possible for the exit delay to be set to between 15 seconds and 45 seconds after the switch has been operated. The delay period may be adjustable to suit individual operators' circumstances.
- 18.8. Entry delay
- If the device for unsetting the VAS AS is fitted within the protected area, a delay of 5 seconds minimum and 15 seconds maximum shall be allowed before the activation of the audible and optical signals. The delay period may be adjustable to suit individual operators' circumstances.

- 18.9. Status display
- 18.9.1. To provide information on the status of the AS (set, unset, alarm setting period, alarm has been activated), the installation of optical displays is allowed inside and outside the passenger compartment. The light intensity of optical signals installed outside the passenger compartment shall not exceed 0,5 cd.
- 18.9.2. If an indication of short-term 'dynamic' processes such as changes from 'set' to 'unset' and vice versa is provided, it shall be optical, according to paragraph 18.9.1. Such optical indication may also be produced by the simultaneous operation of the direction indicators and/or passenger compartment lamp(s), provided that the duration of the optical indication by the direction indicators does not exceed 3 seconds.
- 18.10. Power supply
- The source of power for the AS shall either be the vehicle battery or a rechargeable battery. Where provided, an additional rechargeable or non-rechargeable battery may be used. These batteries shall by no means supply energy to other parts of the vehicle electrical system.
- 18.11. Specifications for optional functions
- 18.11.1. Self check, automatic failure indication
- On setting the AS, irregular situations, e.g. open doors, etc., can be detected by a self-check function (plausibility control), and this situation is indicated.
- 18.11.2. Panic alarm
- An optical and/or audible and/or radio alarm is allowed independent of the state (set or unset) and/or function of the AS. Such an alarm shall be triggered from within the vehicle and shall not affect the state (set or unset) of the AS. Also it must be possible for the vehicle user to switch off the panic alarm. In the case of an audible alarm, its sounding duration per activation shall not be restricted. A panic alarm shall not immobilise the engine or stop it if it is running.
19. TEST CONDITIONS
- All components of the VAS or AS shall be tested in accordance with procedures described in paragraph 7.
- This requirement does not apply to:
- 19.1. Those components that are fitted and tested as part of the vehicle, whether or not a VAS/AS is fitted (e.g. lamps); or,
- 19.2. Those components that have previously been tested as part of the vehicle and documentary evidence has been provided.
20. INSTRUCTIONS
- Each vehicle shall be accompanied by:
- 20.1. Instructions for use;
- 20.2. Instructions for maintenance;
- 20.3. A general warning regarding the danger of making any alterations or additions to the system.
21. MODIFICATION OF THE VEHICLE TYPE AND EXTENSION OF APPROVAL
- 21.1. Every modification of the vehicle type shall be notified to the Administrative Department which approved the vehicle type.
- The department may then either:
- 21.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the AS still complies with the requirements, or

- 21.1.2. Require a further report from the Technical Service.
- 21.2. Confirmation or refusal of approval, specifying the alteration, shall be communicated by the procedure specified in paragraph 16.3 above to the Contracting Parties to the Agreement applying this Regulation.
- 21.3. The Competent Authority issuing the extension of approval shall assign a serial number to each communication form drawn up for such an extension.
22. CONFORMITY OF PRODUCTION
- The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2), with the following requirements:
- 22.1. Every vehicle approved pursuant to this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set out in paragraphs 17, 18 and 19 above.
- 22.2. The authority which has granted approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be one every two years.
23. PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 23.1. The approval granted in respect of a vehicle type pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 22 above are not complied with.
- 23.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a form conforming to the model in Annex 2 to this Regulation.
24. PRODUCTION DEFINITELY DISCONTINUED
- If the holder of the approval completely ceases to manufacture a vehicle type approved in accordance with this Regulation, he shall so inform the authority which granted the approval.
- Upon receiving the relevant communication, that authority shall inform thereof the other Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 2 to this Regulation.
25. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS
- The Contracting Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries are to be sent.
- PART III — APPROVAL OF IMMOBILISERS AND APPROVAL OF A VEHICLE WITH REGARD TO ITS IMMOBILISER
26. DEFINITIONS
- For the purpose of Part III of this Regulation:
- 26.1. 'Immobiliser' means a device which is intended to prevent normal driving away of a vehicle under its own power (prevention of unauthorised use).
- 26.2. 'Control equipment' means equipment necessary for the setting and/or unsetting of an immobiliser.
- 26.3. 'Status display' means any device intended to indicate the status of the immobiliser (set/unset, change of set to unset and vice versa).
- 26.4. 'Set state' means the state in which the vehicle cannot be driven normally under its own power.

- 26.5. 'Unset state' means the state in which the vehicle can be driven normally.
- 26.6. 'Key' means any device designed and constructed to provide a method of operating a locking system, which is designed and constructed to be operated only by that device.
- 26.7. 'Override' means a design feature which locks the immobiliser in the unset condition.
- 26.8. 'Rolling code' means an electronic code consisting of several elements the combination of which changes at random after each operation of the transmitting unit.
- 26.9. 'Type of immobiliser' means systems which do not differ significantly in such essential aspects as:
- (a) the manufacturer's trade name or mark;
 - (b) the kind of control equipment;
 - (c) the design of their operation on the relevant vehicle system(s) (as referred to in paragraph 32.1 below).
- 26.10. 'Vehicle type with regard to its immobiliser' means vehicles which do not differ significantly in such essential aspects as:
- (a) the manufacturer's trade name or mark;
 - (b) vehicle features which significantly influence the performances of the immobiliser;
 - (c) the type and design of the immobiliser.
27. APPLICATION FOR APPROVAL OF AN IMMOBILISER
- 27.1. The application for approval of an immobiliser shall be submitted by the manufacturer of the immobiliser or by his duly accredited representative.
- 27.2. For each type of immobiliser the application must be accompanied by:
- 27.2.1. An information document established in accordance with the model shown in Annex 1A, Part 1 and giving a description of the technical characteristics of the immobiliser, the measures taken against inadvertent activation and the method of installation for each make and type of vehicle on which the immobiliser is intended to be installed.
 - 27.2.2. Three samples of the type of immobiliser with all its components. Each of the main components must be clearly and indelibly marked with the applicant's trade name or mark and the type designation of that component.
 - 27.2.3. (A) vehicle(s) fitted with the immobiliser to be type-approved, chosen by the applicant in agreement with the Technical Service responsible for conducting approval tests.
 - 27.2.4. Instructions in triplicate in accordance with paragraph 34 below.
28. APPLICATION FOR APPROVAL OF A VEHICLE
- 28.1. When an immobiliser approved to Part III of this Regulation is being used in a vehicle submitted for approval to Part III of this Regulation, tests required to be passed by an immobiliser in order to obtain vehicle approval to Part III of this Regulation shall not be repeated.
- 28.2. The application for approval of a vehicle type with regard to its immobilisers shall be submitted by the vehicle manufacturer or by his duly accredited representative.
- 28.3. It shall be accompanied by an information document giving a description of the technical characteristics of the immobiliser and the method of installation for each make and type of vehicle on which the immobiliser is intended to be installed in accordance with the model shown in Annex 1A, Part 2 or 3, as appropriate.

- 28.4. A vehicle representative of the type to be approved shall be submitted to the Technical Service.
- 28.5. A vehicle not comprising all the components proper to the type may be accepted provided that it can be shown, by the applicant to the satisfaction of the Competent Authority, that the absence of the components omitted has no effect on the results of the verifications, so far as the requirements of this Regulation are concerned.
- 28.6. When an immobiliser approved to Part III of this Regulation is being used, the type-approval communication of the immobilisers shall also be supplied to the Technical Service.
29. APPROVAL OF AN IMMOBILISER
- 29.1. If the immobiliser submitted for approval pursuant to this Regulation meets the requirements of paragraphs 31, 32 and 33 below, approval of that type of immobiliser shall be granted.
- 29.2. An approval number shall be assigned to each type approved. Its first two digits (currently 01 for the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of immobiliser.
- 29.3. Notice of approval or of extension or of refusal of approval of a type of immobiliser pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 3 to this Regulation.
- 29.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to the main component(s) of the immobiliser conforming to a type of immobiliser approved under this Regulation, an international approval mark consisting of:
- 29.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽⁷⁾;
- 29.4.2. The number of this Regulation, followed by the letter 'R', a symbol 'A' or 'T' or 'AI' indicating if the system is a vehicle alarm system or an immobiliser or a combination of both, a dash and the approval number in the vicinity of the circle prescribed in paragraph 29.4.1.
- 29.5. The approval mark shall be clearly legible and indelible.
- 29.6. Annex 5 to this Regulation gives examples of arrangements of approval marks.
- 29.7. As an alternative to the approval mark described in paragraph 29.4 above, a certificate of conformity shall be issued for every immobiliser offered for sale.

Where an immobiliser manufacturer supplies an approved unmarked immobiliser to a vehicle manufacturer, for fitment by that manufacturer as original equipment for a vehicle model or range of vehicle models, the immobiliser manufacturer shall supply a number of copies of the certificate of conformity to the vehicle manufacturer, sufficient for that manufacturer to obtain the vehicle approval to paragraph 30 of this Regulation.

If the immobiliser is made up of separate components, its main component(s) shall bear a reference mark and the certificate of conformity shall provide a list of such reference marks.

A model of the certificate of conformity is given in Annex 6 to this Regulation.

30. APPROVAL OF A VEHICLE
- 30.1. If the vehicle submitted for approval pursuant to this Regulation meets the requirements of paragraphs 31, 32, and 33 below, approval of that vehicle type shall be granted.
- 30.2. An approval number shall be assigned to each type approved. Its first two digits (currently 01 for the 01 series of amendments) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another vehicle type.

⁽⁷⁾ See footnote 1.

- 30.3. Notice of approval or of extension or of refusal of approval of a vehicle type pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 4 to this Regulation.
- 30.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation, an international approval mark consisting of:
- 30.4.1. A circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval⁽⁸⁾;
- 30.4.2. The number of this Regulation, followed by the letter 'R', a symbol 'A' or 'T' or 'AI' indicating if the vehicle has been approved with regard to its alarm system or its immobilisers or a combination of both, a dash and the approval number to the right of the circle prescribed in paragraph 30.4.1.
- 30.5. If the vehicle conforms to a vehicle type approved under one or more other Regulations annexed to the Agreement, in the country which has granted approval under this Regulation, the symbol prescribed in paragraph 30.4.1 need not be repeated; in such a case the Regulation and approval numbers and the additional symbols of all the Regulations under which approval has been granted in the country which has granted approval under this Regulation shall be placed in vertical columns to the right of the symbol prescribed in paragraph 30.4.1.
- 30.6. The approval mark shall be clearly legible and indelible.
- 30.7. The approval mark shall be placed close to or on the vehicle data plate affixed by the manufacturer.
- 30.8. Annex 5 to this Regulation gives examples of arrangements of approval marks.
31. GENERAL SPECIFICATIONS
- 31.1. It must be possible to set and unset the immobiliser in accordance with these requirements.
- 31.2. If the immobiliser includes the possibility of a radio transmission, e.g. for setting or unsetting, it shall comply with the relevant ETSI Standards (see footnote 2 pertinent to paragraph 5.3), e.g. EN 300 220-1 V1.3.1 (2000-09), EN 300 220-2 V1.3.1 (2000-09), EN 300 220-3 V1.1.1 (2000-09) and EN 301 489-3 V1.2.1 (2000-08) (including any advisory requirements). The frequency and maximum radiated power of radio transmissions for the setting and unsetting of the immobiliser must comply with the CEPT/ERC (see footnote 3 pertinent to paragraph 5.3) Recommendation 70-03 (17 February 2000) relating to the use of short range devices (see footnote 4 to paragraph 5.3).
- 31.3. An immobiliser and its installation shall be so designed that any equipped vehicle continues to meet the technical requirements.
- 31.4. It shall not be possible for an immobiliser to enter the set state when the ignition key is in the engine running mode, except when:
- (a) the vehicle is equipped or intended to be equipped for ambulance, fire brigade or police purposes; or
- (b) the engine is required to:
- (i) drive machinery forming part of, or mounted on, the vehicle for purposes other than driving the vehicle; or
- (ii) maintain the electrical power of the batteries of the vehicle at a level required for driving that machinery or apparatus;
- and the vehicle is stationary with the parking brake applied. When this exception is used, this fact shall be stated under item 2 of the addendum to the communication document (Annex 2 to this Regulation).

⁽⁸⁾ See footnote 1.

- 31.5. It shall not be possible to permanently override an immobiliser.
- 31.6. The immobiliser shall be designed and built such that when installed it shall not adversely affect the designed function and the safe operation of the vehicle, even in the case of malfunction.
- 31.7. An immobiliser shall be designed and built such that, when installed on a vehicle, according to the manufacturer's instructions, it cannot rapidly and without attracting attention be rendered ineffective or destroyed by, e.g. the use of low cost easily concealed tools, equipment or fabrications readily available to the public at large. It shall be difficult and time consuming to replace a major component or assembly in order to bypass the immobiliser.
- 31.8. An immobiliser shall be so designed and built such that when installed as specified by the manufacturer it is able to withstand the environment within the vehicle for a reasonable lifetime (for testing see paragraph 33). More particularly the electrical properties of the on-board circuitry shall not be adversely affected by the addition of the immobiliser (lead cross-sections, contact safety, etc.).
- 31.9. An immobiliser may be combined with other vehicle systems or may be integrated into them (e.g. engine management, alarm systems).
- 31.10. It shall not be possible for an immobiliser to prevent the release of the brakes of the vehicle, except in the case of an immobiliser which prevents the release of pneumatically released spring brakes ⁽⁹⁾ and functions in such a way that in normal operation, or in failure conditions, the technical requirements of Regulation No 13 in force at the time of application for type approval under this Regulation are satisfied.

Compliance with this paragraph does not exempt an immobiliser which prevents the release of pneumatically released spring brakes from the technical requirements set out in this Regulation.

- 31.11. It shall not be possible for an immobiliser to operate in such a manner as to apply the brakes of the vehicle.

32. PARTICULAR SPECIFICATIONS

32.1. Extent of disablement

- 32.1.1. An immobiliser shall be designed so as to prevent the operation of the vehicle under its own power by at least one of the following means:

32.1.1.1. disable, in the case of aftermarket fitting, or vehicle equipped with diesel engine, at least two separate vehicle circuits that are needed for vehicle operation under its own power (e.g. starter motor, ignition, fuel supply, pneumatically released spring brakes, etc.);

32.1.1.2. interference by code of at least one control unit required for the operation of the vehicle;

32.1.2. An immobiliser for fitment to a vehicle equipped with a catalytic converter shall not cause unburnt fuel to enter the exhaust.

32.2. Operating reliability

Operating reliability shall be achieved by suitable design of the immobiliser, account being taken of specific environmental conditions in the vehicle (see paragraphs 31.8 and 33).

32.3. Operating safety

It shall be ensured that the immobiliser does not change its state (set/unset) as a result of any of the tests in paragraph 33.

32.4. Setting of the immobiliser

- 32.4.1. The immobiliser must be set without supplementary action from the driver by at least one of the following means:

⁽⁹⁾ As defined in Annex 8 to Regulation No 13, as amended.

- (a) at rotation of the ignition key into the '0' position in the ignition lock and activation of a door; in addition, immobilisers which unset immediately before or during the normal starting procedure of the vehicle are permitted to set on turning the ignition off;
 - (b) a maximum of 1 minute after removing the key of the ignition lock.
- 32.4.2. If the immobiliser can enter the set state when the ignition key is in the engine running mode as provided for in paragraph 31.4, the immobiliser may also be set by the opening of the driver's door and/or the authorised user carrying out a deliberate action.
- 32.5. Unsetting
 - 32.5.1. Unsetting shall be achieved by using one or a combination of the following devices. Other devices with an equivalent level of security giving equivalent performance are permitted.
 - 32.5.1.1. A key pad for inputting an individually selectable code having at least 10 000 variants.
 - 32.5.1.2. Electrical/electronic device, e.g. remote control, with at least 50 000 variants and shall incorporate rolling codes and/or have a minimum scan time of 10 days, e.g. a maximum of 5 000 variants per 24 hours for 50 000 variants minimum.
 - 32.5.1.3. If unsetting can be achieved via a remote control, the immobiliser must return to the set condition within 5 minutes after unsetting if no supplementary action on the starter circuit has been undertaken.
 - 32.6. Status display
 - 32.6.1. To provide information on the status of the immobiliser (set/unset, change of set to unset and vice versa), optical displays inside and outside the passenger compartment are allowed. The light intensity of optical signals installed outside the passenger compartment shall not exceed 0,5 cd.
 - 32.6.2. If an indication of short-term 'dynamic' processes such as changes from 'set' to 'unset' and vice versa is provided, it shall be optical, according to paragraph 32.6.1. Such optical indication may also be produced by the simultaneous operation of the direction indicators and/or passenger compartment lamp(s), provided that the duration of the optical indication by the direction indicators does not exceed 3 seconds.
- 33. OPERATION PARAMETERS AND TEST CONDITIONS
 - 33.1. Operation parameters

All components of the immobiliser shall comply with prescriptions given in paragraph 7 of this Regulation.

This requirement does not apply to:

those components that are fitted and tested as part of the vehicle, whether or not an immobiliser is fitted (e.g. lamps); or,

those components that have previously been tested as part of the vehicle and documentary evidence has been provided.
 - 33.2. Test conditions

All the tests shall be carried out in sequence on a single immobiliser. However, at the discretion of the test authority, other samples may be used if this is not considered to affect the results of the other tests.
 - 33.3. Operation test

Upon completion of all the tests specified below, the immobiliser shall be tested under the normal test conditions specified in paragraph 7.2.1.2 of this Regulation to check that it continues to function normally. Where necessary, fuses may be replaced prior to the test.

All components of the immobiliser shall comply with prescriptions given in paragraphs 7.2.2 to 7.2.8 and 7.2.12 of this Regulation.

34. INSTRUCTIONS

(Paragraphs 34.1 to 34.3 for the purposes of aftermarket installation only).

Each immobiliser shall be accompanied by:

34.1. Instructions for installation

34.1.1. The list of vehicles and vehicle models for which the device is intended. This list may be specific or generic, e.g. 'all cars with petrol engines and 12 V negative earth batteries'.

34.1.2. The method of installation illustrated by photographs and/or very clear drawings.

34.1.3. Detailed installation instructions provided by the supplier shall be such that when correctly followed by a competent installer, the safety and reliability of the vehicle is not affected.

34.1.4. The supplied installation instructions shall identify the electrical power requirements of the immobiliser and, where relevant, shall advise an increasing of battery size.

34.1.5. The supplier shall provide post installation procedures for checking the vehicle. Particular attention shall be drawn to safety related features.

34.2. A blank installation certificate, an example of which is given in Annex 7.

34.3. A general statement to the immobiliser purchaser calling his attention to the following points:

34.3.1. the immobiliser should be installed in accordance with the manufacturer's instructions;

34.3.2. the selection of a good installer is recommended (the immobiliser manufacturer may be contacted to indicate appropriate installers);

34.3.3. the installation certificate supplied with the immobiliser should be completed by the installer.

34.4. Instructions for use

34.5. Instructions for maintenance

34.6. A general warning regarding the dangers of making any alterations or additions to the immobiliser; such alterations and additions would automatically invalidate the certificate of installation referred to in paragraph 34.2 above.

35. MODIFICATION OF THE IMMOBILISER TYPE OR VEHICLE TYPE AND EXTENSION OF APPROVAL

Every modification of the immobiliser type or vehicle type shall be notified to the Administrative Department which approved this type of immobiliser.

The department may then either:

(a) consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the immobiliser or vehicle still complies with the requirements; or

(b) require a further test report for some or all of the tests described in paragraphs 31, 32 and 33 of this Regulation from the Technical Service responsible for conducting the tests.

Confirmation or refusal of approval, specifying the alteration, shall be communicated by the procedure specified in paragraph 29.3 above to the Contracting Parties to the Agreement applying this Regulation.

The Competent Authority issuing the extension of approval shall assign a serial number to each communication form drawn up for such an extension.

36. CONFORMITY OF PRODUCTION

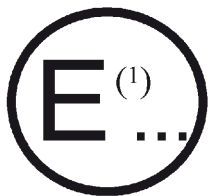
The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE(324-E/ECE/TRANS/505/Rev.2), with the following requirements:

- 36.1. Every immobiliser or vehicle approved under this Regulation with regard to its immobiliser shall be so manufactured as to conform to the type approved by meeting the requirements set out in paragraphs 31, 32 and 33 above.
- 36.2. The authority which has granted approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be one every two years.
37. PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 37.1. The approval granted in respect of a type of immobiliser or a type of vehicle pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 36 above are not complied with.
- 37.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a form conforming to the models in Annex 3 and Annex 4 to this Regulation.
38. PRODUCTION DEFINITELY DISCONTINUED
- If the holder of the approval completely ceases to manufacture a type of immobiliser or a type of vehicle approved in accordance with this Regulation, he shall so inform the authority which granted the approval.
- Upon receiving the relevant communication, that authority shall inform thereof the other Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 4 to this Regulation.
39. TRANSITIONAL PROVISIONS
- 39.1. Type approval of an immobiliser
- 39.1.1. As from 36 months after the date of entry into force of Supplement 4 to the 01 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the type of component or separate technical unit to be approved meets the requirements of this Regulation as amended by Supplement 4 to the 01 series of amendments.
- 39.1.2. Contracting Parties applying this Regulation shall continue to grant approvals to those type of components or separate technical units which comply with the requirements of the original version of this Regulation, as amended by any previous series of amendments, provided that the component or separate technical unit is intended as a replacement for fitting on vehicles in use and that it would not be technically feasible to fit a component or separate technical unit which satisfies the requirements contained in this Regulation as amended by the Supplement 4 to the 01 series of amendments.
- 39.2. Approval of a vehicle type
- 39.2.1. As from the date 36 months after the date of entry into force of Supplement 4 to the 01 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the Supplement 4 to the 01 series of amendments.
40. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS
- The Contracting Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries are to be sent.
-

ANNEX I

COMMUNICATION

(Maximum format: A4 (210 mm × 297 mm))



issued by: Name of administration:

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.....

.....

concerning ⁽²⁾: APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a type of vehicle alarm system (VAS) pursuant to Part I of Regulation No 97

Approval No: Extension No:

1. Trade name or mark of the VAS:
2. Type of VAS:
3. Manufacturer's name and address:
4. If applicable, name and address of manufacturer's representative:
5. Brief description of the VAS and of the immobiliser (if applicable):
6. Type of vehicle on which the VAS has been tested:
7. System submitted for approval on:
8. Technical Service responsible for conducting approval tests:
9. Date of report issued by that service:
10. Number of report issued by that service:
11. Approval has been granted/refused/extended/withdrawn ⁽²⁾
12. Reason(s) for extension of approval:
13. If applicable, position of the approval mark(s) on the main components:
14. Place:
15. Date:
16. Signature:
17. The following documents, bearing the approval number shown above, are attached to this communication:
 - list of components, duly identified, constituting the VAS;
 - list of files deposited with the Administrative Service which has granted type approval, and which can be obtained upon request.

⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 1A

PART 1

Information document in accordance with Part I as appropriate of Regulation No 97 relating to ECE component type or separate technical unit type approval with regard to vehicle alarm systems

(Maximum format: A4 (210 mm × 297 mm))

1. General

- 1.1. Make (trade name of manufacturer):
- 1.2. Type:
- 1.3. Means of identification of type, if marked on the device: ⁽¹⁾
- 1.3.1. Location of that marking:
- 1.4. Name and address of manufacturer:
- 1.5. Location of the ECE approval mark:
- 1.6. Address(es) of assembly plant(s):

2. Description of the device

- 2.1. A detailed description of the alarm system and of the vehicle parts related to the alarm system installed:
- 2.1.1. A list of the main components comprising the alarm system:
- 2.1.2. The measures taken against false alarms:
- 2.2. Range of protection offered by the device:
- 2.3. Method of setting/unsetting the device:
- 2.4. Number of effective interchangeable codes, if applicable:
- 2.5. List of main components of the device and, if applicable, their reference marks:

3. Drawings

- 3.1. Drawings of the main components of the device (the drawings must show the intended space for ECE type approval mark):

4. Instructions

- 4.1. List of vehicles to which the device is intended to be fitted:
- 4.2. Description of the method of installation illustrated by photographs and/or drawings:
- 4.3. Instructions for use:
- 4.4. Instructions for maintenance, if any:
- 4.5. For a VAS type approved as a separate technical unit, which is to be installed in specified places in specified vehicles by virtue of the installation conditions, the description of the paragraphs of this Regulation which do not apply:

⁽¹⁾ If the means of identification of type contains characters not relevant to describe component or separate technical unit types covered in this information document, such characters shall be represented in the documentation by the symbol '?' (e.g. ABC??123??).

PART 2

Information document in accordance with Part II of Regulation No 97 relating to ECE system type approval of vehicle type with regard to the alarm system and immobiliser system

(Maximum format: A4 (210 mm × 297 mm))

Without/including an alarm system ⁽¹⁾

Without/including an immobiliser ⁽¹⁾

1. General
 - 1.1. Make (trade name of manufacturer):
 - 1.2. Type:
 - 1.3. Means of identification of type, if marked on the device ⁽²⁾:
 - 1.3.1. Location of that marking:
 - 1.4. Category of vehicle ⁽³⁾:
 - 1.5. Name and address of the manufacturer:
 - 1.6. Location of the ECE approval mark:
 - 1.7. Address(es) of assembly plant(s):
2. General construction characteristics of the vehicle
 - 2.1. Photographs and/or drawings of a representative vehicle:
 - 2.2. Left-hand drive/right-hand drive ⁽¹⁾:
3. Miscellaneous
 - 3.1. Devices to prevent unauthorised use of the vehicle:
 - 3.1.2. Vehicle immobiliser:
 - 3.1.2.1. Type approval number, if available:
 - 3.1.2.2. For immobilisers not yet approved:
 - 3.1.2.2.1. A detailed technical description of the vehicle immobiliser and of the measures taken against inadvertent activation:
 - 3.1.2.2.2. The system(s) on which the vehicle immobiliser acts:
 - 3.1.2.2.3. Number of effective interchangeable codes, if applicable:
 - 3.1.3. Alarm system, if any:
 - 3.1.3.1. Type approval number, if available:
 - 3.1.3.1.1. A detailed description of the vehicle type with regard to the arrangement of the installed VAS illustrated by photographs and/or drawings (where the VAS is already type approved as a separate technical unit, reference may be made to the description in item 4.2 of the VAS manufacturer's information document):
 - 3.1.3.2. For alarm systems not yet approved:
 - 3.1.3.2.1. A detailed description of the alarm system and of the vehicle parts related to the alarm system installed:
 - 3.1.3.2.2. A list of the main components comprising the alarm system:

⁽¹⁾ Strike out what does not apply (there are cases where nothing needs to be deleted, when more than one entry is applicable).

⁽²⁾ If the means of identification of type contains characters not relevant to describe component or separate technical unit types covered in this information document, such characters shall be represented in the documentation by the symbol '?' (e.g. ABC??123??).

⁽³⁾ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3) (document TRANS/WP.29/78/Rev.1, as amended).

PART 3

Information document in accordance with Part III as appropriate of Regulation No 97 relating to ECE component type or separate technical unit type approval with regard to the immobiliser system

(Maximum format: A4 (210 mm × 297 mm))

1. General

1.1. Make (trade name of manufacturer):

1.2. Type:

1.3. Means of identification of type, if marked on the device ⁽¹⁾:

1.3.1. Location of that marking:

1.4. Name and address of manufacturer:

1.5. Location of the ECE approval mark:

1.6. Address(es) of assembly plant(s):

2. Description of the device

2.1. A detailed description of the alarm system and of the vehicle parts related to the alarm system installed:

2.1.1. A list of the main components comprising the alarm system:

2.1.2. The measures taken against false alarms:

2.2. Range of protection offered by the device:

2.3. Method of setting/unsetting the device:

2.4. Number of effective interchangeable codes, if applicable:

2.5. List of main components comprising the device and, if applicable, their reference marks:

3. Drawings

3.1. Drawings of the main components of the device (the drawings must show the intended space for ECE type approval mark or reference mark, as applicable):

4. Instructions

4.1. List of vehicles to which the device is intended to be fitted:

4.2. Description of the method of installation illustrated by photographs and/or drawings:

4.3. Instructions for use:

4.4. Instructions for maintenance, if any:

⁽¹⁾ If the means of identification of type contains characters not relevant to describe the component or separate technical unit types covered in this information document, such characters shall be represented in the documentation by the symbol '?' (e.g. ABC??123??).

ANNEX 2

COMMUNICATION

(Maximum format: A4 (210 mm × 297 mm))



issued by: Name of administration

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concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to its alarm system pursuant to Part II of Regulation No 97

Approval No: Extension No:

1. Trade name or mark of the vehicle:
2. Vehicle type:
3. Manufacturer's name and address:
4. If applicable, name and address of manufacturer's representative:
5. Brief description:
6. Vehicle submitted for approval on:
7. Technical Service responsible for conducting approval tests:
8. Date of report issued by that service:
9. Number of report issued by that service:
10. Approval has been granted/refused/extended/withdrawn ⁽²⁾
11. Reason(s) for extension of approval:
12. Position of the approval mark on the vehicle:
13. Place:
14. Date:
15. Signature:
16. The following documents, bearing the approval number shown above, are attached to this communication:
 - list of components, identifying alarm systems which can be installed on the vehicle type;
 - list of files deposited with the Administrative Service which has granted type approval, and which can be obtained upon request.

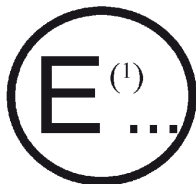
⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 3

COMMUNICATION

(Maximum format: A4 (210 mm × 297 mm))



issued by: Name of administration

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concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a type of immobiliser pursuant to Part III of Regulation No 97

Approval No: Extension No:

1. Trade name or mark of the immobiliser:
2. Type of immobiliser:
3. Manufacturer's name and address:
4. If applicable, name and address of manufacturer's representative:
5. Brief description of the immobiliser:
6. Type of vehicle on which the immobiliser has been tested:
7. If applicable, type(s) of vehicle(s) to which the immobiliser is intended to be fitted:
8. System submitted for approval on:
9. Technical Service responsible for conducting approval tests:
10. Date of report issued by that service:
11. Number of report issued by that service:
12. Approval has been granted/extended/refused/withdrawn ⁽²⁾:
13. Reason(s) for extension of approval:
14. If applicable, position of the approval mark(s) on the main components:
15. Place:
16. Date:
17. Signature:
18. The following documents, bearing the approval number shown above, are attached to this communication:
 - list of components, duly identified, constituting the immobiliser;
 - list of files deposited with the Administrative Service which has granted type approval, and which can be obtained upon request.

⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 4

COMMUNICATION

(Maximum format: A4 (210 mm × 297 mm))



issued by: Name of administration

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concerning: ⁽²⁾ APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to its immobiliser pursuant to Part III of Regulation No 97

Approval No: Extension No:

1. Trade name or mark of the vehicle:
2. Vehicle type:
3. Manufacturer's name and address:
4. If applicable, name and address of manufacturer's representative:
5. Brief description:
6. Vehicle submitted for approval on:
7. Technical Service responsible for conducting approval tests:
8. Date of report issued by that service:
9. Number of report issued by that service:
10. Approval has been granted/extended/refused/withdrawn ⁽²⁾:
11. Reason(s) for extension of approval:
12. Position of the approval mark on the vehicle:
13. Place:
14. Date:
15. Signature:
16. The following documents, bearing the approval number shown above, are attached to this communication:
 - brief description of the immobiliser and the vehicle part(s) on which it (they) act(s);
 - list of files deposited with the Administrative Service which has granted type approval, and which can be obtained upon request.

⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 5

ARRANGEMENTS OF APPROVAL MARKS

MODEL A

Figure 1



Figure 2

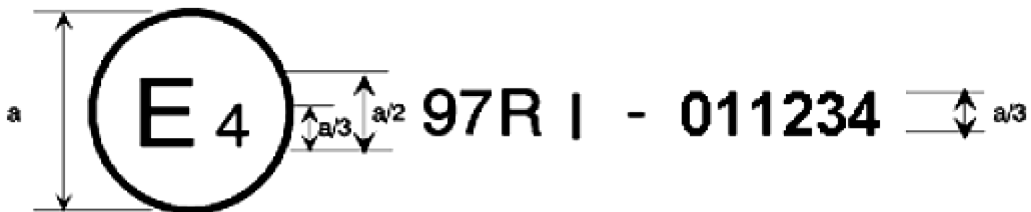
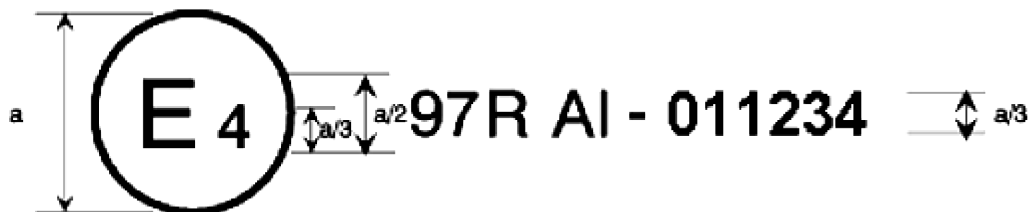


Figure 3



a = 8 mm min.

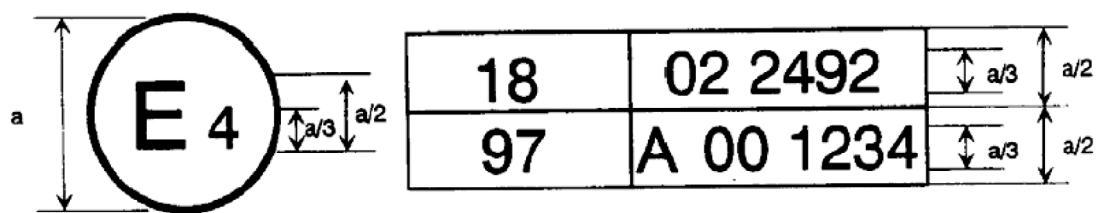
The above approval mark (Figure 1) affixed to a vehicle or a VAS shows that the type concerned has been approved in the Netherlands (E 4), pursuant to Regulation No 97 as amended by the 01 series of amendments under approval No 011234.

The above approval mark (Figure 2) affixed to a vehicle or an immobiliser shows that the type concerned has been approved in the Netherlands (E 4), pursuant to Regulation No 97 as amended by the 01 series of amendments under approval No 011234.

The above approval mark (Figure 3) affixed to a vehicle or a VAS and an immobiliser shows that the type concerned has been approved in the Netherlands (E 4), pursuant to Regulation No 97 as amended by the 01 series of amendments under approval No 011234.

The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No 97 as amended by the 01 series of amendments.

MODEL B



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the type concerned has been approved with regard to its alarm system in the Netherlands (E 4) pursuant to Regulations No 18 (*) and No 97.

The first two digits of the approval numbers indicate that, on the dates on which these approvals were granted, Regulation No 18 included the 02 series of amendments and Regulation No 97 included the 01 series of amendments.

(*) The second number is given merely as an example.

ANNEX 6

MODEL OF CERTIFICATE OF CONFORMITY

I the undersigned
(surname and name)

Testify that the vehicle alarm system/immobiliser ⁽¹⁾ below:

Make:

Type:

is in total conformity with the type approved

at on
(place of approval) (date)

as described in the communication form bearing approval No

Identification of the main component(s):

Component: Marking:

.....

.....

Done at: on:

Manufacturer's full address and stamp:

.....

.....

Signature: (please specify position)

⁽¹⁾ Strike out what does not apply.

ANNEX 7

MODEL OF INSTALLATION CERTIFICATE

I the undersigned
professional installer, certify that the installation of the vehicle alarm system described below has been carried out by
myself pursuant to the mounting instructions supplied by the manufacturer of the system.

Description of the vehicle:

Make:

Type:

Serial number:

Registration number:

Description of the vehicle alarm system/immobiliser ⁽¹⁾:

Make:

Type:

Approval number:

Done at: on:

Installer's full address and stamp:

.....

.....

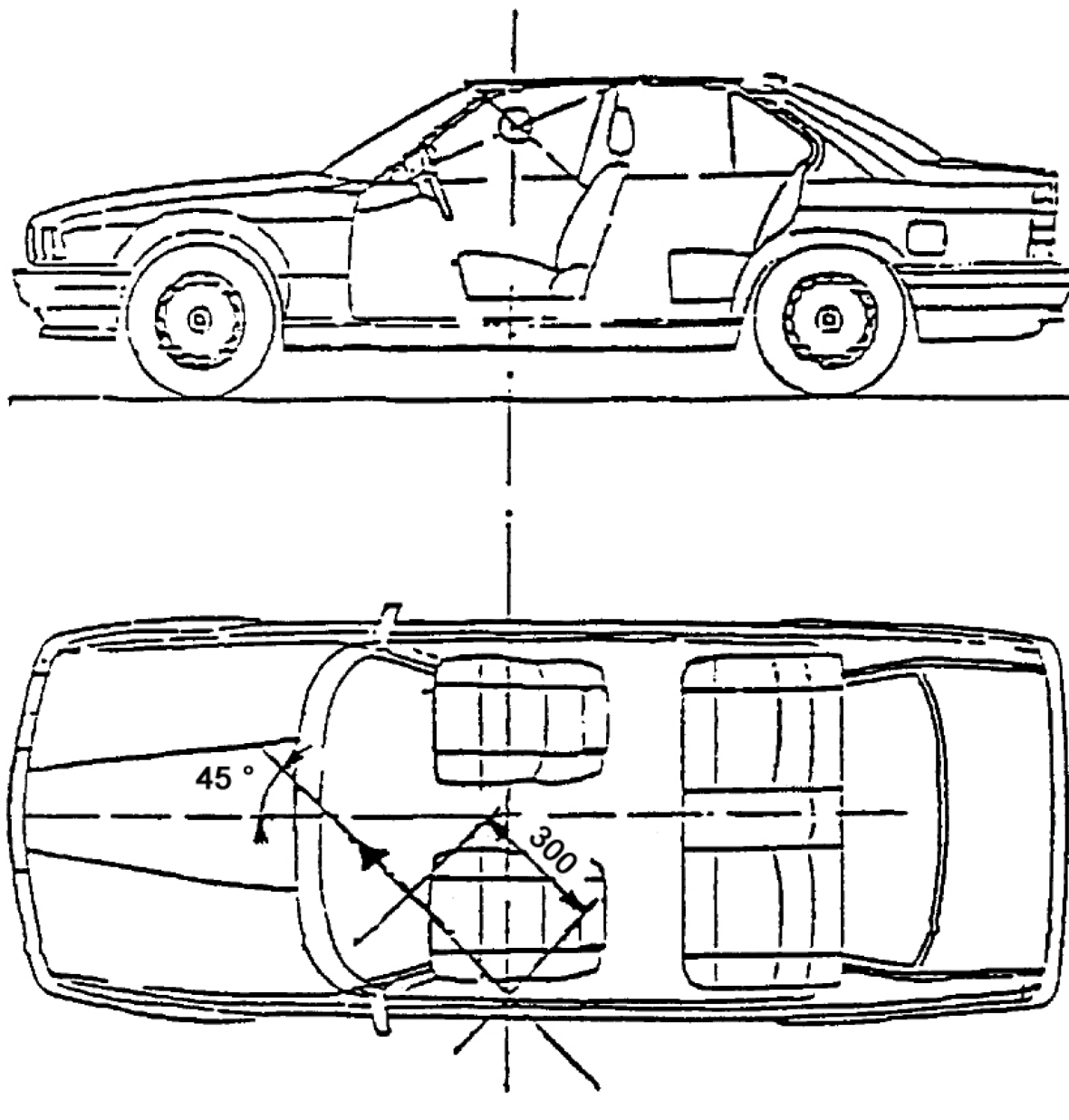
Signature: (please specify position)

⁽¹⁾ Strike out what does not apply.

ANNEX 8

PARAGRAPHS 7.2.11 AND 19

Test of systems for the protection of the passenger compartment



ANNEX 9

ELECTROMAGNETIC COMPATIBILITY

Note: To test the electromagnetic compatibility, either paragraph 1 or paragraph 2 shall be used, depending on the test facilities.

1. METHOD ISO

Immunity against disturbances conducted along supply lines

Apply test pulses 1, 2a/2b, 3a, 3b, 4 and 5a/5b according to ISO 7637-2:2004 to the supply lines as well as to other connections of VAS/AS which may be operationally connected to supply lines.

Concerning pulse 5, pulse 5b shall be applied on vehicles which include an alternator with internal limitation diode and pulse 5a shall be applied in other cases.

Concerning pulse 2, pulse 2a shall always be applied and, pulse 2b may be performed with the agreement between the car manufacturer and the technical approval services.

With the agreement of the Technical Service, test pulse 5a/5b need not be applied in the following circumstances:

- (a) Type approval of a VAS which is to be type approved as a separate technical unit and is intended for fitment to vehicles without alternators

In this case, the manufacturer of the VAS shall:

- (i) specify in item 4.5 of the information document (Annex 1A, Part 1), that the requirement of this paragraph was not applied to the VAS (in accordance with Part I of this Regulation); and
- (ii) specify in item 4.1 of the information document, the list of vehicles to which the VAS is intended to be fitted and the relevant installation conditions in item 4.2.

- (b) Type approval of a vehicle in respect of an AS intended for the fitment to vehicles without alternators

In this case, the manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the AS due to the nature of installation conditions.

- (c) Type approval of a vehicle in respect of the installation of a VAS which is type approved as a separate technical unit and is intended for fitment to vehicles without alternators

In this case, the vehicle manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the installation of the VAS where the relevant installation conditions are met.

This requirement does not apply in cases where the information required in item 3.1.3.1.1 of Annex 1A, Part 2 has already been submitted for the approval of the separate technical unit.

VAS/AS in unset state and set state

The test pulses 1 through 5 shall be applied. The required functional status for all applied test pulses is given in Table 1.

Table 1

Severity/functional status (for supply lines)

Test pulse number	Test level	Functional status
1	III	C
2a	III	B
2b	III	C
3a	III	A

Test pulse number	Test level	Functional status
3b	III	A
4	III	B
5a/5b	III	A

Immunity against disturbance coupled on signal lines

Leads which are not connected to supply lines (e.g. special signal lines) shall be tested in accordance with the International Standard ISO/DIS 7637:1993 Part 3. The required functional status for all applied test pulses are given in Table 2.

Table 2

Test level/functional status (for signal lines)

Test pulse number	Test level	Functional status
3a	III	C
3b	III	A

Immunity against radiated high frequency disturbances

Testing of the immunity of a VAS/AS in a vehicle may be performed according to the prescriptions in Regulation No 10, 02 series of amendments and test methods described in Annex 6 for the vehicles and Annex 9 for a separate technical unit.

Electrical disturbance from electrostatic discharges

Immunity against electrical disturbances shall be tested in accordance with Technical Report ISO/TR 10605-1993.

With the agreement of the Technical Service this requirement need not apply in the following circumstances:

(a) Type Approval of a VAS which is to be type approved as a separate technical unit

In this case, the manufacturer of the VAS shall:

- (i) specify in item 4.5 of the information document (Annex 1A, Part 2), that the requirement of this paragraph was not applied to the VAS (in accordance with Part I of this Regulation); and
- (ii) specify in item 4.1 of the information document, the list of vehicles to which the VAS is intended to be fitted and the relevant installation conditions in item 4.2.

(b) Type approval of a vehicle in respect of an AS

In this case, the manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the AS due to the nature of installation conditions.

(c) Type approval of a vehicle in respect of the installation of a VAS which is type approved as a separate technical unit

In this case, the vehicle manufacturer shall specify in item 3.1.3.1.1 of the information document (Annex 1A, Part 2), that the requirement of this paragraph does not apply to the installation of the VAS where the relevant installation conditions are met.

This requirement does not apply in cases where the information required in item 3.1.3.1.1 of Annex 1A, Part 2 has already been submitted for the approval of the separate technical unit.

Radiated emission

Tests shall be performed according to Regulation No 10, 02 series of amendments prescriptions and according to the test methods described in Annexes 4 and 5 for vehicles or Annexes 7 and 8, for a separate technical unit.

2. METHOD IEC

Electromagnetic field

The VAS/AS shall undergo the basic test. It shall be subjected to the electromagnetic field test described in IEC Publication 839-1-3-1998 test A-13 with a frequency range from 20 to 1 000 MHz, and for a field strength level of 30 V/m.

In addition, the VAS/AS shall be subjected to the electrical transient conducted and coupled tests described in the International Standard ISO 7637 Parts 1:1990, 2:1990 and 3:1993, as appropriate.

Electrical disturbance from electrostatic discharges

The VAS/AS shall undergo the basic test. It shall be subjected to testing for immunity against electrostatic discharge as described in either EN 61000-4-2, or ISO/TR 10605-1993, at the manufacturer's choice.

Radiated emissions

The VAS/AS shall be subjected to testing for the suppression of radio frequency interference according to tests prescribed in Regulation No 10, 02 series of amendments and according to test methods described in Annexes 4 and 5 for vehicles and Annexes 7 and 8 for a separate technical unit.

ANNEX 10

SPECIFICATIONS FOR MECHANICAL KEY SWITCHES

1. The cylinder of the key switch shall not protrude by more than 1 mm from the cowling, and the protruding part shall be conical.
 2. The joint between the cylinder core and the cylinder casing shall be capable of withstanding a tensile force of 600 N and a torque of 25 Nm.
 3. The key switch shall be provided with a cylinder drill obstruction.
 4. The key profile shall have at least 1 000 effective permutations.
 5. The key switch shall not be operable by a key which differs by only one permutation from the key matching the key switch.
 6. The key aperture to an external key switch shall be shuttered or otherwise protected against the penetration of dirt and/or water.
-

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