

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(76) 712 final

Brussels, 3 January 1977.

Proposal for a
COUNCIL DIRECTIVE

on the approximation of the laws of the
Member States relating to tyres for motor
vehicles and their trailers

(submitted to the Council by the Commission)

COM(76) 712 final.

EXPLANATORY MEMORANDUM

This proposal for a directive will form part of the Community type-approval procedure referred to in Council Directive 70/156/EEC of 6 February 1970 (1).

It concerns , on the one hand, the technical requirements for the construction and testing of tyres of passenger cars and their trailers and, on the other hand, the requirements for the installation of tyres on the vehicle.

The Directive is applicable to both original and replacement tyres for motor vehicles belonging to category M₁ (Vehicles used for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat and their trailers) (Article 1). This Directive does not apply to studded or remould tyres.

Articles 2 - 8 lays down a common procedure for granting an EEC mark for any tyre type which is in accordance with the requirements of the technical annexes of this Directive. By means of this procedure the Directive tends to allow the free movement of tyres within the Community by prohibiting the Member States from opposing their marketing whenever they bear the EEC mark, as, by the fixing of this mark granted to the manufacturer, it is presumed that the tyre conforms with the requirements of this Directive.

The tests may therefore be carried out in the manufacturer's laboratories under his responsibility. In the formulation of these tests the Commission based itself, for the technical part, on the work accomplished in this field by the Economic Commission for Europe in Geneva; as far as trade is concerned, this is bound to offer an additional advantage, as a very large number of states are represented in the ECE.

However, this procedure states that each Member State may check, at any moment, conformity with the harmonized requirements of any tyre bearing the EEC mark.

(1) O.J.N° L 42, 23 February 1970.

(2) Regulations N° 30 "Uniform provisions concerning the approval of vehicles and their trailers with regard to tyres" (doc. E/ECE/324/TRANS/505/Rev. 1 (Add. 29)

The directive also states that a Member State may take certain measures, if it finds that a tyre, even if it complies with the requirements of this directive, is dangerous. An urgency procedure for the solution of the problem has also been included in the directive. A system of reciprocal notification of any granting, refusal, withdrawal or extension of an EEC mark is included in this Directive.

Article 9 incorporates in the EEC procedure for type approval the requirements relating to tyres.

Since some Member States do not operate their own type approval procedure it is necessary to lay down provisions enabling vehicles complying with the requirements of the Directive to be used in those Member States (Article 10).

Article 11 lays down the procedure for adapting the requirements set out in the annexes to technical progress. This procedure is set out in Article 13 of the Council Directive of 6 February 1970 on the type approval of motor vehicles and their trailers.

Article 12 provides for two deadlines : before expiry of the first deadline the Member States have to adopt and publish the measures necessary in order to comply with the Directive. The second deadline determines the date on which all of the Member States must simultaneously implement the common rules (Article 12, (1)).

Finally, the Commission must be informed, within reasonable time, of any draft provision drawn up by the Member States in the field covered by the Directive, since such information will enable the Commission to prepare any comments on the draft considered necessary (Article 12, (2)).

CONSULTATION OF THE EUROPEAN PARLIAMENT AND OF THE ECONOMIC AND SOCIAL COMMITTEE

The opinion of both these bodies is required as laid down in the provisions of Article 100, (2).

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Having regard to the Opinion of the Economic and Social Committee,

Whereas the technical requirements which motor vehicles and their trailers must satisfy pursuant to national laws relate, inter alia, to tyres;

Whereas these requirements differ from one Member State to another; whereas it is therefore necessary that all Member States adopt the same requirements either in addition to or in place of their existing rules, in order, to allow, in particular, the EEC type-approval procedure which was the subject of the Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers (1), to be introduced in respect of each type of vehicle;

Whereas rules on tyres should lay down common requirements concerning not only how such tyres should be fitted on vehicles but also their construction;

.../...

(1) O.J. N° L 42, 23.2.1970, p 1

Whereas, consequently, a common procedure for granting an EEC mark to any tyre type complying with the common construction and test requirements should be established; whereas, on the Community level, to ensure the free movement of tyres, the conformity of the tyres with the common requirements is assumed by the affixing on each tyre of an EEC mark which has been granted to the manufacturer in accordance with the above mentioned procedure; whereas any Member State may, in order to check the conformity of the tyres with the common requirements, carry out controls at any moment; whereas, in the case of a statement of a non-conformity, the Member States shall take the necessary steps to ensure the conformity of the tyres with the requirements. These measures may result in the withdrawal of the above mentioned EEC mark.

Whereas it is desirable to take into account the technical requirements adopted by the UN Economic Commission for Europe in its Regulation No. 30 ("Uniform Regulations for the approval of tyres of motor vehicles and their trailers"(1), which is annexed to the Agreement of 20 March 1958 concerning the adoption of uniform conditions for approval and reciprocal recognition of approval for motor vehicle equipment and parts;

Whereas the approximation of national laws relating to motor vehicles entails reciprocal recognition by Member States of the checks carried out by each of them on the basis of the common requirements;

HAS ADOPTED THIS DIRECTIVE :

.../...

(1) Economic Commission for Europe document
E/ECE/324)
E/ECE/TRANS/505) Rev.1 -Add 29, 1.4. 1975.

Article 1

For the purposes of this Directive :

- "vehicle" means any motor vehicle in category M 1 (defined in Annex I to Council Directive 70/156/EEC of 6 February 1970) designed for use on the road, having at least four wheels and a maximum design speed exceeding 25 km/h,
- "manufacturer" means the holder of the trade name or mark of tyres,
- "tyre" means any new radial of belted cross-ply tyre intended for vehicles designed for a maximum speed less or equal to 210 km/h or any new cross-ply tyre intended for vehicles having a maximum speed less or equal to 200 km/h.

Article 2

The Member States shall grant, under the conditions of Annex I, for tyre types manufactured according to the requirements of Annexes II to VII of this Directive an EEC mark conforming to the model in Annex I.

Article 3

1. The manufacturer shall mark on his tyres the EEC mark laid down in article 2, certifying thereby that they satisfy the requirements of this Directive.
2. Member States shall take all appropriate measures to prevent the use of marks liable to create confusion between tyres which satisfy the requirements of this Directive and other devices.

Article 4

The competent authorities of a Member State shall, within one month of issuing an EEC mark, notify it to other Member States using the form shown in Annex VII and, if requested, send the test report of any type of tyre bearing the EEC mark.

Article 5

1. The Member State which has granted the EEC mark shall take the measures required in order to verify that production models conform to the requirements of this Directive, in so far as is necessary, if need be in cooperation with the competent authorities in the other Member States. For this purpose, this Member State may at any time control the conformity of the tyres to the requirements of this Directive.

These controls are carried out by a test laboratory approved by a Member State. The Member States may designate manufacturers' laboratories as approved test laboratories.

2. If this Member State finds that a number of tyres do not conform to the requirements of this Directive, it shall take the necessary measures to ensure that production models conform. Where there is consistent failure to conform, these measures may extend to a withdrawal of the EEC mark. The said authorities shall take the same measures if they are informed by the competent authorities of another Member State of a similar failure to conform.

3. The competent authorities of the Member States shall within one month notify each other using the form shown in Annex VIII of any withdrawal of an EEC mark and of the reasons for such a measure. This notification shall also be made to the Commission.

Article 6

1. If, on the basis of a substantiated justification a Member State consider that a tyre type is dangerous although complying with the requirements of this Directive, it may within its territory, provisionally prohibit the marketing of that product or subject it to special conditions. It shall immediately inform the other Member States and the Commission thereof, stating the grounds for its decision.

2. The Commission shall, within six weeks, consult the Member States concerned, following which it shall deliver its opinion without delay and take the appropriate steps.
3. If the Commission is of the opinion that technical adaptations to the Directive are necessary, such adaptations shall be adopted by either the Commission or the Council in accordance with the procedure laid down in Article 11. In this event, the Member State which has adopted safeguard measures may maintain them until the entry into force of the adaptations.

Article 7

Any decision taken pursuant to the provisions adopted in implementation of this Directive, implying a prohibition of marketing or of use shall set out in detail the reasons on which it is based. Such decision shall be notified to the party concerned, who shall at the same time be informed of the remedies available to him under the laws in force in the Member States and of the time limits allowed for the exercise of such remedies.

Article 8

Member States may not prohibit or restrict the placing on the market of tyres bearing the EEC mark.

Article 9

Member States may not refuse to grant EEC type-approval or national type-approval to a vehicle on grounds relating to its tyres if these bear the EEC mark and are fitted in accordance with the requirements laid down in Annex IX.

Article 10

Member States may not refuse or prohibit the sale, registration, entry into service or use of any vehicle on grounds relating to its tyres if these bear the EEC mark and are fitted in accordance with the requirements laid down in Annex IX.

Article 11

Any amendment necessary to adjust the requirements of the Annexes to take account of technical progress shall be adopted in accordance with the procedure laid down in Article 13 of Directive 70/156/EEC.

Article 12

1. Member States shall adopt and publish the provisions necessary in order to comply with this Directive before 1 July 1978 and shall forthwith inform the Commission thereof. They shall apply these provisions with effect from 1 October 1979.
2. Once this Directive has been notified, the Member States shall also ensure that the Commission is informed, in sufficient time for it to submit its comments, of any draft laws, regulations or administrative provisions which they propose to adopt in the field covered by this Directive.

Article 13

This Directive is addressed to the Member States.

LIST OF ANNEXES

- ANNEX I - Conditions for the issue of the EEC mark and EEC mark
- ANNEX II(*) - Definitions, markings, specifications
- ANNEX III (*) - Arrangement of tyre markings
- ANNEX IV (*) - List of loadcapacity index symbols
- ANNEX V (*) - Method of measuring tyres
- ANNEX VI (*) - Procedure for load/speed performance tests
- ANNEX VII - Model for the notification of the issue or the refusal of an EEC mark for one or more tyre types
- ANNEX VIII - Model for the statement that a tyre type bearing an EEC mark does not conform to the requirements of Directive 77/ /EEC
- ANNEX IX - Conditions for the fitting of tyres to vehicles

(*) The technical requirements of this Annex are similar to those of Regulation N° 30 of the Economic Commission for Europe. In particular, the breakdown into sections is the same. For this reason, where a section of Regulation N° 30 has no counterpart in this Directive, its number is given in brackets for the record.

ANNEX I

CONDITIONS FOR THE ISSUE OF THE EEC MARK AND
MARKING

1. Application for EEC mark
 - 1.1. The application for an EEC mark for the tyre type or types satisfying the requirements of this Directive shall be submitted by the manufacturer or by his representative.
 - 1.2. It shall specify the type or types of tyres which will bear the EEC mark. For each tyre type the application shall further specify :
 - 1.2.1. the tyre-size designation as defined in item 2.18. of Annex II;
 - 1.2.2. the trade name or mark;
 - 1.2.3. the space to contain the EEC mark as laid down in appendix 2 of this Annex;
 - 1.2.4. the utilization category (road or snow)
 - 1.2.5. the structure;
 - 1.2.6. the speed category;
 - 1.2.7. the load-capacity index of the tyre;
 - 1.2.8. whether the tyre is to be used with or without an inner tube;
 - 1.2.9. whether the tyre is "normal" or "reinforced";
 - 1.2.10. the ply-rating number of diagonal (bias-ply) tyres;
 - 1.2.11. the overall dimensions : measuring rim width, overall diameter, maximum section width, for tyre types already existing at the notification of this Directive. Overall section width outer diameter and size factor for tyre types of specifically United States series established by the "Tyre and Rim Association, T & RA";
 - 1.2.12. the rims on which the tyre can be mounted;
 - 1.2.13. the measuring rim and test rim;
 - 1.2.14. inflation pressure for measurement;
 - 1.2.15. inflation pressure for testing according to items 1.2. and 1.3. of Annex VI
 - 1.2.16. the value mentioned in item 2.21 of Annex II

1.3. On request of the authorities responsible for the issue of the EEC mark, the manufacturer or his representative shall also submit :

1.3.1. a complete technical file for each tyre type containing in particular the test reports, drawing or photographs (3 copies) of the side walls and of the thread of the tyre, as well as by a dimensioned sketch of the cross-section of the tyre on which at least the following measurements are indicated : overall section width, section height, outer diameter, nominal rim diameter, measuring rim width (see appendix I)

1.3.2. two samples for each tyre type.

2. Issuing of EEC mark

2.1 If the conditions relating to the issue of the EEC mark are satisfied, an EEC issue number will be granted.

2.2 The manufacturer or his representative may apply for the EEC mark to be extended to include modified tyre types or other tyre types.

3. EEC marking

The EEC mark shall be made up of a rectangle, within which shall be placed the sub case letter "e", followed by the identification number or letters of the country which has granted this mark.

The numbers or letters of Member States are following :

- 1 for Germany
- 2 for France
- 3 for Italy
- 4 for Netherlands
- 6 for Belgium
- 11 for the United Kingdom
- 13 for Luxembourg
- DK for Denmark
- IRL for Ireland

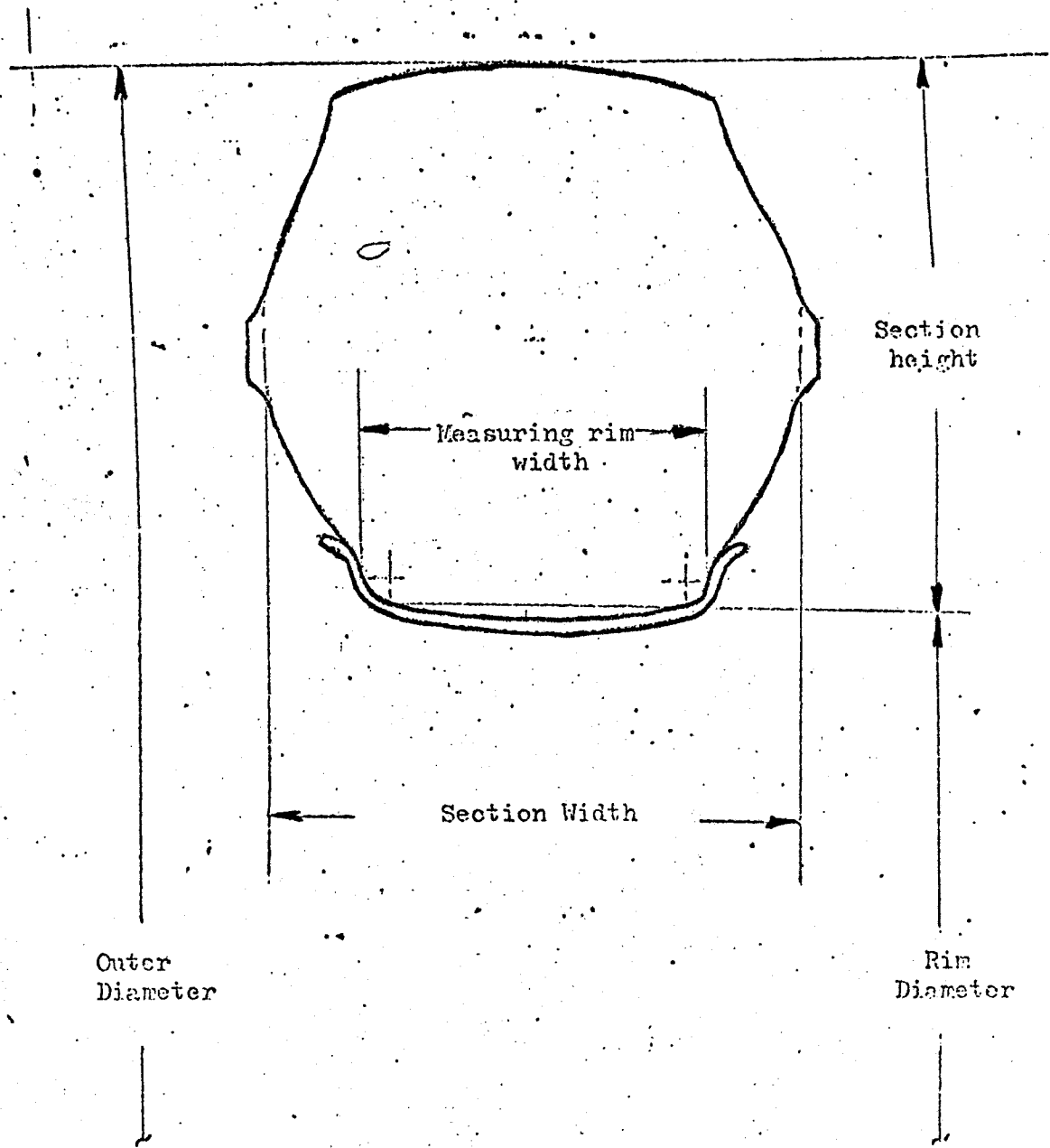
An asterisk shall be put between the letter "e" and issuing number of the EEC mark and between this number and the identification number or letters of the Member State which has granted the EEC mark.

The rectangle forming the EEC mark shall have a minimum length of 48 mm and a minimum height of 12 mm. Letters and number(s) shall have a minimum height of 6 mm.

Examples of the EEC mark are given in Appendix 2.

APPENDIX 1

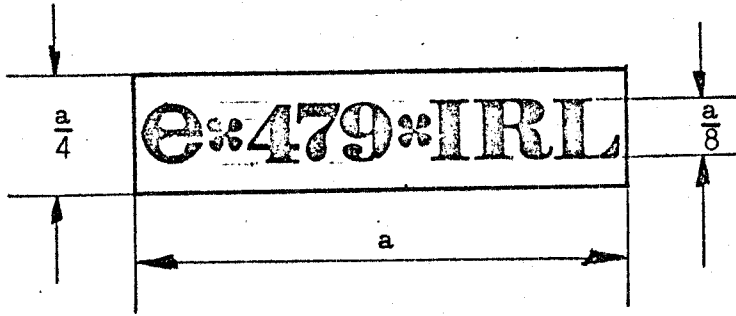
(see item 1.3.1.)



APPENDIX 2

Examples of an EEC mark

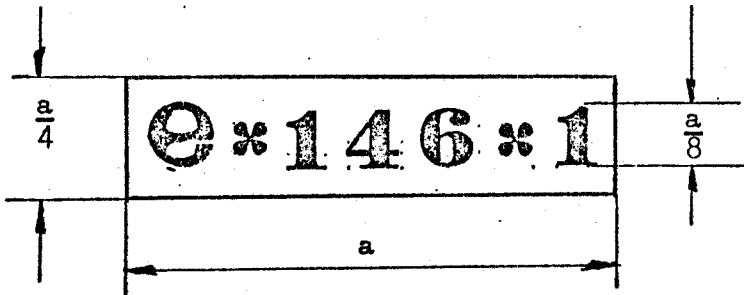
a ≥ 48 mm (min.)



Example 1

a = 64 mm

The tyre bearing the EEC mark shown above is a tyre satisfying the EEC requirements (e), for which the EEC mark has been granted under the number (479) in Ireland (IRL).



Example 2

a = 64 mm

The tyre bearing the EEC mark shown above is a tyre satisfying the EEC requirements (e), for which the EEC mark has been granted under number (146) in Germany (1).

Note : The numbers 479 and 146 (issuing numbers of the EEC mark and the number 1 and the letters IRL (number and letters of the Member States which have granted the EEC mark) are for guidance only.

A N N E X II

DEFINITIONS, MARKINGS, SPECIFICATIONS,

(1)

2. DEFINITIONS

For the purposes of this Directive,

2.1. "type of pneumatic tyre" means a category of pneumatic tyres which do not differ in such essential respects as :

2.1.1. trade name or mark;

2.1.2. tyre-size designation;

2.1.3. the utilization category (road or snow).

2.1.4. structure (diagonal (bias-ply), bias-belted, radial-ply);

2.1.5. speed category;

2.1.6. load-capacity index;

2.1.7. tyre transversal section;

2.2. "snow tyre" means a tyre whose tread pattern and structure, are specifically designed to ensure additional adhesion in mud and fresh or melted snow. The tread pattern consists mainly of groove rib and/or solid-block elements generally more widely spaced than on ordinary road-type tyres;

2.3. "structure" of a pneumatic tyre means the technical characteristics of the tyre's carcass. The following structures are distinguished in particular :

2.3.1. "diagonal" or "bias-ply" describes a pneumatic-tyre structure in which the ply cords extend to the bead and are laid at alternate angles of substantially less than 90° to the centre line of the tread.

2.3.2. "bias-belted" describes a pneumatic-tyre structure of diagonal "bias-ply) type in which the carcass is restricted by a belt comprising two or more layers of substantially inextensible cord material laid at alternate angles smaller than those of the carcass;

- 2.3.3. "radial-ply" describes a pneumatic-tyre structure in which the ply cords extend to the bead and are laid at an angle of substantially 90° to the centre line of the tread, the carcass being stabilized by a circumferential belt comprising two or more layers of substantially inextensible cord material;
- 2.3.4. "reinforced" describes a pneumatic tyre structure in which the carcass is more resistant than that of the corresponding normal tyre;
- 2.4. "bead" means the part of a pneumatic tyre which is of such shape and structure as to fit the rim and maintain the tyre on it. (1)
- 2.5. "cord" means the strands forming the fabric of the plies in the pneumatic tyre (1);
- 2.6. "ply" means a layer of rubber-coated parallel cords (1);
- 2.7. "carcass" means that part of a pneumatic tyre other than the tread and the rubber side walls which, when inflated, bears the load (1);
- 2.8. "tread" means that part of a pneumatic tyre which comes into contact with the ground, protects the carcass against mechanical damage and contributes to ground adhesion (1);
- 2.9. "side wall" means the part of a pneumatic tyre between the tread and the bead (1);
- 2.10. "lower zone" means the part of a pneumatic tyre between the maximal section of the tyre and the part which is covered by the rim trim;
- 2.11. "tread groove" means the space between two adjacent ribs or blocks in the tread pattern (1);
- 2.12. "section width" means the linear distance between the outsides of the side walls of an inflated pneumatic tyre, excluding elevations due to labelling (marking), decoration or protective bands or ribs (1);
- 2.13. "overall width" means the linear distance between the outsides of the side walls of an inflated pneumatic tyre, including labelling (marking), decoration and protective bands or ribs (1);
- 2.14. "section height" means a distance equal to half the difference between the outer diameter of the tyre and the nominal rim diameter;

(1) see explanatory figure

- 2.15. "nominal aspect ratio $\frac{H}{S}$ " means the centuple of the number obtained by dividing the number expressing the height of the section in millimetres by the number expressing the nominal section width in millimetres;
- 2.16. "outer diameter" means the overall diameter of an inflated new pneumatic tyre (1);
- 2.17. "size factor" means the sum of the outer diameter of the tyre and the section width, both measured on the measuring rim;
- 2.18. "tyre-size designation"
- 2.18.1. means a designation showing :
- 2.18.1.1. the nominal section width (in mm);
- 2.18.1.2. the nominal aspect ratio; and
- 2.18.1.3. A conventional figure characterizing the nominal diameter of of the rim and equivalent to its diameter, expressed either in inches (figures below 100) or in mm (figures over 100). The two figures may also appear together.
- 2.18.2. However, for tyre type already existing at the notifications of this Directive, the designation may be the designation used at the moment of this notification.
- 2.19. "nominal rim diameter" means the diameter of the rim on which a tyre is designed to be mounted;
- 2.20. "rim" means the support for a tyre-and-tube assembly, or for a tubeless tyre, on which the tyre beads are seated (1):
- 2.21. "theoretical rim" means the notional rim whose width would be equal to x times the nominal section width of a tyre; the value "x" must be justified by the pneumatic tyre manufacturer.
- 2.22. "measuring rim" means the rim on which a tyre must be fitted for measurements;
- 2.23. "test rim" means the rim on which a tyre must be fitted for testing;
- 2.24. "chunking" means the breaking away of pieces of rubber from the tread;

1) see explanatory figure

- 2.25. • "cord separation" means the parting of the cords from their rubber coating;
- 2.26. "ply separation" means the parting of adjacent plies;
- 2.27. "tread separation" means the pulling away of the tread from the carcass;
- 2.28. "tread-wear indicators" mean the projections within the tread-grooves and intended for showing the tread-grooves wear;
- 2.29. "Load capacity index" means a digit associated with the maximum load which a tyre can support at the maximum speed fixed for its category. The list of these indices and of the corresponding maximum loads is given in annex IV;
- 2.30. "speed category" means :
 - 2.30.1. in relation to an ordinary (road-type) tyre the category in which a tyre is classified in conformity with the requirements specified by the manufacturer for its use it can be fitted to a car which does not reach a speed higher than the maximum speed prescribed for that category;
 - 2.30.2. in relation to a snow tyre the speed category in which a snow tyre is classified in terms of the maximum speed at which it can run;
 - 2.30.3. the speed categories are as shown in the table below :

| Symbol of the speed category | Maximum speed (km/h) |
|------------------------------|----------------------|
| L | 120 |
| M | 130 |
| N | 140 |
| P | 150 |
| Q | 160 |
| R | 170 |
| S | 180 |
| T | 190 |
| U | 200 |
| H | 210 |

3. MARKINGS

- 3.1. Tyres must bear, on both side walls in the case of symmetric tyres, and on the external side wall in the case of asymmetric tyres :
- 3.1.1. the trade name or mark;
 - 3.1.2. the tyre-size designation as defined in item 2.18. of this annex;
 - 3.1.3. an indication of the structure as follows :
 - 3.1.3.1. on diagonal (bias-ply) tyres, no marking or the letter D;
 - 3.1.3.2. on radial-ply tyres, the letter "R" placed in front of the rim-diameter marking, and if desired the word "RADIAL";
 - 3.1.3.3. on bias-belted tyres, the letter "B" placed in front of the rim-diameter marking, and in addition the words "BIAS-BELTED";
 - 3.1.4. an indication of the tyre's speed category in which the tyre is classified in the form of a symbol as shown in item 2.30.3.
 - 3.1.5. the inscription M + S or M.S or M & S in the case of a snow tyre;
 - 3.1.6. the load-capacity index as defined in item 2.29;
 - 3.1.7. the word "TUBELESS" if the tyre is designed for use without an inner tube;
 - 3.1.8. the word "REINFORCED" if the tyre is a reinforced tyre;
- 3.2. Annex III gives an example of the arrangement of tyre markings
- 3.3. The tyre shall also bear the EEC mark the model of which is given in appendix 2 of Annex I. This mark may be affixed only on one side wall. In the case of asymmetric tyres the mark shall be affixed on the external side wall.
- 3.4. The markings and the EEC mark referred to in item 3.1. and 3.3. shall be moulded onto or into the tyres. They shall be clearly legible and situated on at least one of the side walls in the low part of the tyre, except for the marking referred to in item 3.1.1.

(4)

(5)

6. SPECIFICATIONS

6.1. Dimensions of tyres6.1.1. Section width of a tyre

6.1.1.1. The section width shall be calculated by the following formula :

$$S = S_1 + K (A - A_1),$$

where

S is the "section width" expressed in millimetres and measured on the measuring rim;

S_1 is the "nominal section width" (in millimetres) as shown on the side wall of the tyre in the designation of the tyre as prescribed;

A is the width (expressed in millimetres) of the measuring rim, as shown by the manufacturer in the descriptive note; and

A_1 is the width (expressed in millimetres) of the theoretical rim.

The value of A_1 shall be taken as being equal to the value of S_1 multiplied by the value of x as justified by the tyre manufacturer, and K shall be equal to 0.4.

6.1.1.2. However, for tyre types already existing at the notification of the Directive, the section width shall be allowed to be that given by the manufacturer in conformity to point 1.2.11. of Annex I.

6.1.2. Outer diameter of a tyre

6.1.2.1. The outer diameter of a tyre shall be calculated by the following formula :

$$D = d + 0.02 (S_1 \times Ra)$$

where

D is the outer diameter expressed in millimetres

d is the conventional figure mentioned previously in item 2.18.1.3., expressed in mm,

S_1 is the nominal section width (in millimetres); and

Ra is the nominal aspect ratio,

all as shown on the side wall of the tyre designation in conformity with the requirements of item 3.4.

6.1.2.2. However, tyre types already existing at the notification of the directive, it is accepted that the outer diameter shall be that given by the manufacturer in conformity to item 1.2.11. of Annex I. However, these provisions do not apply to the tyres for which, the maximum outer diameter and a size factor is given in conformity to item 1.2.11 of Annex I.

6.1.3. Method of measuring pneumatic tyres

The dimensions of pneumatic tyres shall be measured by the procedure described in annex VI.

6.1.4. Tyre section width specifications

6.1.4.1. The overall width of a tyre may be less than the section width determined pursuant to item 6.1.1.

6.1.4.2. It may exceed that value by the following percentages :

6.1.4.2.1. in diagonal (bias-ply) tyres : 6 percent;

6.1.4.2.2. in radial-ply tyres : 4 per cent.

6.1.4.2.3. in addition, if the tyre has a special protective band, the figures as increased by the above tolerances may be exceeded by 8 mm.

6.1.4.2.4. For the tyres for which the maximum outer diameter and a size factor is given in conformity to item 1.2.11. of Annex I, the tolerances quoted in items 6.1.4.2.1. and 6.1.4.2.2., are 7 %, whatever the tyre structure.

6.1.5. Tyre outer-diameter specifications

- 6.1.5.1. The outer diameter of a tyre must not differ from the value determined pursuant to item 6.1.2. by more than :
- 6.1.5.1.1. \pm 2 per cent in the case
- 6.1.5.1.2. - 2 per cent and + 4 per cent in the case of a snow tyre. These provisions shall not apply to any tyre type for which the maximum outer diameter and a size factor are given in conformity to item 1.2.11. of Annex I.

6.2. Load/speed performance test

- 6.2.1. The pneumatic tyre shall undergo a load/speed performance test carried out by the procedure described in annex VII.
- 6.2.2. A tyre which after undergoing the load/speed test does not exhibit any tread separation, ply separation, cord separation, chunking or broken cords shall be deemed to have passed the test.
- 6.2.3. The outer diameter of the tyre, measured six hours after the load/speed performance test, must not differ by more than \pm 3.5. per cent from the outer diameter as measured before the test.

6.3. Tread-wear indicators

- 6.3.1. The tread of the pneumatic tyre shall include not less than six approximately equally-spaced transverse rows of wear indicators, and situated on the middle part of the tread which is equal to $\frac{3}{4}$ of its width. It must not be possible to confuse these projections with the join mouldings which can exist between the ribs or blocks of the tread.
- 6.3.2. However, in the case of tyres of dimensions appropriate for mounting on rims of a nominal diameter of 12 or less, four rows of tread-wear indicators shall be accepted.
- 6.3.3. The wear indicators give visual warning when the depth of the corresponding tread-grooves has been reduced to 1.6 mm (\pm 15 %)

(7)

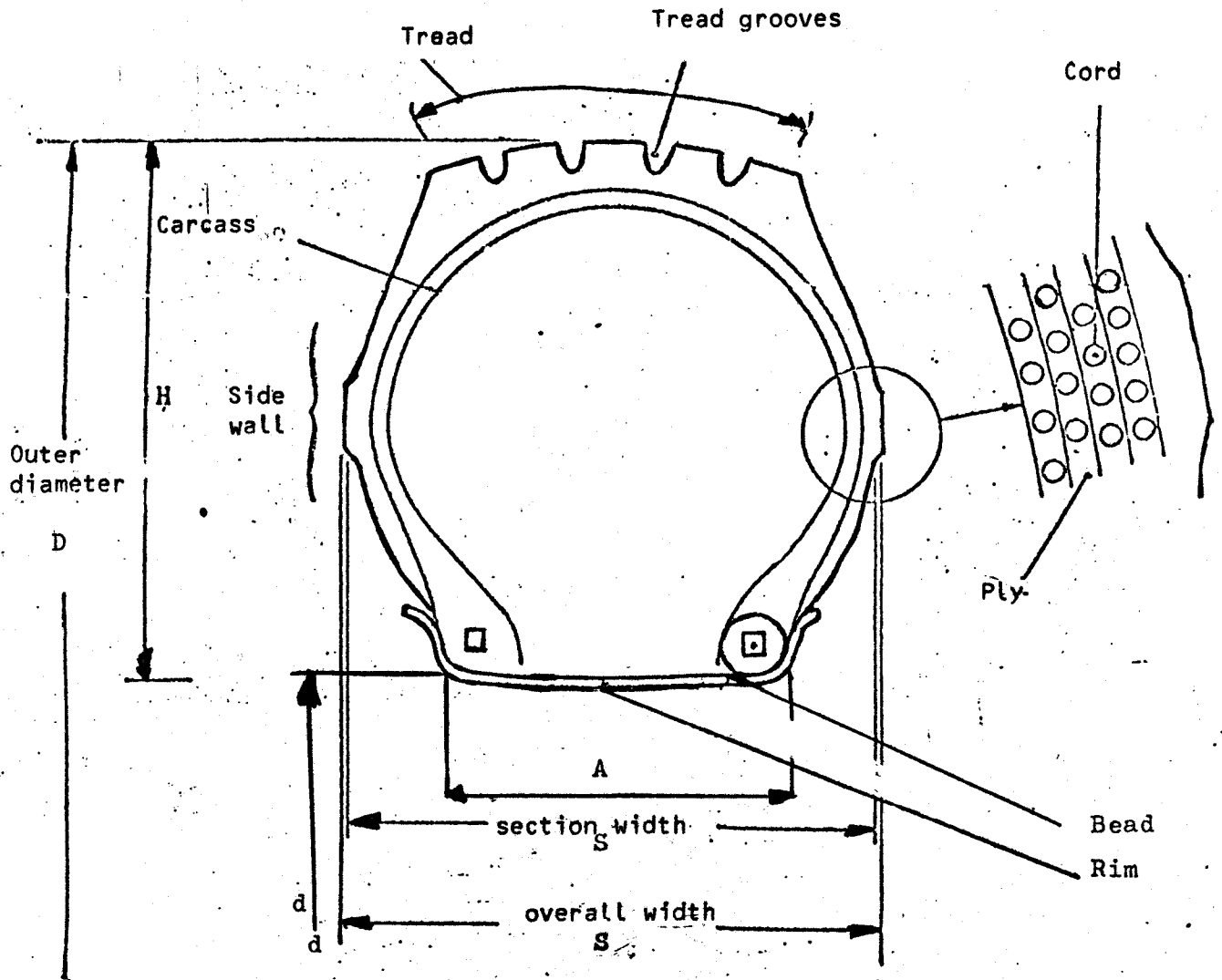
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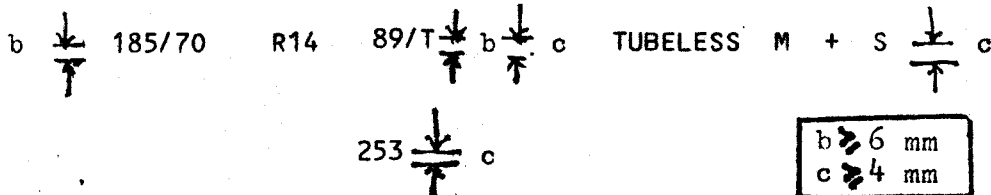
Explanatory figure
(see item 2. of annex II)



A N N E X III

ARRANGEMENT OF TYRE MARKINGS

Example of the markings to be borne by tyres placed on the market after the notification of this Directive.



These markings define a pneumatic tyre :

- having a nominal section width of 185;
- having a nominal aspect ratio of 70;
- of radial-ply structure (R);
- having a nominal rim diameter for which the symbol is 14
- having a load capacity of 580 kg, corresponding to load index 89 in annex IV;
- classified in the speed category T (maximum speed 190 km/h);
- for fitting without an inner tube ("tubeless");
- of "snow" type;
- manufactured during the 25th week of the year 19.3

The positioning and order of the markings constituting the tyre designation shall be the following :

- a) the size designation, comprising the nominal section width, the nominal aspect ratio, the speed-category symbol, the type-of-structure symbol (where applicable) and the nominal rim diameter, shall be grouped as shown in the above example :
185/70 R 14;
- b) the load index and the symbol of the speed category shall be placed near the size designation. It may either precede or follow it or be placed above or below it;
- c) the symbols "tubeless", "reinforced", and "M + S" may be at a distance from the size-designation symbol.

A N N E X IV

LIST OF LOAD-CAPACITY-INDEX SYMBOLS

| Load-capacity index | Maximum load corresponding to the maximum speed fixed by the category of type. (mass expressed in kg) |
|---------------------|---|
| 0 | 45 |
| 1 | 46,2 |
| 2 | 47,5 |
| 3 | 48,7 |
| 4 | 50 |
| 5 | 51,5 |
| 6 | 53 |
| 7 | 54,5 |
| 8 | 56 |
| 9 | 58 |
| 10 | 60 |
| 11 | 61,5 |
| 12 | 63 |
| 13 | 65 |
| 14 | 67 |
| 15 | 69 |
| 16 | 71 |
| 17 | 73 |
| 18 | 75 |
| 19 | 77,5 |
| 20 | 80 |
| 21 | 82,5 |
| 22 | 85 |
| 23 | 87,5 |
| 24 | 90 |
| 25 | 92,5 |
| 26 | 95 |
| 27 | 97,5 |
| 28 | 100 |
| 29 | 103 |
| 30 | 106 |
| 31 | 109 |
| 32 | 112 |
| 33 | 115 |
| 34 | 118 |
| 35 | 121 |
| 36 | 125 |
| 37 | 128 |
| 38 | 132 |
| 39 | 136 |
| 40 | 140 |
| 41 | 145 |
| 42 | 150 |
| 43 | 155 |
| 44 | 160 |
| 45 | 165 |

| Load-capacity-index | Maximum load corresponding to the maximum speed fixed by the category of tyre (mass expressed in kg) |
|---------------------|---|
| 46 | 170 |
| 47 | 175 |
| 48 | 180 |
| 49 | 185 |
| 50 | 190 |
| 51 | 195 |
| 52 | 200 |
| 53 | 206 |
| 54 | 212 |
| 55 | 218 |
| 56 | 224 |
| 57 | 230 |
| 58 | 236 |
| 59 | 243 |
| 60 | 250 |
| 61 | 257 |
| 62 | 265 |
| 63 | 272 |
| 64 | 280 |
| 65 | 290 |
| 66 | 300 |
| 67 | 307 |
| 68 | 315 |
| 69 | 325 |
| 70 | 335 |
| 71 | 345 |
| 72 | 355 |
| 73 | 365 |
| 74 | 375 |
| 75 | 387 |
| 76 | 400 |
| 77 | 412 |
| 78 | 425 |
| 79 | 437 |
| 80 | 450 |
| 81 | 462 |
| 82 | 475 |
| 83 | 487 |
| 84 | 500 |
| 85 | 515 |
| 86 | 530 |
| 87 | 545 |
| 88 | 560 |
| 89 | 580 |
| 90 | 600 |
| 91 | 615 |
| 92 | 630 |
| 93 | 650 |
| 94 | 670 |
| 95 | 690 |

| Load-capacity-index | Maximum load corresponding to the maximum speed fixed by the category of tyre (mass expressed in kg) |
|---------------------|--|
| 96 | 710 |
| 97 | 730 |
| 98 | 750 |
| 99 | 775 |
| 100 | 800 |
| 101 | 825 |
| 102 | 850 |
| 103 | 875 |
| 104 | 900 |
| 105 | 925 |
| 106 | 950 |
| 107 | 975 |
| 108 | 1 000 |
| 109 | 1 030 |
| 110 | 1 060 |
| 111 | 1 090 |
| 112 | 1 120 |
| 113 | 1 150 |
| 114 | 1 180 |
| 115 | 1 215 |
| 116 | 1 250 |
| 117 | 1 285 |
| 118 | 1 320 |
| 119 | 1 360 |
| 120 | 1 400 |

The formula giving the maximum load corresponding to the value LI = n is as follows :

$$45 \left(\frac{80}{\sqrt{10}} \right)^n = 45 \times (1,0292)^n$$

A N N E X V

METHOD OF MEASURING PNEUMATIC TYRES

- 1.1. The tyre is mounted on the measuring rim specified by the manufacturer and is inflated to a pressure of 3 to 3.5 bars.
- 1.2. The pressure in the tyre is then reduced as follows :
 - 1.2.1. in bias - belted tyres to 1.7 bars;
 - 1.2.2. in diagonal(bias-ply) tyres to :

| Ply-rating | Pressure (bars) | | |
|------------|-----------------|------------|---------|
| | Speed category | | |
| | L, M, N | P, Q, R, S | T, U, H |
| 4 | 1.7 | 2.0 | - |
| 6 | 2.1 | 2.4 | 2.6 |
| 8 | 2.5 | 2.8 | 3.0 |

- 1.2.3. in normal radial tyres to 1.8 bar and
- 1.2.4. in reinforced radial tyres to 2.3 bars.
- 2. The tyre, mounted on its rim, is conditioned at the ambient room temperature for not less than 24 hours, with the exception referred to in item 6.2.3 of annex II.
- 3. The pressure is readjusted to that specified in item 1.2.
- 4. The overall width is measured by caliper at six equally-spaced points, account being taken of the thickness of the protective ribs or bands. The highest measurements so obtained is taken as the overall width. The outer diameter is determined by measuring the maximum circumference and dividing the figure so obtained by π (3.1416).

A N N E X VI

PROCEDURE FOR LOAD/SPEED PERFORMANCE TESTS

1. Preparing the tyre

1.1. A new tyre is mounted on the test rim specified by the manufacturer.

1.2. It is inflated to the appropriate pressure as given in the table below :

TEST PRESSURE (bars)

| Speed category | Diagonal (bias-ply) tyres | | | Radial tyres | | Bias-belted tyres |
|----------------|---------------------------|-----|-----|--------------|------------|-----------------------|
| | Ply-rating | | | Normal | Reinforced | Normal and reinforced |
| 4 | 6 | 8 | | | | |
| L, M, N | 2.3 | 2.7 | 3.0 | - | - | - |
| P, Q, R, S | 2.6 | 3.0 | 3.3 | 2.6 | 3.0 | 2.6 |
| T, U, H | 2.8 | 3.2 | 3.5 | 2.8 | 3.2 | 2.8 |

The above mentioned pressures shall be respected for test wheels with a diameter of 2 m. For test wheels with a diameter of 1.70 m the pressure value shall be increased by 5 %.

1.3. The manufacturer may request, giving reasons the use of an inflation pressure differing from those given under item 1.2. In such a case the tyre shall be inflated to that pressure.

1.4. The tyre-and-wheel assembly is conditioned at test-room temperature for not less than three hours.

1.5. The tyre pressure is readjusted to that specified in item 1.2 or 1.3.

2. Carrying out the test

2.1. The tyre-and-wheel assembly is mounted on a test axle and pressed against the outer face of a flat-faced test wheel 1.70 m to 2 m in diameter.

2.2. A load equal to 80 per cent of the tyre's load capacity, as shown, in the list in annex IV, opposite the load index given on the side wall of the tyre, is applied to an axle.

2.3. Throughout the test the tyre pressure must not be corrected and the test load must be kept constant.

- 2.4. During the test the temperature in the test-room must be maintained at between 20° and 30°.
- 2.5. The test is carried out without interruption in conformity with the following particulars :
- 2.5.1. Time taken to pass from zero speed to initial test speed : 10 minutes.
- 2.5.2. Initial test speed : prescribed maximum speed for the type of tyre, less 40 km/h.
- 2.5.3. Successive speed increments : 10 km/h.
- 2.5.4. Duration of test at each speed step except the last : 10 minutes.
- 2.5.5. Duration of test at last speed step : 20 minutes.
- 2.5.6. Maximum test speed : prescribed maximum speed for the type of tyre.

3. Equivalent test methods

If a method other than that described in item 2 above is used, its equivalence must be demonstrated.

ANNEX VII

Maximum format A 4 (210 x 297 mm)

Name of the competent Authority

Model for the notification of the issue or the refusal of an EEC mark for one or more tyre types

Number of EEC mark (... extension) (1)

1. Trade name or mark of the tyre
2. Manufacturer's name and address
3. If applicable, name and address of manufacturer's representative
4. Request for EEC mark made on
5. Where applicable, the technical service and test laboratory approved for purposes of verification of conformity
6. If applicable, the date of report issued by that service
7. If applicable, the number of report issued by that service
8. Liste of tyre types for which the EEC mark has been issued/refused(2)
9. EEC mark has been granted/refused (2)
10. Place
11. Date
12. Signature

The following documents are annexed to this notification : (3)

(1) State, when appropriate, whether first, second etc. extension of an EEC mark.

(2) Delete items not applicable.

(3) To be completed, if necessary.

ANNEX VIII

(Maximum format A₄ (210 x 297 mm)

Name of competend Authority

Model for the statement that a tyre type bearing an EEC mark does not conform to the requirements of Directive 77/.../EEC

1. Trade name or mark of the tyre
2. Manufacturer's name and address
3. If applicable, name and address of manufacturer's representative.....
4. Number of EEC mark
5. Marking on the tyre
6. The manufacturer has been obliged to withdraw from circulation the tyres which do not conform
7. The EEC mark has been withdrawn for this tyre type on
8. Reasons for this measure
9. Place
10. Date
11. Signature

ANNEX IXCONDITIONS RELATING TO THE FITTING OF TYRES TO VEHICLES

Vehicle tyres must meet the following requirements :

1. All of the tyres fitted to a vehicle must be identical as far as the provisions of paragraphs 2.1.3. to 2.1.5. of Annex II are concerned. In addition, tyres on the same axis must be of the same type within the meaning of Annex II, item 2.1.
2. The load capacity as defined in Annex II, 2.29 must be :
 - 2.1. in the case of tyres of the same type being fitted to the vehicle :
 - 2.1.1 at least equal to half of the maximum technically permissible weight for the most heavily loaded axle, as declared by the vehicle manufacturer;
 - 2.1.2. however, in the case of axles fitted with twin tyres, the load capacity must be at least equal to 1.27 times the maximum technically permissible weight for the most heavily loaded axle, as declared by the vehicle manufacturer.
 - 2.2. at least equal to half of the maximum technically permissible weight for the axle under consideration, as declared by the vehicle manufacturer, in the case of tyres of two different dimensions being fitted to the vehicle.
3. For on-highway tyres, the maximum speed, as defined in Annex II, item 2.30 must be at least equal to the maximum design speed of the vehicle.
4. The tyre fitted to the spare wheel of a vehicle must be identical to one of the tyres fitted to the vehicle.