Council Directive of 16 October 1978 on the approximation of the laws of the Member States relating to head restraints of seats of motor vehicles (78/932/EEC) (repealed)

ANNEX I

SCOPE, DEFINITIONS, APPLICATION FOR EEC COMPONENT TYPE-APPROVAL, GENERAL SPECIFICATIONS, TESTS AND CONFORMITY OF PRODUCTION

1. SCOPE

1.1. This Directive applies to head restraints (head rests):
— forming an integral part of the seatback, or
— designed to be installed on the seat,

of motor vehicles conforming to the definition given in Article 9 and intended for separate use, i.e. as individual equipment by adult occupants of forward-facing seats.

2. DEFINITIONS

2.1. Vehicle type with regard to head restraints

‘Vehicle type with regard to head restraints’ means vehicles which do not differ in such essential respects as:

2.1.1. the lines and internal dimensions of the bodywork constituting the passenger compartment; and

2.1.2. the types and dimensions of the seats.

2.2. Head restraint

‘Head restraint’ means a device whose purpose is to limit the rearward displacement of the occupant's head in relation to his torso in order to reduce the danger of injury to the cervical vertebrae in the event of an accident. This device may or may not form an integral part of the seatback.

2.3. Type of seat

‘Type of seat’ means seats which do not differ in their dimensions, in their framework or in their padding, although they may differ in finish or colour.

2.4. Type of head restraint

‘Type of head restraint’ means head restraints which do not differ in their dimensions, in their framework or in their padding, although they may differ in finish, colour or covering.

2.5. H point

(see Annex II).

2.6. R point or seating reference point

(see Annex II).

2.7. Reference line r

‘Reference line r’ means a straight line which, either on a test manikin having the mass and dimensions of an average adult male or on a test manikin having identical characteristics, passes through the joint of the leg with the pelvis and the joint of the neck with the thorax. On the manikin referred to in Section 3 of Annex III to Council Directive 77/649/EEC of 27 September 1977 on the approximation of the laws of the Member States relating to the field of vision of

motor vehicle drivers[1], to which reference is made in Annex II to this Directive, the reference line is that shown in Figure 1 in the Appendix to Annex III to Directive 77/649/EEC.

2.8. Head line

'Head line' means a straight line passing through the centre of gravity of the head and through the joint of the neck with the thorax. When the head is at rest the head line is situated in the extension of the reference line.

3. APPLICATION FOR EEC COMPONENT TYPE-APPROVAL

3.1. The application for EEC component type-approval must be submitted by the holder of the trade name or mark of the seat or head restraint or by his authorized representative.

3.2. It must be accompanied by the following documents in triplicate:

3.2.1. a detailed description of the head restraint, specifying in particular the nature of the padding material or materials and, where applicable, the position and specifications of the supports and anchorages for the type or types of seats for which component type-approval of the head restraint is sought;

3.2.2. a detailed description of the type or types of seats for which component type-approval of the head restraint is sought;

3.2.3. details of the type or types of vehicle on which the seats referred to in 3.2.2 are intended to be fitted;

3.2.4. dimensional drawings of the characteristic parts of the seat and head restraint.

3.3. The following must be submitted to the technical service responsible for conducting the component type-approval tests:

3.3.1. if the head restraint is an integral part of the seat: four complete seats;

3.3.2. if the head restraint is intended to be firmly anchored to the seat:

3.3.2.1. two seats of each type to which the head restraint is to be fitted;

3.3.2.2. 4 + 2N head restraints, N being the number of types of seat to which the head restraint is to be fitted.

3.4. The technical service responsible for conducting the component type-approval tests may request:

3.4.1. the submission of specific parts or specific samples of the materials used; and/or

3.4.2. the submission of vehicles of the type or types referred to in 3.2.3.

4. MARKINGS

4.1. The devices submitted for component type-approval must:

4.1.1. be clearly and indelibly marked with the trade name or mark of the applicant;

4.1.2. provide adequate space on the lateral face for the component type-approval mark: this space must be shown in the drawings referred to in 3.2.4.

4.2. Where the head restraint forms an integral part of the seat, the markings referred to in 4.1.1 and 4.1.2 must be placed on the part of the seat which is used as a head restraint.

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6. GENERAL SPECIFICATIONS

6.1. The presence of the head restraint in a vehicle must not be an additional cause of danger to occupants of the vehicle. In particular it must not in any position of use exhibit any dangerous roughness or sharp edge liable to increase the risk or seriousness of injury to the occupants. Parts of the head restraint which are situated in the impact zone defined below must be capable of dissipating energy in the manner specified in Annex V to this Directive:

6.1.1. the impact zone must be bounded laterally by two vertical longitudinal planes, one on each side of and each 70 mm distant from the plane of symmetry of the seat concerned;

6.1.2. the impact zone must be limited in height to the part of the head restraint situated above the plane perpendicular to the reference line r and 635 mm distant from the R point.

6.2. Parts of the front and rear faces of the head restraint which are situated outward of the said vertical longitudinal planes must be so padded as to prevent any direct contact of the head with the structural components, which should in those areas have a radius of curvature of not less than 5 mm.

6.3. The head restraint must be anchored to the seat in such a way that no rigid and dangerous part projects from the padding of the head restraint, from the anchorage or from the seatback as a result of the pressure exerted by the head during the test.

6.4. The height of the head restraint, measured as described in 7.2, must not be less than 700 mm above the seating reference point R.

6.5. The height of the device on which the head rests, measured as described in 7.2, must, in the case of a head restraint adjustable for height, not be less than 100 mm.

6.6. There must be no gap of more than 50 mm between the seatback and the head restraint in the case of a device not adjustable for height. If the head restraint is adjustable for height, it must, when in the low position, be no more than 25 mm from the top of the seatback.

6.7. The width of the head restraint must be such as to provide suitable support for the head of a person normally seated. In the plane of measurement of width defined in 7.3, the head restraint shall cover an area extending not less than 85 mm to each side of the plane of symmetry of the seat for which the head restraint is intended, that distance being measured in accordance with 7.3.

6.8. The head restraint and its anchorage must be such that the maximum backward displacement of the head permitted by the head restraint and measured in conformity with the static procedure laid down in 7.4 is less than 102 mm.

6.9. The head restraint and its anchorage must be strong enough to bear without failure the load specified in 7.4.3.7.

7. TESTS

7.1. Verification of the R point of the seat in which the head restraint is to be incorporated

This point is verified in accordance with the requirements of Annex II.

7.2. Determination of the height of the head restraint

7.2.1. All lines must be drawn in the plane of symmetry of the seat concerned, the intersection of which plane with the seat determines the contour of the head restraint and of the seatback (see Annex III, Figure 1).

7.2.2. The manikin corresponding to an average adult male or the manikin referred to in Section 3 of Annex III to Directive 77/649/EEC must be placed in a normal position on the seat. The seatback, if inclinable, is locked in a position corresponding to a rearward inclination of the reference line of the manikin's torso of as nearly as possible 25° from the vertical.

7.2.3. The projection of the reference line of the manikin referred to in Section 3 of Annex III to Directive 77/649/EEC is then, in the case of the seat concerned, drawn in the plane specified in 7.2.1. The tangent S to the top of the head restraint is drawn perpendicular to the reference line.

7.2.4. The distance h from the R point to the tangent S is the height to be taken into consideration in implementing the requirement of 6.4.

7.3. Determination of the width of the head restraint

(see Annex III, Figure 2).

7.3.1. The plane S_1 perpendicular to the reference line and situated 65 mm below the tangent S defined in 7.2.3 defines a section in the head restraint bounded by the outline C. The direction of the straight lines tangential to C representing the intersection of the plane S_1 and the vertical planes (P and P′), parallel to the plane of symmetry of the seat concerned, are drawn in the plane S_1.

7.3.2. The width of the head restraint to be taken into consideration in implementing the requirements of 6.7 is the distance L separating the projections of planes P and P′ in plane S_1.

7.3.3. The width of the head restraint must if necessary also be determined 635 mm above the seating reference point, this distance being measured along the reference line.

7.4. Determination of the effectiveness of the device

7.4.1. The effectiveness of the head restraint is to be checked by the static test described below.

7.4.2. Preparation for the test

7.4.2.1. If the head restraint is not an integral part of the seat, it must be set in the highest position.

7.4.3. Testing

7.4.3.1. All lines must be drawn in the vertical plane of symmetry of the seat concerned (see Annex IV).

7.4.3.2. A projection of the reference line r is drawn in the plane referred to in 7.4.3.1.

7.4.3.3. The displaced reference line r_1 is determined by applying to the part simulating the back in the manikin referred to in Annex III to Directive 77/649/EEC, an initial force producing a rearward moment of 37·3 mdaN about the R point.

7.4.3.4. By means of a spherical head 165 mm in diameter an initial force producing a moment of 37·3 mdaN about the R point is applied at right angles to the displaced reference line r_1 at a distance of 65 mm below the top of the head restraint.

7.4.3.5. The tangent Y to the spherical head, parallel to the displaced reference line r_1, is determined.

7.4.3.6. The distance X between the tangent Y and the displaced reference line r_1 is measured. The requirement of 6.8 is deemed to be met if the distance X is less than 102 mm.

7.4.3.7. The initial load specified in 7.4.3.4 is increased to 89 daN unless breakage of the seat or the seatback occurs earlier.

8. CONFORMITY OF PRODUCTION

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8.4. Head restraints selected for verification of conformity with an approved type must at least undergo the test described in Section 7.

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10. INSTRUCTIONS

With each model conforming to an approved type of head restraint, the manufacturer shall supply particulars of the types and characteristics of the seats for which the head restraint is approved and, where appropriate, the directions to the user of the head restraint on how to fit it correctly to the seats concerned.

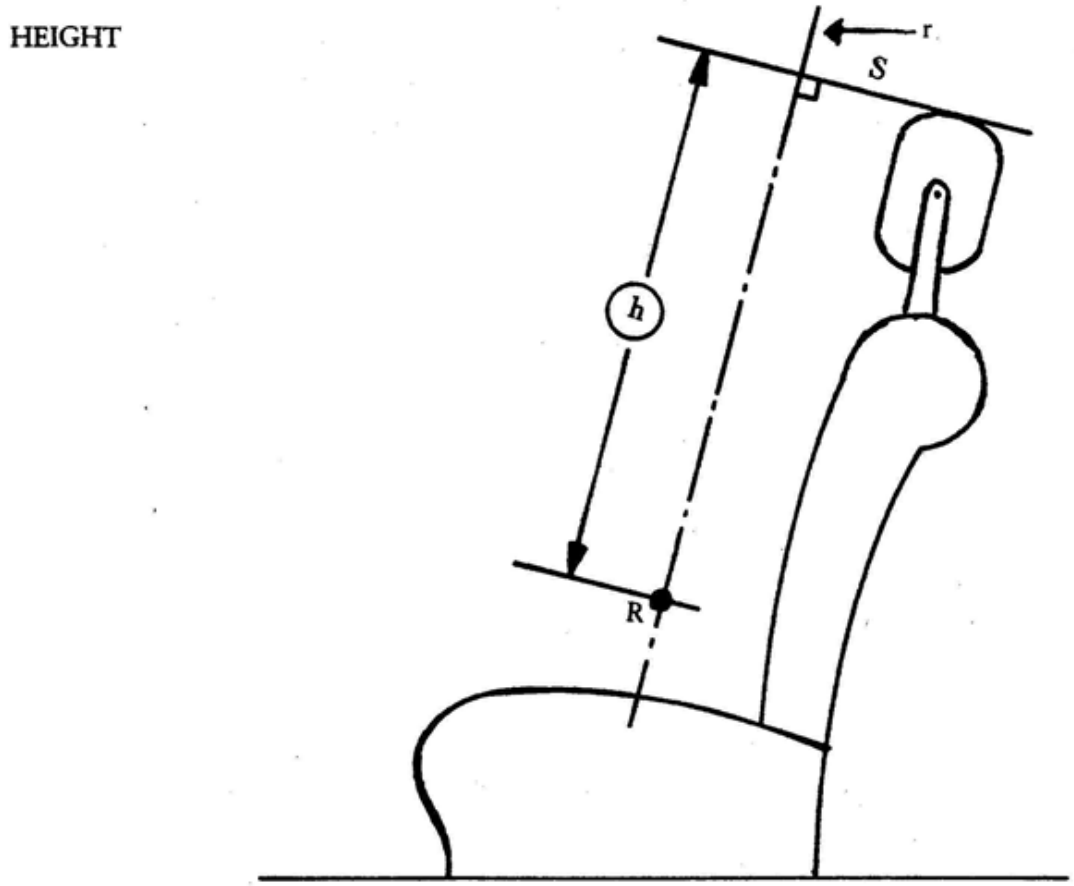
ANNEX II

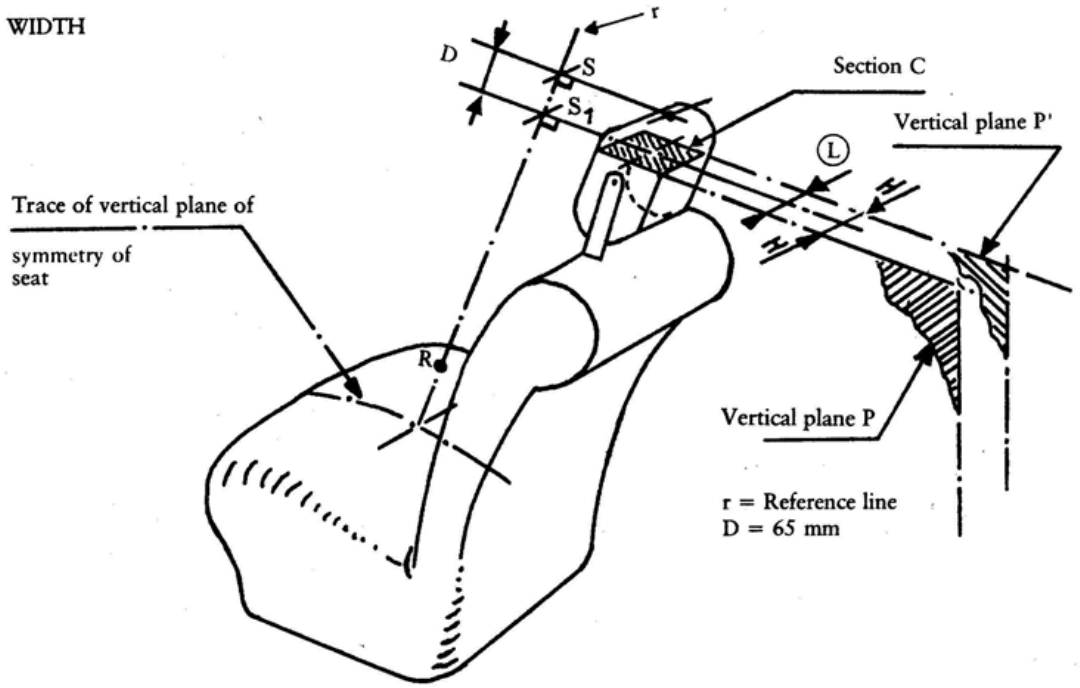
PROCEDURE FOR DETERMINING THE ‘H’ POINT AND THE ACTUAL SEATBACK ANGLE AND FOR VERIFYING THE RELATIVE POSITIONS OF THE R AND H POINTS AND THE RELATIONSHIP BETWEEN THE DESIGN SEATBACK ANGLE AND THE ACTUAL SEATBACK ANGLE

Annex III to Directive 77/649/EEC shall be applicable.

ANNEX III

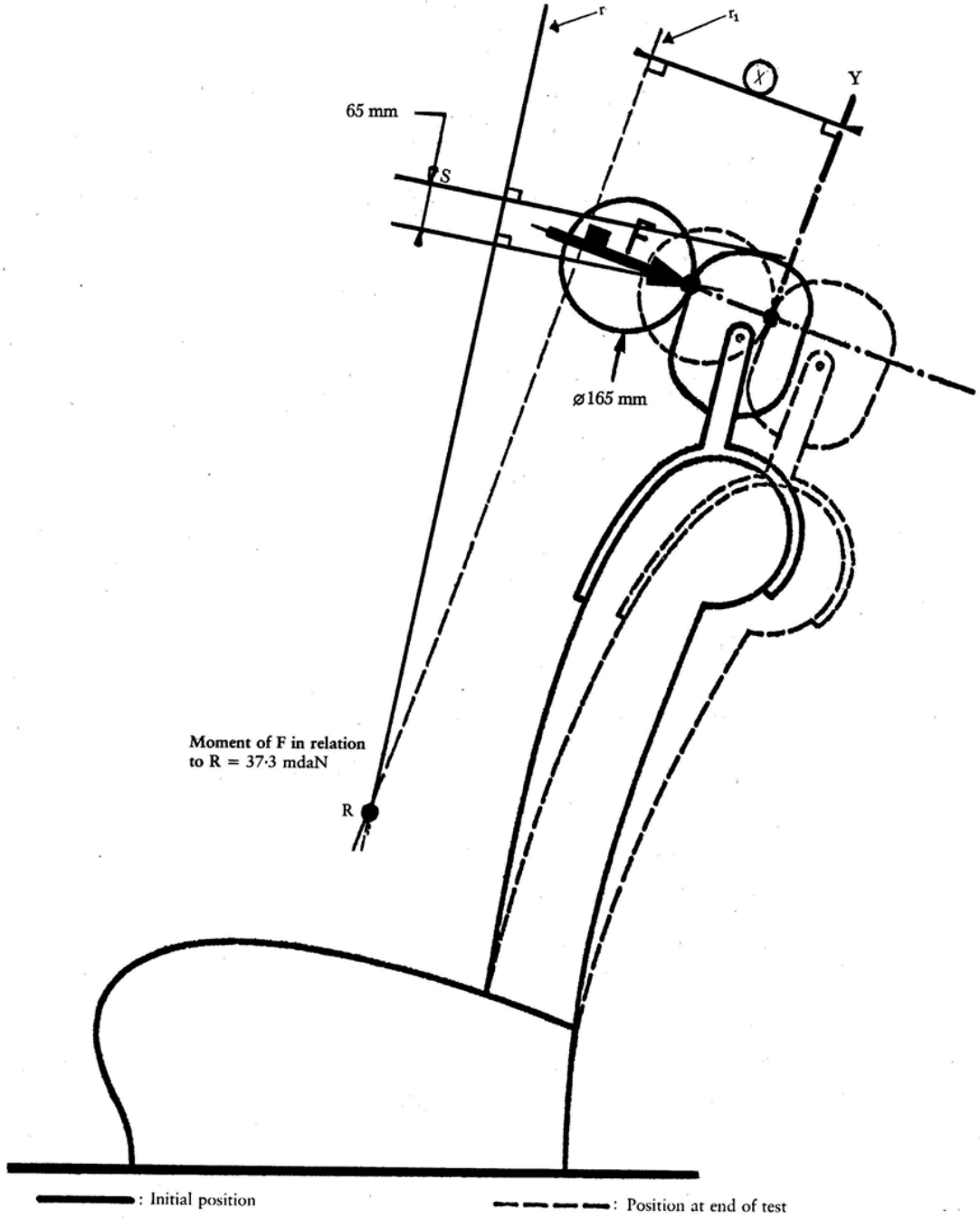
DETERMINATION OF HEIGHT AND WIDTH OF HEAD RESTRAINT





ANNEX IV

DETAILS OF LINES DRAWN AND MEASUREMENTS TAKEN DURING TEST



ANNEX V

TEST PROCEDURE FOR CHECKING ENERGY DISSIPATION

1. SETTING UP, TEST APPARATUS, RECORDING INSTRUMENTS AND PROCEDURE

1.1. Setting up

The head restraint must be fitted and tested on the seat of the vehicle for which it is intended. The seat must be firmly secured to the test bench so that it does not move under impact.

1.2. Test apparatus

1.2.1. This apparatus consists of a pendulum whose pivot is supported by ball-bearings and whose reduced mass[2] at its centre of percussion is 6·8 kg. The lower extremity of the pendulum consists of a rigid headform 165 mm in diameter whose centre is identical with the centre of percussion of the pendulum.

1.2.2. The headform is fitted with two accelerometers and a speed-measuring device, all capable of measuring values in the direction of impact.

1.3. Recording instruments

The recording instruments used must be such that measurements can be made with the following degrees of accuracy:

1.3.1. Acceleration:
— accuracy: ± 5 % of the real value,
— frequency response: up to 1 000 Hz
— cross-axis sensitivity: < 5 % of the lowest point on the scale.

1.3.2. Speed:
— accuracy: ± 2·5 % of the real value,
— sensitivity: 0·5 km/h.

1.3.3. Time recording:
— the instrumentation must enable the action to be recorded throughout its duration and readings to be made within one thousandth of a second,
— the beginning of the impact at the moment of first contact between the headform and the head restraint being tested is noted on the recordings used for analyzing the test.

1.4. Test procedure

1.4.1. The surface to be tested must be so placed that the pendulum will strike the surface perpendicular to the point concerned.

1.4.2. The headform must strike the test item at a speed of 24·1 km/h this speed is achieved either by the mere energy of propulsion or by using an additional propelling device.

2. RESULTS

In tests carried out by the above procedure, the deceleration of the headform must not exceed 80 g continuously for more than three milliseconds. The deceleration rate is taken as the average of the readings on the two decelerometers.

3. EQUIVALENT PROCEDURES

3.1. Equivalent test procedures are permitted on condition that the results required in Section 2 can be obtained.

3.2. Responsibility for demonstrating the equivalence of a method other than that described in Section 1 rests with the person using such a method.

ANNEX VI

EEC COMPONENT TYPE-APPROVAL MARK

1. GENERAL

1.1. The EEC component type-approval mark consists of:

1.1.1. a rectangle surrounding the lower-case letter ‘e’ followed by the distinguishing number or letters of the Member State which has granted the EEC component type-approval:

[F1 1	for Germany
2	for France
3	for Italy
4	for the Netherlands
6	for Belgium
9	for Spain
11	for the United Kingdom
13	for Luxembourg
DK	for Denmark
[F2 EL	for Greece**]**
IRL	for Ireland
P	for Portugal**[**F3;**]]**
[F4**[**F5 12	for Austria
17	for Finland
5	for Sweden**[**F6;**]]]**
[F7 8	for the Czech Republic
29	for Estonia
CY	for Cyprus
32	for Latvia
36	for Lithuania
7	for Hungary
MT	for Malta
20	for Poland
26	for Slovenia
27	for Slovakia**[**F8;**]]**
[F9 34	for Bulgaria
19	for Romania;**]**

Textual Amendments

F1 Substituted by Act concerning the conditions of accession of the Kingdom of Spain and the Portuguese Republic and the adjustments to the Treaties.

F2 Substituted by Council Directive of 25 June 1987 amending certain directives on the approximation of the laws of the Member States relating to industrial products with respect to the distinctive numbers and letters indicating the Member States (87/354/EEC).

F3 Deleted by Act concerning the conditions of accession of the Kingdom of Norway, the Republic of Austria, the Republic of Finland and the Kingdom of Sweden and the adjustments to the Treaties on which the European Union is founded (94/C 241/08).

F4 Inserted by Act concerning the conditions of accession of the Kingdom of Norway, the Republic of Austria, the Republic of Finland and the Kingdom of Sweden and the adjustments to the Treaties on which the European Union is founded (94/C 241/08).

F5 Substituted by Decision of the Council of the European Union of 1 January 1995 adjusting the instruments concerning the accession of new Member States to the European Union (95/1/EC, Euratom, ECSC).

F6 Deleted by Act concerning the conditions of accession of the Czech Republic, the Republic of Estonia, the Republic of Cyprus, the Republic of Latvia, the Republic of Lithuania, the Republic of Hungary, the Republic of Malta, the Republic of Poland, the Republic of Slovenia and the Slovak Republic and the adjustments to the Treaties on which the European Union is founded.

F7 Inserted by Act concerning the conditions of accession of the Czech Republic, the Republic of Estonia, the Republic of Cyprus, the Republic of Latvia, the Republic of Lithuania, the Republic of Hungary, the Republic of Malta, the Republic of Poland, the Republic of Slovenia and the Slovak Republic and the adjustments to the Treaties on which the European Union is founded.

F8 Deleted by Council Directive 2006/96/EC of 20 November 2006 adapting certain Directives in the field of free movement of goods, by reason of the accession of Bulgaria and Romania.

F9 Inserted by Council Directive 2006/96/EC of 20 November 2006 adapting certain Directives in the field of free movement of goods, by reason of the accession of Bulgaria and Romania.

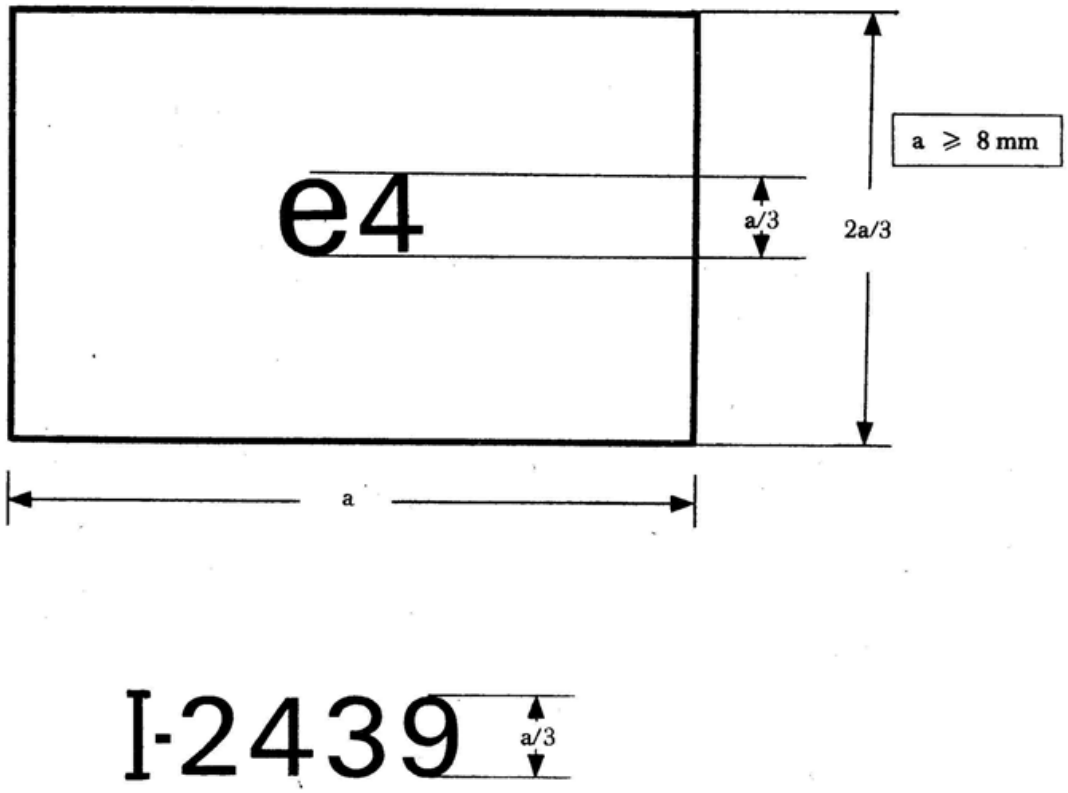
1.1.2. it must also include the EEC component type-approval number which corresponds to the number of the EEC component type-approval certificate issued for the type of head restraint in question; this number is placed in any convenient position near the rectangle;

1.1.3. where the head restraint is an integral part of the seatback, the EEC component type-approval number is preceded by the letter ‘I’ and a dash:

1.2. The EEC component type-approval mark must be clearly legible and indelible.

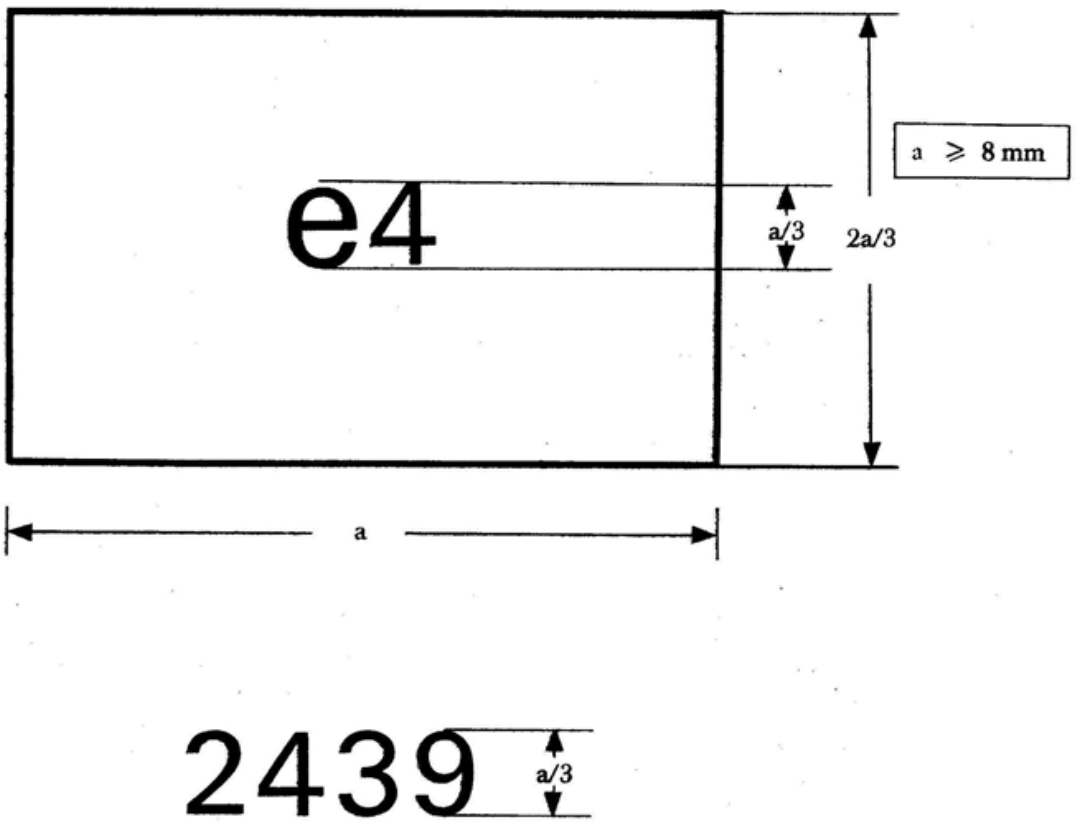
2. TWO EXAMPLES OF EEC COMPONENT TYPE-APPROVAL MARKS

2.1. Component type-approval mark of a head restraint which forms an integral part of the seat



The above component type-approval mark affixed to a head restraint or restraints forming an integral part of the seat or seats of a vehicle shows that the type of seat in question has been approved with regard to head restraints in the Netherlands (e4) under the number 2439.

2.2. EEC component type-approval mark of a head restraint which is not an integral part of a seat



The above component type-approval mark affixed to a head restraint shows that the head restraint in question has been granted EEC component type-approval, that it is a head restraint which is not an integral part of a seat and is approved in the Netherlands under the number 2439.

ANNEX VII

MODEL EEC COMPONENT TYPE-APPROVAL CERTIFICATE
(Maximum format: A4 (210 × 297 mm))

Name of administration

Notification concerning the granting, refusal or withdrawal of EEC component type-approval for a type of head restraint, whether or not incorporated in a seat

EEC component type-approval No .....

1. Trade name or mark .....
2. Manufacturer's name and address .....

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3. Where applicable, name of manufacturer's authorized representative .....

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4. Date of submission for EEC component type-approval .....
5. Technical service conducting EEC component type-approval tests .....

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6. Brief description of the head restraint (1) .....

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   .....
7. Type and characteristics of the seats for which the head restraint is intended or in which it is incorporated .....

   .....
8. Types of vehicles for which the seats on which the head restraint may be fitted are intended .....
9. Date of report issued by the technical service .....
10. Number of report issued by the technical service .....
11. EEC component type-approval in respect of head restraints, whether or not incorporated, is hereby granted/refused (2)
12. Place .....
13. Date .....
14. Signature .....
15. The following documents, bearing the EEC component type-approval number shown above, are annexed to this EEC component type-approval certificate:

    ..... drawings, diagrams and photographs of the head restraint and of seats for which the head restraint is intended or in which it is incorporated.
16. Remarks .....

    .....

(1) In the case of an incorporated head restraint this section need not be completed if all the necessary characteristics and particulars are entered under Section 8.
(2) Delete where inapplicable.

(**1**) OJ No L 267, 19. 10. 1977, p. 1.

(**2**) The relationship of the reduced mass ‘m_r’ of the pendulum to the total mass ‘m’ of the pendulum at a distance ‘a’ between the centre of percussion and the axis of rotation and at a distance ‘l’ between the centre of gravity and the axis of rotation is given by the formula: ·