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COUNCIL DIRECTIVE

of 18 December 1975

on the approximation of the laws of the Member States relating to anchorages for motor-vehicle safety belts

(76/115/EEC)

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► <u>M1</u> Council Directive 81/575/EEC of 20 July 1981	L 209	30	29.7.1981
► <u>M2</u> Commission Directive 82/318/EEC of 2 April 1982	L 139	9	19.5.1982
► <u>M3</u> Commission Directive 90/629/EEC of 30 October 1990	L 341	14	6.12.1990
► <u>M4</u> Commission Directive 96/38/EC of 17 June 1996	L 187	95	26.7.1996

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on the approximation of the laws of the Member States relating to anchorages for motor-vehicle safety belts

(76/115/EEC)

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 ⁽¹⁾,

Having regard to the opinion of the Economic and Social Committee ⁽²⁾,

Whereas the technical requirements with which motor vehicles must comply pursuant to national laws relate *inter alia* to safety belt anchorages;

Whereas those 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, in particular, to allow the EEC type-approval procedure, which was the subject of 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 ⁽³⁾, to be introduced in respect of each type of vehicle;

Whereas common requirements for the interior fittings of the passenger compartment, the layout of the controls, the roof, the backrest and rear part of the seats were laid down by Directive 74/60/EEC ⁽⁴⁾; whereas common requirements on interior fittings relating to the behaviour of the steering mechanism in the event of impact were laid down by Directive 74/297/EEC ⁽⁵⁾; whereas common requirements concerning the strength of seats and their anchorages were laid down by Directive 74/408/EEC ⁽⁶⁾; whereas other requirements will be adopted subsequently concerning interior fittings, and in particular safety belts, head restraints and the identification of controls;

Whereas approximation of the national laws relating to motor vehicles entails recognition by the Member States of the checks carried out by each of them on the basis of the common requirements; whereas, for it to operate effectively, such a system calls for the implementation of these requirements by all of the Member States with effect from the same date,

HAS ADOPTED THIS DIRECTIVE:

Article 1

▼ M4

This Directive applies to anchorages for motor vehicle safety belts intended for adult occupants of forward or rear-facing seats.

▼ M1

Article 2

For the purposes of this Directive, 'vehicle' means any motor vehicle in categories M and N as defined in ► M4 Annex II A ◀ to Directive 70/

⁽¹⁾ OJ No C 5, 8. 1. 1975, p. 41.

⁽²⁾ OJ No C 47, 27. 2. 1975, p. 45.

⁽³⁾ OJ No L 42, 23. 2. 1970, p. 1.

⁽⁴⁾ OJ No L 38, 11. 2. 1974, p. 2.

⁽⁵⁾ OJ No L 165, 20. 6. 1974, p. 16.

⁽⁶⁾ OJ No L 221, 12. 8. 1974, p. 1.

▼M1

156/EEC intended for use on the road, having at least four wheels and a maximum design speed exceeding 25 km/h.

▼B*Article 3*

No Member State may refuse to grant EEC type-approval or national type-approval of a motor vehicle on grounds relating to the anchorages for safety belts if these anchorages comply with the requirements laid down in ►**M4** the Annexes ◀.

Article 4

No Member State may refuse or prohibit the sale, registration, entry into service or use of any motor vehicle on grounds relating to the anchorages for safety belts if these anchorages comply with the requirements laid down in ►**M4** the Annexes ◀.

Article 5

A Member State which has granted type-approval shall take the necessary measures to ensure that it is informed of any modification to any of the parts or characteristics referred to in Annex I, point 1.1. The competent authorities of that Member State shall determine whether fresh tests should be carried out on the modified vehicle type and a fresh report drawn up. Where such tests reveal failure to comply with the requirements of this Directive, the modification shall not be approved.

Article 6

Any amendments 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 7

1. Member States shall, before 1 October 1976, adopt and publish the provisions necessary to comply with this Directive and shall immediately inform the Commission thereof.

They shall apply these provisions with effect from 1 January 1977.

2. Once this Directive has been notified, the Member States shall also ensure that the Commission is informed of all draft laws, regulations or administrative provisions which they propose to adopt in the field covered by this Directive in sufficient time to enable it to submit its comments.

Article 8

This Directive is addressed to the Member States.

▼M4*LIST OF ANNEXES*

- ANNEX I: Definitions, application for EEC type-approval, granting of EEC type-approval, specifications, tests, conformity of production, instructions:
- Appendix 1: Minimum number of anchorage points,
 - Appendix 2: Location of lower anchorages, angle requirements,
 - Appendix 3: Information document,
 - Appendix 4: Type-approval certificate.
- ANNEX II: Location of effective belt anchorages.
- ANNEX III: Traction device.

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ANNEX I

DEFINITIONS, APPLICATION FOR EEC TYPE-APPROVAL, EEC TYPE-APPROVAL, SPECIFICATIONS, TESTS, CONFORMITY OF PRODUCTION, INSTRUCTIONS

1. DEFINITIONS

For the purpose of this Directive:

- 1.1. '*vehicle type*' as regards safety belt anchorages means a category of vehicles which do not differ in such essential respects as:

the dimensions, lines and constituent materials of the components of the vehicle structure or seat structure or any other part of the vehicle to which the belt anchorages are attached;
- 1.2. '*belt anchorages*' means the parts of the vehicle structure or seat structure or any other part of the vehicle to which the safety belt assemblies are to be secured;
- 1.3. '*safety belt*' (or '*seat belt*' or '*belt*') means an arrangement of straps with a securing buckle, adjusting devices and attachments which is capable of being anchored to a vehicle and is designed to diminish the risk of injury to its wearer, in the event of collision or abrupt vehicle deceleration, by limiting the mobility of the wearer's body. Such an arrangement is generally referred to as a 'belt assembly', a term also embracing any device for energy absorption or belt retraction;
- 1.4. '*strap guide*' means a device which alters the lie of the strap in relation to the wearer of the belt assembly.
- 1.5. '*effective belt anchorage*' means the point used to determine, as specified in point 4.4, the angle of each part of the safety belt in relation to the wearer, that is, the point to which a strap would need to be attached to provide the same lie as the intended lie of the belt when worn, and which may or may not be the actual belt anchorage depending on the configuration of the safety belt hardware at its attachment to the belt anchorage, for example, in the case:
 - 1.5.1. where a safety belt incorporates a rigid part which is attached to a lower belt anchorage and which is either fixed or free to swivel, the effective belt anchorage for all positions of seat adjustment is the point at which the strap is attached to that rigid part,
 - 1.5.2. where a strap guide is used on the vehicle structure or on the seat structure, the middle point of the guide at the place where the strap leaves the guide on the belt wearer's side shall be regarded as the effective belt anchorage; the strap shall lie in a straight line between the effective belt anchorage and the wearer,
 - 1.5.3. where the belt runs directly from the wearer to a retractor attached to the vehicle structure or the seat structure without an intervening strap guide, the effective belt anchorage shall be considered as being the intersection of the axis of the reel for storing the strap with the plane passing through the centre line of the strap on the reel;
- 1.6. '*seat*' means a structure which may or may not be integral with the vehicle structure complete with trim, intended to seat one adult person. The term covers both an individual seat or part of a bench seat intended to seat one person;

▼M3

- 1.6.1. a '*front passenger seat*' means any seat where the 'foremost H-point' of the seat in question is in or in front of the vertical transverse plane through the driver's R-point.

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- 1.7. '*bench seat*' means a structure complete with trim, intended to seat at least two adults;
- 1.8. '*group of seats*' means either a bench-type seat, or seats which are separate but side by side (i.e. fixed so that the front seat anchorages of one of these seats are in line with the front or rear anchorages of the other or between the anchorages of the other seat) and seat one or more adults;

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- 1.9. *'folding* ► **M2** ————— ◀ *seat'* means an auxiliary seat intended for occasional use and which is normally folded out of the way;
- 1.10. *'seat type'* means a category of seats which do not differ in such essential respects as:
- 1.10.1. the shape, dimensions and materials of the seat structure,
- 1.10.2. the types and dimensions of the adjustment systems and all locking systems,
- 1.10.3. the type and dimensions of the belt anchorages on the seat, of the seat anchorage and of the affected parts of the vehicle structure;
- 1.11. *'seat anchorage'* means the system by which the seat assembly is secured to the vehicle structure, including the affected parts of the vehicle structure;
- 1.12. *'adjustment system'* means the device by which the seat or its parts can be adjusted to a position suited to the morphology of the seated occupant; this device may, in particular, allow:
- 1.12.1. longitudinal displacement,
- 1.12.2. vertical displacement,
- 1.12.3. angular displacement,
- 1.13. *'displacement system'* means a device enabling the seat or one of its parts to be displaced angularly or longitudinally, without a fixed intermediate position, to facilitate passenger access;
- 1.14. *'locking system'* means any device ensuring that the seat and its parts are maintained in any position of use and includes both devices to lock the seat back relative to the seat and the seat relative to the vehicle.

▼ M4

- 1.15. *'reference zone'* means the space between two vertical longitudinal planes, 400 mm apart and symmetrical with respect to the H-point, and defined by rotation of the head-form apparatus, described in Annex II of Directive 74/60/EEC, from vertical to horizontal. The apparatus shall be positioned as described in that annex and set to the maximum length of 840 mm.

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2. APPLICATION FOR EEC TYPE-APPROVAL

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- 2.1. The application for type-approval pursuant to Article 3 (4) of Directive 70/156/EEC of a vehicle type with regard to safety belt anchorages shall be submitted by the vehicle manufacturer.
- 2.2. A model for the Information Document is given in Appendix 3.

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- 2.3. The manufacturer shall submit to the technical service either a vehicle representative of the vehicle type to be approved or the parts of the vehicle considered essential for the belt anchorage tests by the technical service responsible for conducting the approval tests.

▼ M4

3. GRANTING OF EC TYPE-APPROVAL
- 3.1. If the relevant requirements are satisfied, EC type-approval pursuant to Article 4 (3) and, if applicable, 4 (4) of Directive 70/156/EEC shall be granted.
- 3.2. A model for the EEC type-approval certificate is given in Appendix 4.
- 3.3. An approval number of accordance with Annex VII of Directive 70/156/EEC shall be assigned to each type of vehicle approved. The same Member State shall not assign the same number to another type of vehicle.

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4. SPECIFICATIONS

4.1. Definitions (see ► **M4** Annex II ◄)**▼M2**

- 4.1.1. H is a reference point as defined in Item 1.1 of Annex III to Directive 77/649/EEC which must be determined in accordance with the procedure set out in that Directive.
- 4.1.1.1. Point H' is the reference point corresponding to H as defined in Item 4.1.1 and shall be determined for all normal positions in which the seat is used.
- 4.1.1.2. Point R is the seat reference point defined in Item 1.2 of Annex III to Directive 77/649/EEC.
- 4.1.2. The reference line is a straight line as defined in Item 3.4 of Annex III to Directive 77/649/EEC.

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- 4.1.3. Points L_1 and L_2 are the lower effective belt anchorages.

▼M2

- 4.1.4. Point C is the point situated 450 mm vertically above point R. However, if the distance S defined in Item 4.1.6 is not less than 280 mm and if the alternative formula $BR = 280 \text{ mm} + 0.8 S$ specified in Item 4.4.4.3 is chosen by the manufacturer, the vertical distance between C and R shall be 500 mm.

▼B

- 4.1.5. The angles α_1 and α_2 are respectively the angles between a horizontal plane and planes perpendicular to the median longitudinal plane of the vehicle and passing through ► **M2** point H' ◄ and points L_1 and L_2 .
- 4.1.6. S is the distance in millimetres of the effective upper belt anchorage from a reference plane P parallel to the longitudinal median plane of the vehicle defined as follows:
- 4.1.6.1. if the seating position is well defined by the shape of the seat, the plane P shall be the median plane of this seat;
- 4.1.6.2. in the absence of a well-defined position:

▼M2

- 4.1.6.2.1. the plane P for the driver's seat is a vertical plane parallel to the median longitudinal plane of the vehicle which passes through the centre of the steering-wheel in the plane of the steering-wheel rim when the steering-wheel, if adjustable, is in its central position;

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- 4.1.6.2.2. the plane P for the front outboard passenger shall be symmetrical with that of the driver;
- 4.1.6.2.3. plane P for the rear outboard seating position shall be that specified by the manufacturer on condition that the following limits for distance A between the longitudinal median plane of the vehicle and plane P are respected:

$A \geq 200 \text{ mm}$ if the bench seat has been designed to accommodate two passengers only,

▼M2

$A \geq 300 \text{ mm}$, if the bench seat has been designed to accommodate more than two passengers.

▼B

4.2. General specifications

- 4.2.1. Anchorages for a safety belt shall be so designed, made and situated as to:
- 4.2.1.1. enable the installation of a suitable safety belt. The belt anchorages of the front outboard positions shall be suitable for safety belts incorporating a retractor and pulley, taking into consideration in particular the strength characteristics of the belt anchorages, unless the manufacturer supplies the vehicle equipped with other types of safety belts which ► **M3** incorporate retractors. This provision shall not apply to vehicles for which, according to item 4.3, lap belts only for front outboard seating positions are allowed. If anchorages ◄ are

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- suitable only for particular types of safety belts, their types shall be stated on the form mentioned in point 3.1 above;
- 4.2.1.2. reduce to a minimum the risk of the belt slipping when worn correctly;
- 4.2.1.3. reduce to a minimum the risk of strap damage due to contact with sharp rigid parts of the vehicle or seat structures.
- 4.2.2. For belt anchorages which take up different positions to allow persons to enter the vehicle and for restraining the occupants, the specifications of this Directive shall apply to the belt anchorages in the effective restraint position.

▼M3

- 4.3. **Minimum number of belt anchorages to be provided (see Appendix 1).**

▼M4

- 4.3.1. Any vehicle in categories M and N (except those vehicles in categories M₂ and M₃ which are designed for both urban use and standing passengers) must be equipped with safety belt anchorages which satisfy the requirements of this Directive.
- 4.3.2. The minimum number of safety belt anchorages for each forward and rearward directed seating position shall be as specified in Appendix 1.

▼M3

- 4.3.3. However, for outboard seating positions — other than front — of vehicles of the category M₁, shown in Appendix 1 and marked with the symbol Ø, two lower anchorages are allowed, where there exists a passage between a seat and the nearest side wall of the vehicle intended to permit access of passengers to other parts of the vehicle. A space between a seat and the side wall is considered as a passage, if the distance between that side wall, with all doors closed, and a vertical longitudinal plane passing through the centreline of the seat concerned — measured at the R-point position and perpendicularly to the median longitudinal plane of the vehicle — is more than 500 mm.
- 4.3.4. For the front centre seating positions shown in Appendix 1 and marked with the symbol *, two lower anchorages shall be considered adequate where the windscreen is located outside the reference zone defined in Annex II to Directive 74/60/EEC; if located inside this reference zone, three anchorages are required.


As regards belt anchorages, the windscreen is considered as part of the reference zone when it is capable of entering into static contact with the test apparatus according to the method described in Annex II to Directive 74/60/EEC.

- 4.3.5. For all seating positions shown in Appendix 1 and marked with the symbol #, each exposed seating position, as defined in item 4.3.6, must be equipped with two lower anchorages.
- 4.3.6. An 'exposed seating position' is one where there is no 'protective screen' in front of the seat within the following defined space:
- between two horizontal planes, one through the H-point and the other 400 mm above it,
 - between two vertical longitudinal planes which are symmetrical in relation to the H-point and are 400 mm apart,
 - behind a transverse vertical plane 1,30 m from the H-point.

For the purposes of this requirement 'protective screen' means a surface of suitable strength and showing no discontinuities such that, if a sphere of 165 mm diameter is geometrically projected in a longitudinal horizontal direction through any point of the space defined above and through the centre of the sphere, nowhere in the protective screen is there any aperture through which the geometrical projection of the sphere could be passed.

A seat is considered to be an 'exposed seating position', if the protective screens within the space defined above have a combined surface area of less than 800 cm².

▼ M4

- 4.3.7. Every seating position in Appendix I marked with the symbol , three anchorages shall be provided unless one of the following conditions is fulfilled:
- there is a seat or other parts of the vehicle conforming to Paragraph 3.5 of Appendix I of Annex III of Directive 74/408/EEC directly in front; or
 - no part of the vehicle is in or, when the vehicle is in motion, capable of being in the reference zone; or
 - parts of the vehicle within the said reference zone comply with the energy absorbing requirements set out in Appendix 6 of Annex III of Directive 74/408/EEC

in which case two anchorages may be provided.

▼ M3

- M4 4.3.8. ◀ ► M4 For the folding seats or seating intended solely for use when the vehicle is stationary, as well as all the seats ◀ of any vehicle which are not covered in items 4.3.1 to 4.3.5, ► M4 no belt anchorages are required. ◀ However, if the vehicle is fitted with anchorages for such seats, these anchorages must comply with the provisions of this Directive.

In this case, two lower anchorages shall be sufficient.

▼ M4

- 4.3.9. In the case of the upper deck of a double-deck vehicle the requirements for the centre front seating position shall apply also in the outboard front seating positions.
- 4.3.10. In the case of seats capable of being turned to or placed in other orientations, for use when the vehicle is stationary, the requirements of Item 4.3.1 shall only apply to those orientations designated for normal use when the vehicle is travelling on a road, in accordance with this Directive. A note to this effect shall be included in the information document.

▼ B**4.4. Location for belt anchorages**

- 4.4.1. The location of the belt anchorages as laid down in point 4.3 must comply with the following requirements.
- 4.4.2. *General*
- 4.4.2.1. The belt anchorages for any one belt may be located wholly in the vehicle structure, the seat structure or any other part of the vehicle or may be dispersed between these locations.
- 4.4.2.2. Any one belt anchorage may be used for attaching the ends of two adjacent safety belts provided that the test requirements are met.

▼ M2**▼ M3**

- 4.4.3. *Location of the effective lower belt anchorages (see Appendix 2)*
- 4.4.3.1. Front seats, vehicle-category M_1
- In motor vehicles of category M_1 the angle α_1 (other than buckle side) shall be within the range of 30 to 80° and the angle α_2 (buckle side) shall be within the range of 45 to 80° Both angle-requirements shall be valid for all normal travelling positions of the front seats. Where at least one of the angles α_1 and α_2 is constant in all normal positions of use, its value shall be $60 \pm 10^\circ$
- In case of adjustable seats with an adjusting device as described in item 1.12, with a seatback inclination angle of less than 20° (see Annex III, figure 1), the angle α_1 may be below the minimum value (30°) stipulated above, provided it is not less than 20° in any normal position of use.
- 4.4.3.2. Rear seats, vehicle category M_1
- In motor vehicles of category M_1 the angles α_1 and α_2 shall be within the range of 30 to 80° for all rear seats. If rear seats are adjustable the above angles shall be valid for all normal travelling positions.

▼ M34.4.3.3. Front seats, vehicle categories other than M₁

In motor vehicles of categories other than M₁ the angles α_1 and α_2 must be between 30 to 80° for all normal travelling positions of the front seats. Where in the case of front seats of vehicles with a maximum vehicle mass not exceeding 3,5 tonnes at least one of the angles α_1 and α_2 is constant in all normal positions of use, its value shall be $60 \pm 10^\circ$.

4.4.3.4. Rear seats and special front or rear seats, vehicle categories other than M₁

In vehicles of categories other than M₁, in the case of:

- bench seats,
- adjustable seats (front and rear) with an adjusting device as described in item 1.12 with a seatback angle of less than 20° (see Annex III, figure 1), and
- other rear seats,

angles α_1 and α_2 may be between 20 and 80° in any normal position of use. Where in the case of front seats of vehicles with a maximum vehicle mass not exceeding 3,5 tonnes at least one of the angles α_1 and α_2 is constant in all normal positions of use, its value shall be $60 \pm 10^\circ$.

▼ M4

In the case of seats, other than front seats, of vehicles in categories M₂ and M₃, the angles α_1 and α_2 shall be between 45 and 90 degrees for all normal positions of use.

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- **M3** 4.4.3.5. ◀ The distance between the two vertical planes parallel to the median longitudinal plane of the seat and each passing through a different one of two effective lower anchorages L₁ and L₂ of the same seat belt shall not be less than 350 mm.

The median longitudinal plane of the seat shall pass between points L₁ and L₂ and shall be at least 120 mm from those points.

4.4.4. *Location of the effective upper belt anchorage***▼ M2**

- 4.4.4.1. If a strap guide or similar device is used which affects the location of the effective upper belt anchorage, this location shall be determined in a conventional way by considering the position of the anchorage when the longitudinal centre line of the strap passes through a point J₁ defined successively from point R by the following three segments:

RZ, which is a segment of the reference line measured in an upward direction from R and 530 mm long,

ZX, which is a segment perpendicular to the median longitudinal plane of the vehicle, measured from point Z in the direction of the anchorage and 120 mm long,

XJ₁, which is a segment perpendicular to the plane defined by segments RZ and ZX, measured in a forward direction from point X and 60 mm long.

Point J₂ is determined by symmetry with point J₁ about the longitudinal vertical plane passing through the reference line described in Item 4.1.2 of the manikin positioned in the seat under consideration.

▼ M3

Where a two-door configuration is used to provide access to both the front and rear seats and the upper anchorage is fitted to the 'B' post, the system must be designed so as not to impede access to or egress from the vehicle.

▼ M2

- 4.4.4.2. The effective upper anchorage must lie below the plane FN, which runs perpendicular to the longitudinal median plane of the seat and makes an angle of 65° with the reference line. The angle can be reduced to 60° in the case of rear seats. The plane FN must be positioned as to intersect the reference line at a point D such that $DR = 315 \text{ mm} + 1.8 S$. However, when $S \leq 200 \text{ mm}$, DR becomes 675 mm.

- 4.4.4.3. The effective upper belt anchorage must lie behind a plane FK running perpendicular to the longitudinal median plane of the seat and intersecting the reference line at a point B at an angle of 120°

▼ M2

such that $BR = 260 \text{ mm} + S$. Where $S \geq 280 \text{ mm}$, the manufacturer may use $BR = 260 \text{ mm} + 0.8 S$ at his discretion.

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- 4.4.4.4. The value of S shall not be less than 140 mm.
- 4.4.4.5. The effective upper belt anchorage shall be situated to the rear of a vertical plane perpendicular to the median longitudinal plane of the vehicle and passing through the ► **M2** R ◀ point as shown in Annex III.

▼ M2

- 4.4.4.6. The effective upper belt anchorage must be situated above a horizontal plane passing through the point C defined in Item 4.1.4.
- 4.4.4.7. In addition to the upper anchorage specified in Item 4.3.1, other effective upper anchorages may be provided if one of the following conditions is satisfied:
- 4.4.4.7.1. The additional anchorages comply with the requirements laid down in Items 4.4.4.1 to 4.4.4.6.
- 4.4.4.7.2. The additional anchorages can be used without the aid of tools, comply with the requirements laid down in Items 4.4.4.5 and 4.4.4.6 and are located in one of the areas determined by shifting the area described in Annex III, Figure 1, 80 mm upwards or downwards in a vertical direction.
- 4.4.4.7.3. The anchorage(s) is/are intended for a harness belt, complies/comply with the requirements laid down in Item 4.4.4.6, lie(s) behind the transverse plane passing through the reference line and is/are located:
- 4.4.4.7.3.1. in the case of a single anchorage, inside the area common to two dihedral defined by the verticals passing through points J_1 and J_2 as defined in Item 4.4.4.1 and whose horizontal sections are defined by Figure 2 in Annex III;
- 4.4.4.7.3.2. in the case of two anchorages, inside whichever of the above defined dihedral is suitable, provided that each anchorage is not more than 50 mm distant from the symmetrically located, mirror-image position of the other anchorage about plane P, defined in Item 4.1.6, of the seat under consideration.

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- 4.5. **Dimensions of threaded belt anchorage holes**
- 4.5.1. A belt anchorage shall have a threaded hole of 11·11 mm (7/16) 20 UNF 2B.

▼ M2

- 4.5.2. If the vehicle is fitted by the manufacturer with safety belts which are attached to all anchorages prescribed for the seat in question, these anchorages need not meet the requirement stipulated in Item 4.5.1, provided that they comply with the other provisions of this Directive. Nor does the requirement set out in Item 4.5.1 apply to additional anchorages which meet the condition specified in Item 4.4.4.7.3.
- 4.5.3. It must be possible to separate the safety belt and anchorage without causing any damage to the latter.

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5. TESTING
- 5.1. **General**
- 5.1.1. Subject to application of the provisions of point 5.2 and at the request of the manufacturer:
- 5.1.1.1. the tests may be carried out on either a vehicle structure or a completely finished vehicle;

▼ M4

- 5.1.1.2. the tests may be restricted to the anchorages relating to only one seat or one group of seats on the conditions that:
- the anchorages concerned have the same structural characteristics as the anchorages relating to the other seats or groups of seats; and
 - where such anchorages are fitted totally or partially on the seat or group of seats, the structural characteristics of the seat or group of seats are the same as those for the other seats or groups of seats;

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- ▶ **M4** 5.1.1.3. ◀ windows and doors may or may not be fitted and/or closed;
- ▶ **M4** 5.1.1.4. ◀ any fitting provided in the vehicle type and likely to contribute to the rigidity of the vehicle structure may be fitted.

▼M2

- 5.1.2. The seats shall be fitted and shall be placed in the position for driving or use chosen by the technical service conducting approval tests to give the most adverse conditions with respect to the strength of the system. The position of the seats shall be stated in the report. The seat back shall, if its inclination is adjustable, be locked as specified by the manufacturer or, in the absence of any such specification, in a position corresponding to an effective seat-back angle as close as possible to 25° for vehicles of categories M₁ and N₁ and to 15° for vehicles of all other categories.

▼B**5.2. Securing of the vehicle**

- 5.2.1. The method used to secure the vehicle during the test shall not be such as to strengthen the belt anchorages or the belt anchorage areas or to lessen the normal deformation of the structure.
- 5.2.2. A securing device shall be regarded as satisfactory if it produces no effect on an area extending over the whole width of the structure and if the vehicle or the structure is blocked or fixed in front at a distance of not less than 500 mm from the belt anchorage to be tested and is held or fixed at the rear not less than 300 mm from that anchorage.
- 5.2.3. It is recommended that the structure should rest on supports arranged approximately in line with the axis of the wheels or, if that is not possible, in line with the points of attachment of the suspension.

▼M3

- 5.2.4. If a test method other than that prescribed in items 5.2.1 to 5.2.3 of this Directive is used, evidence must be furnished that it is equivalent.

▼B**5.3. General test specifications****▼M4**

- 5.3.1. All the belt anchorages of the same group of seats shall be tested simultaneously. However, if there is a risk that non-symmetrical loading of the seats and/or anchorages may lead to failures, an additional test may be carried out with non-symmetrical loading.
- 5.3.2. The tractive force shall be applied in a direction corresponding to the seating position at an angle of 10° ± 5° above the horizontal in a plane parallel to the median longitudinal plane of the vehicle.

▼B

- 5.3.3. Full application of the load shall be achieved as rapidly as possible. The belt anchorages must withstand the specified load for not less than 0.2 second.
- 5.3.4. Traction devices to be used in the tests described in point 5.4 below are shown in ▶ **M4** Annex III ◀.
- 5.3.5. The belt anchorages for seats for which upper belt anchorages are provided shall be tested under the following conditions:
 - 5.3.5.1. Front outboard seats:

The belt anchorages shall be submitted to the test prescribed in point 5.4.1 in which the loads are transmitted to them by means of a device reproducing the geometry of a three-point safety belt equipped with a retractor having a pulley or strap guide at the upper belt anchorage.

▼M2

In addition, where more anchorages exist than those prescribed in Item 4.3, these anchorages shall be subjected to the test specified in Item 5.4.5 in which the loads are transmitted to the anchorages by means of a device reproducing the geometry of the type of safety belt intended to be attached to these anchorages.

▼B

- 5.3.5.1.1. In the case where the retractor is not attached to the required outboard lower belt anchorage or in the case where the retractor is attached to the upper belt anchorage, the lower belt anchorages shall also be submitted to the test prescribed in point 5.4.3.

▼B

5.3.5.1.2. In the cases provided for in point 5.3.5.1.1, the tests prescribed in points 5.4.1 and 5.4.3 can be performed on two different structures if the manufacturer so requests.

5.3.5.2. Rear outboard seats and all centre seats:

The belt anchorages shall be subjected to the test prescribed in point 5.4.2, in which the loads are transmitted to them by means of a device reproducing the geometry of a three-point safety belt without a retractor, and to the test prescribed in point 5.4.3, in which the loads are transmitted to the two lower belt anchorages by means of a device reproducing the geometry of a lap belt. The two tests can be performed on two different structures if the manufacturer so requests.

▼M3

5.3.5.3. When a manufacturer supplies his vehicle with safety belts, the corresponding belt anchorages may, at the request of the manufacturer, be submitted only to a test in which the loads are transmitted to them by means of a device reproducing the geometry of the type of belts to be attached to these anchorages.

5.3.6. If no upper belt anchorages are provided for the outboard seats and the centre seats, the lower belt anchorages shall be submitted to the test prescribed in 5.4.3, in which the loads are transmitted to these anchorages by means of a device reproducing the geometry of a lap belt.

▼B

5.3.7. If the vehicle is designed to accept other devices which do not enable the straps to be directly attached to belt anchorages without intervening sheaves or other similar devices or which require belt anchorages supplementary to those mentioned in point 4.3, the safety belt or an arrangement of wires, sheaves or other similar devices representing the equipment of the safety belt, shall be attached by such a device to the belt anchorages in the vehicle and the belt anchorages shall be subjected to the tests prescribed in point 5.4, as appropriate.

5.3.8. A test method other than those prescribed in point 5.3 may be used but evidence must be furnished that it is equivalent.

5.4. Particular test specifications

5.4.1. *Test in configuration of a three-point belt incorporating a retractor having a pulley or strap guide at the upper belt anchorage*

5.4.1.1. A special pulley or guide for the wire or strap appropriate to transmit the load from the traction device, or the pulley or strap guide supplied by the manufacturer shall be fitted to the upper belt anchorage.

▼M3

5.4.1.2. For vehicles in categories M_1 and N_1 , a test load of $1\,350 \pm 20$ daN shall be applied by a traction device (see ►M4 Annex III ◄, figure 2) attached to the belt anchorages of the same belt by means of a device reproducing the geometry of the upper torso strap of such a safety belt.

For vehicles in categories M_2 and N_2 , the test load shall be 675 ± 20 daN.

For vehicles in categories M_3 and N_3 , the test load shall be 450 ± 20 daN.

5.4.1.3. For vehicles in categories M_1 and N_1 , at the same time a tractive force of $1\,350 \pm 20$ daN shall be applied to a traction device (see ►M4 Annex III ◄, figure 1) attached to the two lower belt anchorages.

For vehicles in categories M_2 and N_2 , this test load shall be 675 ± 20 daN.

For vehicles in categories M_3 and N_3 , this test load shall be 450 ± 20 daN.

▼B

5.4.2. *Test in configuration of a three-point belt without retractor or with a retractor at the upper belt anchorage*

▼M3

5.4.2.1. For vehicles in categories M_1 and N_1 , a test load of $1\,350 \pm 20$ daN shall be applied to a traction device (see ►M4 Annex III ◄, figure

▼ M3

2) attached to the belt upper anchorage and to the opposite lower belt anchorage of the same belt, using, if supplied by the manufacturer, a retractor fixed at the upper belt anchorage.

For vehicles in categories M_2 and N_2 , this test load shall be 675 ± 20 daN.

For vehicles in categories M_3 and N_3 , this test load shall be 450 ± 20 daN.

- 5.4.2.2. For vehicles in categories M_1 and N_1 , at the same time a tractive force of $1\,350 \pm 20$ daN shall be applied to a traction device (see ► **M4** Annex III ◀, figure 1) attached to the lower belt anchorages.

For vehicles in categories M_2 and N_2 , this test load shall be 675 ± 20 daN.

For vehicles in categories M_3 and N_3 , this test load shall be 450 ± 20 daN.

- 5.4.3. *Test in configuration of a lap belt.*

For vehicles in categories M_1 and N_1 , a test load of $2\,225 \pm 20$ daN shall be applied to a traction device (see ► **M4** Annex III ◀, figure 1) attached to the two lower belt anchorages.

For vehicles in categories M_2 and N_2 , this test load shall be $1\,110 \pm 20$ daN.

For vehicles in categories M_3 and N_3 , this test load shall be 740 ± 20 daN.

▼ B

- 5.4.4. *Test for belt anchorages located wholly within the seat structure or dispersed between the vehicle structure and the seat structure*

- 5.4.4.1. The tests specified in points 5.4.1, 5.4.2 and 5.4.3 shall be performed, as appropriate, at the same time superimposing for each seat and for each group of seats a force as stated below.

▼ M4

- 5.4.4.2. The loads indicated in Items 5.4.1, 5.4.2 and 5.4.3 shall be supplemented by a force equal to 20 times the weight of the complete seat.

In the case of vehicles in categories M_2 and N_2 this force must be equal to 10 times the weight of the complete seat; for vehicles in category M_3 and N_3 it must be equal to 6,6 times the weight of the complete seat.

▼ M2

- 5.4.5. *Test in configuration of a special-type belt*

- 5.4.5.1. A test load of $1\,350 \pm 20$ daN shall be applied to a traction device (see Annex IV, Figure 2) attached to the belt anchorages of such a safety belt by means of a device reproducing the geometry of the upper torso strap or straps.

▼ M3

- 5.4.5.2. For vehicles in categories M_1 and N_1 , at the same time, a tractive force of $1\,350 \pm 20$ daN shall be applied to a traction device (see ► **M4** Annex III ◀, figure 3) attached to the two lower belt anchorages.

For vehicles in categories M_2 and N_2 , this test load shall be 675 ± 20 daN.

For vehicles in categories M_3 and N_3 , this test load shall be 450 ± 20 daN.

▼ M4

- 5.4.6. *Test in the case of rearward-facing seat*

- 5.4.6.1. The anchorage points shall be tested according to the forces prescribed in Paragraphs 5.4.1, 5.4.2 or 5.4.3 as appropriate. In each case the test load shall correspond to the load prescribed for M_3 or N_3 vehicles.

- 5.4.6.2. The test load shall be directed forward in relation to the seating position in question, corresponding to the procedure prescribed in paragraph 5.3.

▼B5.5. **Results of tests**

- 5.5.1. All the anchorages shall be capable of withstanding the test prescribed in points 5.3 and 5.4. Permanent deformation, including partial rupture or breakage of any anchorage or surrounding area, shall not constitute failure if the required force is sustained for the specified time. During the test, the minimum spacings for the effective lower belt anchorages specified in point 4.4.3.3 and the requirements of points 4.4.4.6 and 4.4.4.7 for effective upper belt anchorages shall be respected.

▼M2

- 5.5.2. In vehicles where such devices are used, the displacement and locking devices enabling the occupants of all seats to leave the vehicle must still be operable by hand after removal of the tractive force.

▼B

- 5.5.3. After testing, any damage to the belt anchorages and structures supporting load during tests shall be noted.

▼M4

- 5.5.4. By way of derogation, the upper anchorages fitted to one or more seats of vehicles of category M_2 above 3,5 tonnes and M_3 , which meet the requirements of Annex III of Directive 74/408/EEC, need not comply with the requirements in paragraph 5.5.1 concerning compliance with Paragraph 4.4.4.6. Details of the seat(s) concerned shall be mentioned in the addendum to the Type-Approval certificate referred to in Appendix 4.

▼B

6. CONFORMITY OF PRODUCTION

▼M4

- 6.1. As a general rule, measures to ensure the conformity of production shall be taken in accordance with the provisions laid down in Article 10 of Directive 70/156/EEC.

▼B

- 6.2. As a general rule, these checks shall be confined to the taking of measurements. However, if necessary, the vehicles shall be subjected to tests conforming to the requirements of point 5.

▼M4

7. MODIFICATIONS OF THE TYPE AND AMENDMENTS TO APPROVALS

- 7.1. In the case of modifications of the type pursuant to this Directive, the provisions of Article 5 of Directive 70/156/EEC shall apply.

▼B**►M4 8. ◀ INSTRUCTIONS**

For every vehicle conforming to the approved type, the manufacturer shall state clearly in the instructions for operating the vehicle:

- where the belt anchorages are located,
- the types of safety belt for which they are intended.

▼ **M4***Appendix 1***MINIMUM NUMBER OF ANCHORAGE POINTS**

Vehicle category	Forward facing seating positions				Rear facing
	Outboard		Centre		
	Front	Other	Front	Other	
M_1	3	3 or 2 \emptyset	3 or 2 *	2	2
$M_2 \leq 3,5$ T	3	3	3	3	2
M_3 & $M_2 > 3,5$ T	3 \odot	3 or 2 $\#$	3 or 2 $\#$	3 or 2 $\#$	2
N_1, N_2 & N_3	3	2 or 0 #	3 or 2 *	2 or 0 #	—

Key to symbols:

- 2: two lower anchorages which allow the installation of a safety belt type B or, where required by Annex XV of Directive 77/541/EEC, type Br, Br3, Br4m or Br4Nm.
- 3: two lower anchorages and one upper anchorage which allow the installation of a three point safety belt type A or, where required by Annex XV of Directive 77/541/EEC, type Ar, Ar4m or Ar4Nm.
- \emptyset : refers to Item 4.3.3 (two anchorages permitted if a seat is inboard of a passageway).
- *: refers to Item 4.3.4 (two anchorages permitted if the windscreen is outside reference zone).
- #: refers to Items 4.3.5 and 4.3.6 (two anchorages required in exposed seating positions).
- $\#$: refers to Item 4.3.7 (two anchorages permitted if nothing is in reference zone).
- \odot : refers to Item 4.3.10 (special provision for the upper deck of a vehicle).

▼ **M4**

Appendix 2

LOCATION OF LOWER ANCHORAGES — ANGLE REQUIREMENTS ONLY

Seat		M ₁	Other than M ₁
Front #	buckle side (α_2)	45° — 80°	30° — 80°
	other than buckle side (α_1)	30° — 80°	30° — 80°
	angle constant	50° — 70°	50° — 70°
	bench — buckle side (α_2)	45° — 80°	20° — 80°
	bench — other than buckle side (α_1)	30° — 80°	20° — 80°
	adjustable seat with seat back angle < 20°	45° — 80° (α_2) * 20° — 80° (α_1) *	20° — 80°
Rear #		30° — 80°	20° — 80° Ψ
Folding	No belt anchorage required. If anchorage fitted: see angle requirements Front and Rear.		

Notes:

#: outboard and centre.

*: if angle is constant see Item 4.4.3.1.

 Ψ : 45° — 90° in the case of seats on M₂ and M₃ vehicles.

▼ **M4***Appendix 3*

Information document No ...

pursuant to Annex I of Council Directive 70/156/CEE⁽¹⁾ relating to EC type-approval of a vehicle with respect to safety belts anchorages (76/115/EEC) as last amended by Directive .../EEC

The following information, if applicable, must be supplied in triplicate and include a list of contents. Any drawings must be supplied in appropriate scale and in sufficient detail on size A4 or on a folder of A4 format. Photographs, if any, must show sufficient detail.

If the systems, components, or separate technical units have electronic controls, information concerning their performance must be supplied.

- 0. **General**
 - 0.1. Make (trade name of manufacturer):.....
 - 0.2. Type and general commercial description(s):
 - 0.3. Means of identification of type, if marked on the vehicle^(*):
 - 0.3.1. Location of that marking:.....
 - 0.4. Category of vehicle^(*):
 - 0.5. Name and address of manufacturer:
 - 0.8. Address(es) of assembly plant(s):.....
- 1. **General construction characteristics of the vehicle**
 - 1.1. Photographs and/or drawings of a representative vehicle:.....
- 9. **Bodywork**
 - 9.10.3. Seats
 - 9.10.3.1. Number:
 - 9.10.3.2. Position and arrangement:
 - 9.10.3.2.1. Seating positions designated for use only when the vehicle is stationary:.....
 - 9.10.3.3. Mass:
 - 9.10.3.4. Characteristics: Descriptions and drawings of:
 - 9.10.3.4.1. the seats and their anchorages:.....
 - 9.10.3.4.2. the adjustment system
 - 9.10.3.4.3. the displacement and locking systems
 - 9.10.3.4.4. the seat belt anchorages if incorporated in the seat structure
 - 9.10.3.6. Design torso angle of:
 - 9.10.3.6.1. driver's seat
 - 9.10.3.6.2. all other seating positions
 - 9.10.3.7. Range of seat adjustment of:
 - 9.10.3.7.1. driver's seat
 - 9.10.3.7.2. all other seating positions

⁽¹⁾ The item numbers and footnotes used in this Information Document correspond to those set out in Annex I to Directive 70/156/EEC. Items not relevant for the purpose of this Directive are omitted.

▼ **M4**

- 9.13. Safety belt anchorages
- 9.13.1. Photographs and/or drawings of the bodywork showing the position and dimensions of the actual and the effective anchorages including the R-points:
- 9.13.2. Drawings of the belt anchorages and parts of the vehicle structure where they are attached (with the material indication):
- 9.13.3. Designation of the types ⁽¹⁾ of safety belts authorized for fitting to the anchorages with which the vehicle is equipped:

Row	Seat	Anchorage position	Anchorage location	
			Vehicle structure	Seat structure
First row of seats	Right-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Centre seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Left-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
Second row of seats #	Right-hand seat	Lower outboard anchorage		
		Lower outboard anchorage		
		Upper anchorage(s)		
	Centre seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Left-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		

The table may be extended as necessary where vehicles have more than two rows of seats or if there are more than 3 seats across the width of a vehicle.

- 9.13.4. Description of a particular type of safety belt where an anchorage is located in the seat backrest or incorporates an energy-dissipating device:

Date, file

⁽¹⁾ For the symbols and marks to be used, see Annex III, Items 1.1.3 and 1.1.4 of Directive 77/541/EEC. In the case of "S" type belts, specify the nature of the type(s).

▼ M4

Appendix 4

MODEL

(maximum format: A4 (210 × 297 mm))

EEC TYPE-APPROVAL CERTIFICATE

Stamp of administration

Communication concerning the:

- type-approval ⁽¹⁾,
- extension of type-approval ⁽¹⁾,
- refusal of type-approval ⁽¹⁾,
- withdrawal of type-approval ⁽¹⁾,

of a type of vehicle/component/separate technical unit ⁽¹⁾ with regard to Directive 76/115/EEC, as last amended by Directive .../.../EC.

Type-approval number:

Reason for extension:

SECTION I

- 0.1. Make (trade name of manufacturer):
- 0.2. Type and general commercial description(s):
- 0.3. Means of identification of type, if marked on the vehicle/component/separate technical unit ⁽¹⁾ ⁽²⁾:
- 0.3.1. Location of that marking:
- 0.4. Category of vehicle ⁽³⁾:
- 0.5. Name and address of manufacturer:
- 0.7. In the case of components and separate technical units, location and method of affixing of the EEC type-approval mark:
- 0.8. Address(es) of assembly plant(s):

SECTION II

1. Additional information (where applicable) (see addendum):
2. Technical service responsible for carrying out the tests:
3. Date of test report:
4. Number of test report:
5. Remarks (if any) (see addendum):
6. Place:
7. Date:
8. Signature:
9. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

⁽¹⁾ Delete where not applicable.⁽²⁾ If the means of identification of type contains characters not relevant to a description of the vehicle, component or separate technical unit types covered by this type-approval certificate, such characters shall be represented in the documentation by the symbol "?" (e.g. ABC??123??).⁽³⁾ As defined in Annex II A to Directive 70/156/EEC.

▼M4

Addendum to EEC type-approval certificate No

concerning the type-approval of a vehicle with regard to Directive 76/115/EEC as last amended by Directive
.../.../EEC

1. Additional Information
 - 1.1. Category of vehicle:
 - 1.2. Location of anchorages and safety belts provided (1):

Row	Seat	Anchorage position	Anchorage location	
			Vehicle structure	Seat structure
First row of seats	Righthand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Centre seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Left-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
Second row of seats #	Right-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Centre seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		
	Left-hand seat	Lower outboard anchorage		
		Lower inboard anchorage		
		Upper anchorage(s)		

The table may be extended as necessary where vehicles have more than two rows of seats or if there are more than 3 seats across the width of a vehicle.

5. Remarks:

(1) For the symbols and marks to be used, see Annex III, Items 1.1.3 and 1.1.4 of Directive 77/541/EEC. In the case of "S" type belts, specify the nature of the type(s).

▼ **M4**

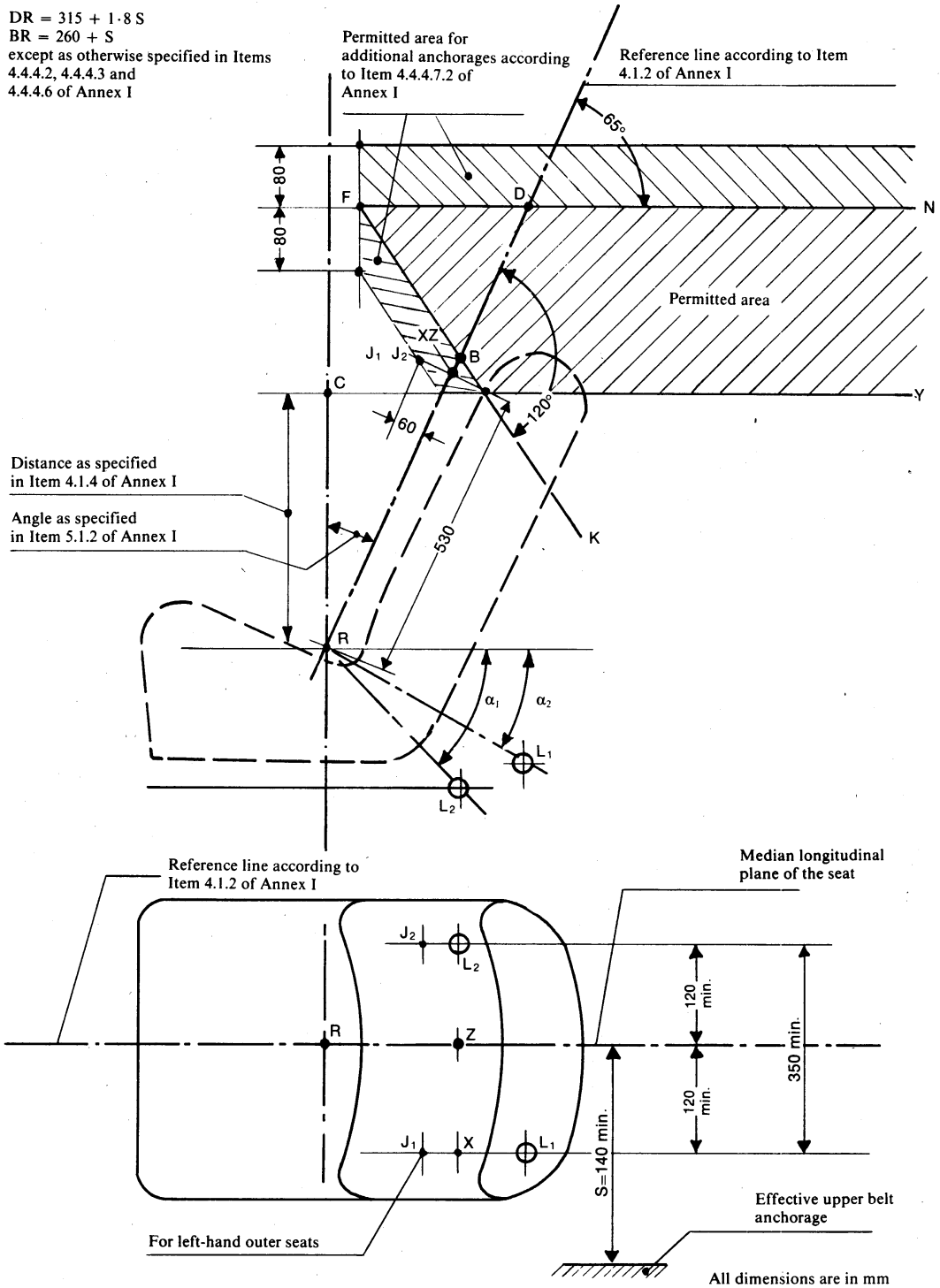
ANNEX II

LOCATION OF EFFECTIVE BELT ANCHORAGES

▼ **M2**

Figure 1

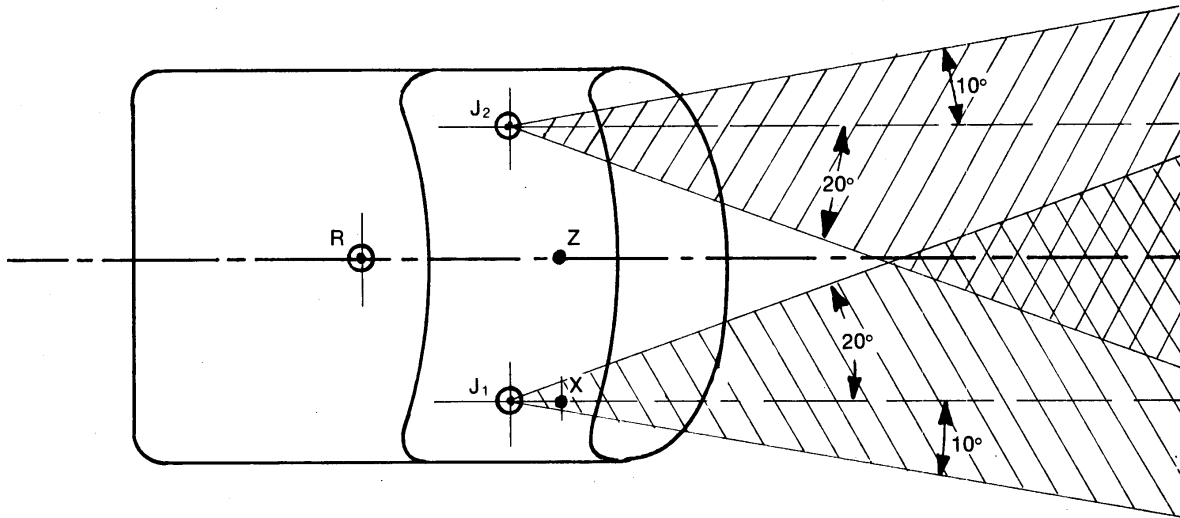
Areas of location of effective belt anchorages



▼ M2

Figure 2

Effective upper anchorages in accordance with Item 4.4.4.7.3 of Annex I



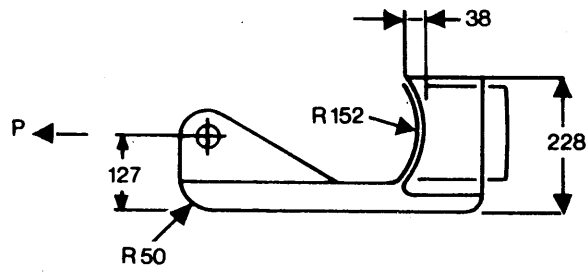
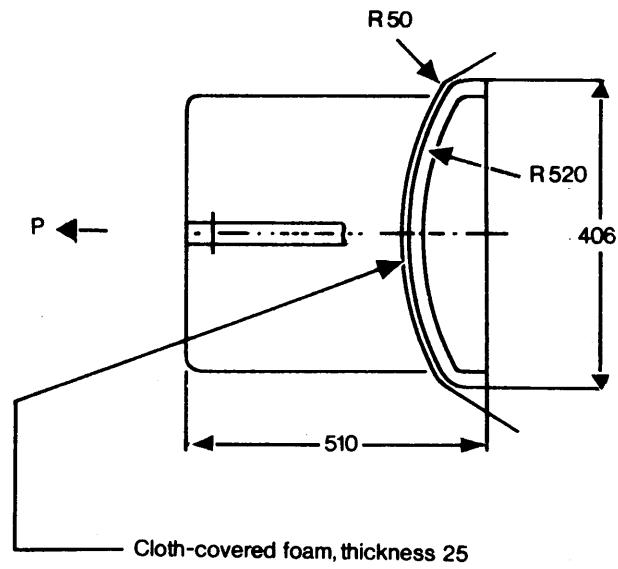
▼ M4

ANNEX III

▼ B

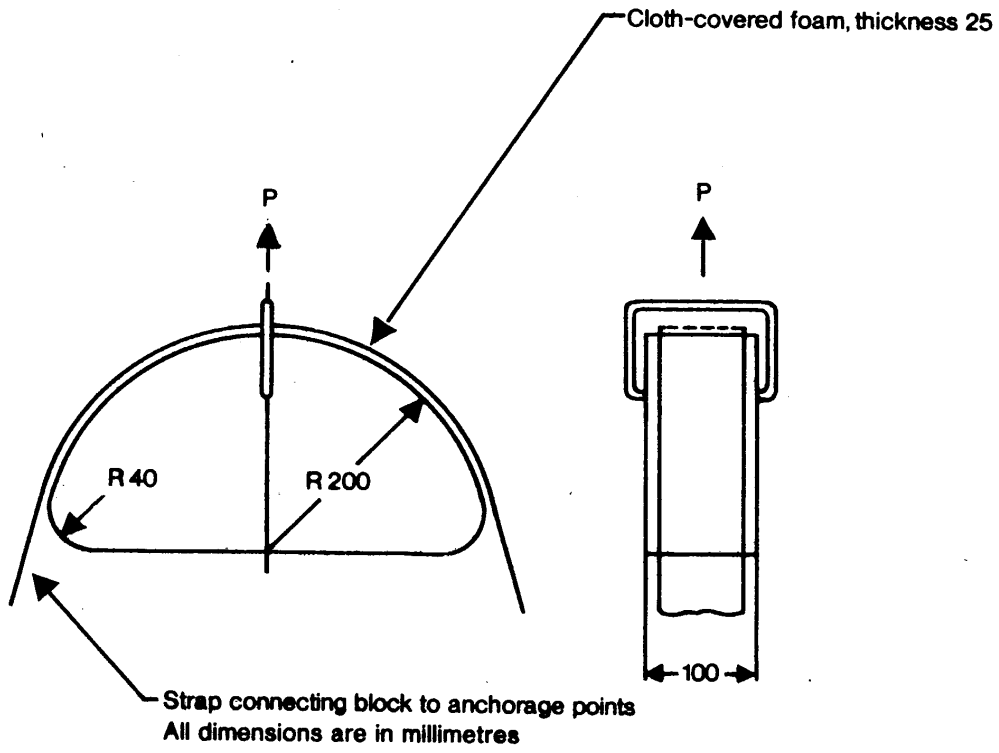
TRACTION DEVICE

Figure 1



▼B

Figure 2



▼ M2

Figure 3

