

Child use and care articles — Reclined cradles

ICS 97.190

National foreword

This British Standard is the UK implementation of EN 12790. It supersedes BS EN 12790:2002 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CW/41, Child use and care articles.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN 12790:2009) has been prepared by Technical Committee CEN/TC 252 “Child use and care articles”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12790:2002.

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1 Scope

This standard specifies safety requirements and the corresponding test methods for fixed or folding reclined cradles intended for children up to a weight of 9 kg or who are unable to sit up unaided.

This standard applies also to car seats complying with ECE 44 that can be used as reclined cradles according to manufacturer's instructions.

This standard does not apply to reclined cradles when used as swings.

If a reclined cradle has several functions or can be converted into another function the relevant European standards apply to it (see Annex B).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-1, *Safety of toys – Part 1: Mechanical and physical properties*

EN 71-3, *Safety of toys – Part 3: Migration of certain elements*

EN 1103, *Textiles – Fabrics for apparel – Detailed procedure to determine the burning behaviour*

EN ISO 868, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

ISO 48, *Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 7619-1, *Rubber, vulcanized or thermoplastic – Determination of indentation hardness – Part 1: Durometer method (Shore hardness)*

ISO 7619-2, *Rubber, vulcanized or thermoplastic – Determination of indentation hardness – Part 2: IRHD pocket meter method*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

3.1

reclined cradle

article intended to accommodate a child in a reclined position

NOTE Reclined cradles may be static, rocking or bouncing and may have an adjustable backrest and/or seat.

3.1.1

static reclined cradle

article not intended to bounce or rock

3.1.2

rocking reclined cradle

article intended to allow the child to rock

3.1.3

bouncing reclined cradle

article intended to allow the child to bounce due to the flexibility of the frame or any other mechanical means

3.2

restraint system

system to restrain the child within the reclined cradle

3.3

crotch restraint

device designed to pass between the child's legs to prevent the child from sliding forward

3.4

carrying handle

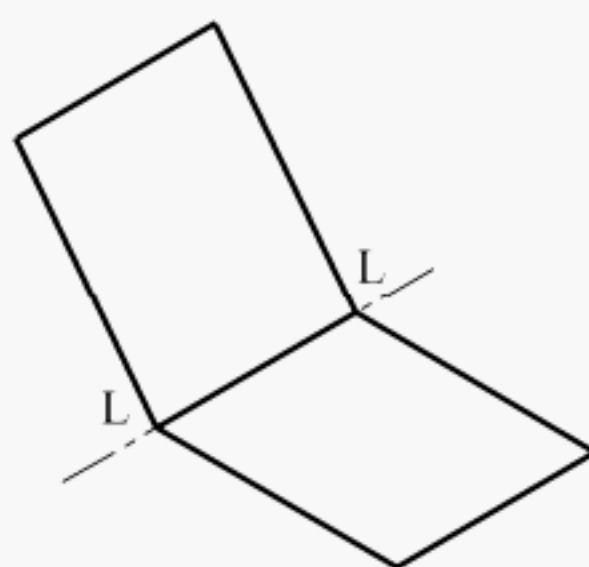
component to enable the reclined cradle with the child in it to be carried by hand

3.5

junction line

intersection of the seat and the backrest

NOTE 1 See Figure 1a).

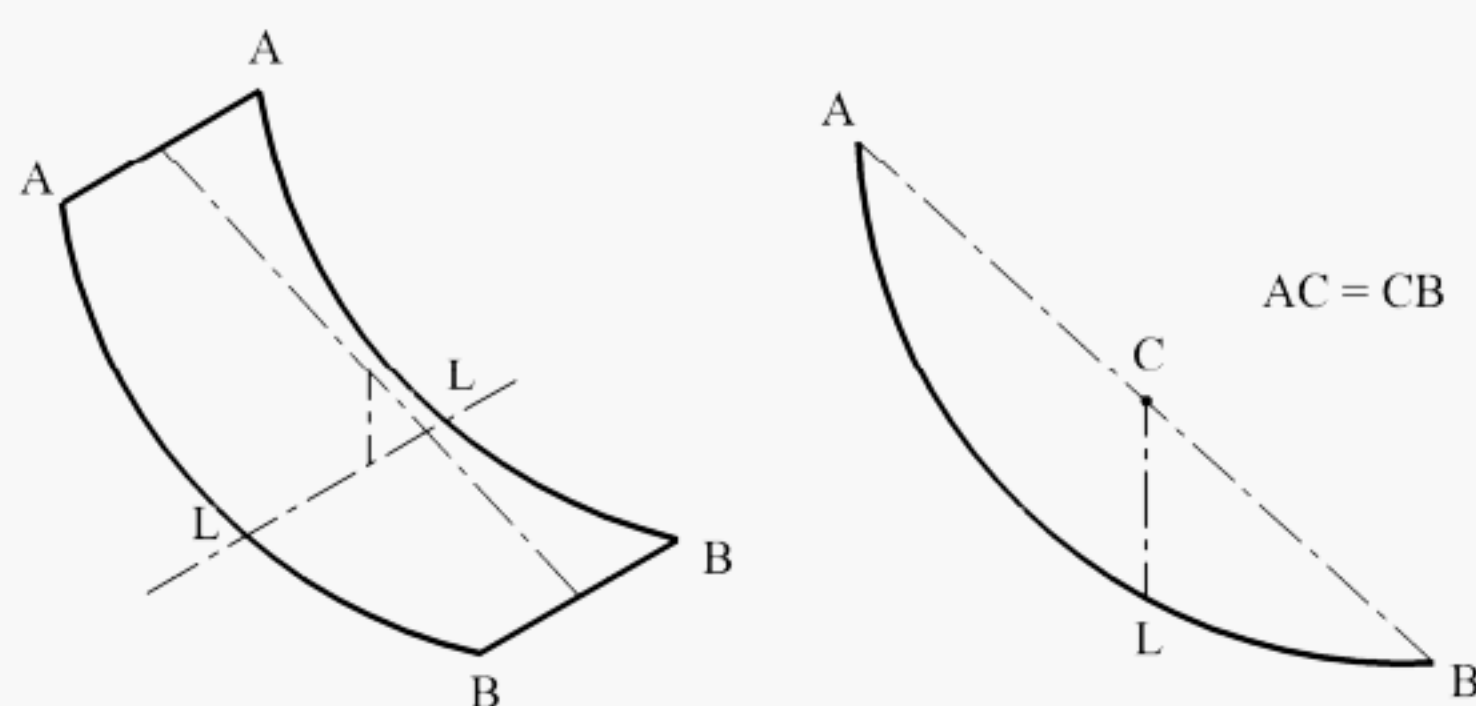


Key

LL Junction line

Figure 1a) — Junction line

NOTE 2 When the seat unit is in the form of a hammock, then a theoretical junction line, "LL", is determined as shown in Figure 1b). For these products the junction line will vary when the backrest is adjusted in different positions.



Key

LL Junction line

CL Vertical projection of C on the hammock

Figure 1b) — Junction line for reclined cradles in form of a hammock

4 Properties of materials

4.1 Chemical properties

Surfaces of parts located within the inner and upper surface that support the child shall be made using materials which in their soluble state have a metal content not exceeding the following values:

- Antimony: 60 mg/kg;
- Arsenic: 25 mg/kg;
- Barium: 1 000 mg/kg;
- Cadmium: 75 mg/kg;
- Chromium: 60 mg/kg;
- Lead: 90 mg/kg;
- Mercury: 60 mg/kg;
- Selenium: 500 mg/kg.

The test procedure is defined in EN 71-3.

Where a surface is coated with a multi-layer of paint or similar coating, the test sample shall not include any of the base material.

4.2 Flammability

There shall be no parts of the reclined cradle which can give rise to surface flash, when tested in accordance with EN 1103.

5 Construction

5.1 Shrinkage

After cleaning and drying twice in accordance with the manufacturer's instructions, any resulting shrinkage in the fabric covering materials shall not prevent removable fabrics from being refitted.

5.2 Finger entrapment

When tested in accordance with 6.3 there shall be no holes, openings or gaps greater than 7 mm and less than 12 mm unless the depth of penetration of the appropriate probe is less than 10 mm on the inner and upper surface which supports the child.

The test shall be carried out with the product in any intended position of use.

Restraint systems are excluded from this requirement.

5.3 Moving parts

To avoid the risk of shearing and crushing once the reclined cradle is assembled for normal use the distance between two parts which move relative to each other shall be less than 5 mm or more than 12 mm throughout the entire movement.

Moving parts can arise from:

- a) the movement of the reclined cradle;
- b) the movement of the body weight or action of the child using the reclined cradle;
- c) a powered mechanism.

Locking mechanisms and the base of the article and its functional parts for rocking and bouncing are excluded from this requirement.

5.4 Edges, points and corners

All accessible edges, corners and protruding parts on the reclined cradles inner and upper surface which supports the child shall be rounded or chamfered and free from burrs.

All surfaces shall be free from burrs and sharp edges.

5.5 Small parts

When tested in accordance with 6.4, any part that can be detached shall not fit wholly within the small parts cylinder.

Parts intended to be removed shall not fit wholly within the small parts cylinder.

5.6 Cords, ribbons and parts used as ties

Cords, ribbons and parts used as ties excluding restraint system shall have a maximum free length of 220 mm when stretched by a force of 25 N.

5.7 Springs

If the reclined cradle is fitted with springs, a protection is required when the space between two helical coils can become equal to or greater than 3 mm and smaller than 12 mm, when tested in accordance with 6.5.

5.8 Locking mechanism(s) for folding system

5.8.1 General

Reclined cradles which may be folded for storage or transportation purposes shall be fitted with locking mechanism(s) for the folding system.

Locking mechanism(s) is required to prevent a reclined cradle folding whilst the child is in the cradle and also during the process of a child being put in and taken out of the cradle.

5.8.2 Incomplete deployment

To avoid the hazard due to incomplete deployment, at least one locking mechanism shall engage automatically when the product is deployed for use in accordance with the manufacturer's instructions for use.

When tested in accordance with 6.6.1 the reclined cradle, with the non automatic locking mechanism(s) not fully engaged, shall not collapse or tip over.

5.8.3 Unintentional release of locking mechanism(s)

To avoid the hazards due to unintentional release, one of the following conditions shall be fulfilled:

- a) at least one locking mechanism requires an operating force greater than 50 N before and after testing in accordance with 6.6.3, or
- b) at least one locking mechanism is released by the use of a tool, or
- c) folding requires at least two consecutive actions, the first of which must be maintained while the second is carried out, or
- d) folding requires at least two independent and simultaneous actions.

When tested in accordance with 6.6.2, the reclined cradle shall not collapse.

5.9 Reclining system

Any adjustment mechanism(s) for the reclining system shall not be positioned on the inner and upper surface which supports the child.

Reclined cradles with adjustable backrest or seat angle shall be fitted with a stop at the maximum reclined position to avoid inadvertent contact between the seat unit and the ground or any rigid part of the frame during testing in accordance with 6.7.

The reclining system shall still function after testing in accordance with 6.7.

During testing in accordance with 6.7, angles and distance H of the reclined cradle shall still satisfy the requirements of 5.10.

5.10 Angle and height of seat unit

Cradles, when tested in accordance with 6.8, shall comply with the following:

- the α angle shall not be less than 90° in any position of use;
- the β angle shall be between 10° and 80°;
- the distance H shall always be greater than 15 mm.

The requirements for the angles shall be applied to the cradle in all its possible positions of use.

The requirement for distance H is not applicable to car seats complying with ECE 44 and to rigid or "shell shaped" seats.

NOTE The requirement for H distance is intended to avoid the seat unit touching the floor.

5.11 Locking mechanism(s) for carrying handle(s)

5.11.1 General

The requirements of this clause do not apply to reclined cradles with flexible (e.g. fabric, etc.) carrying handles.

5.11.2 Locking mechanism(s)

Carrying handle(s) shall have one or more locking mechanisms which locks the handle(s) in the carrying position.

The locking mechanism(s) shall fulfill one of the following conditions:

- a) to release the locking mechanism, at least two consecutive actions are required, the second depending on the first being performed and maintained; or
- b) to release the locking mechanism, at least two separate and simultaneous actions shall be performed on two separate parts; or
- c) when tested in accordance with 6.9, in both directions, the reclined cradle shall return to its initial locked position.

5.11.3 Incomplete deployment of the carrying handle(s)

To avoid incomplete deployment of the handle(s) one of the following requirements shall be fulfilled:

- a) the carrying handle(s) is fitted with an automatic system that returns it to and locks it into its carrying position; or
- b) when tested in accordance with 6.10, with the handle in both directions, the reclined cradle shall not tip over; or
- c) when it is not locked in the carrying position, the carrying handle shall move to its lowest position under its own weight.

5.12 Stability

When tested in accordance with 6.11, the reclined cradle shall not tip over.

5.13 Static strength

After testing in accordance with 6.12, the reclined cradle shall still fulfil its intended functions.

5.14 Durability of reclined cradles with carrying handle(s)

The requirements of this clause apply to all reclined cradles with carrying handle(s).

After testing in accordance with 6.13 the reclined cradle shall not show any signs of damage and shall still fulfil its intended functions.

5.15 Strength of carrying handle(s) locking mechanism(s)

The requirements of this clause do not apply to reclined cradles with flexible (e.g. fabric, etc.) carrying handle(s).

After testing in accordance with 6.14 the carrying handle(s) shall not show any signs of damage and shall still fulfil their intended functions.

5.16 Slippage of the reclined cradle

When tested in accordance with 6.15 the reclined cradle shall not move more than 20 mm down the inclined plane.

5.17 Restraint system

5.17.1 General

The reclined cradle shall be fitted with a restraint system, adjustable to the size of the child and comprising at least a waist belt and a crotch restraint. The width of the straps shall be at least 19 mm.

The requirements of this clause do not apply to reclined cradles complying with ECE 44.

5.17.2 Strength of the restraint system

When tested in accordance with 6.16, the restraint system, straps, anchoring points and fastening system shall not break, become loose or tear away from their support.

5.17.3 Slippage of the restraint system

When tested in accordance with 6.17 any adjusters, sliders, buckles or clasps shall not slip by more than 20 mm.

5.18 Marking

When tested in accordance with 6.18, any marking shall remain legible.

6 Test methods

6.1 General

If not otherwise stated, the test methods shall be applied to a reclined cradle assembled and erected in accordance with the manufacturer's instructions.

If not otherwise stated the reclined cradle shall be tested in the most onerous configuration.

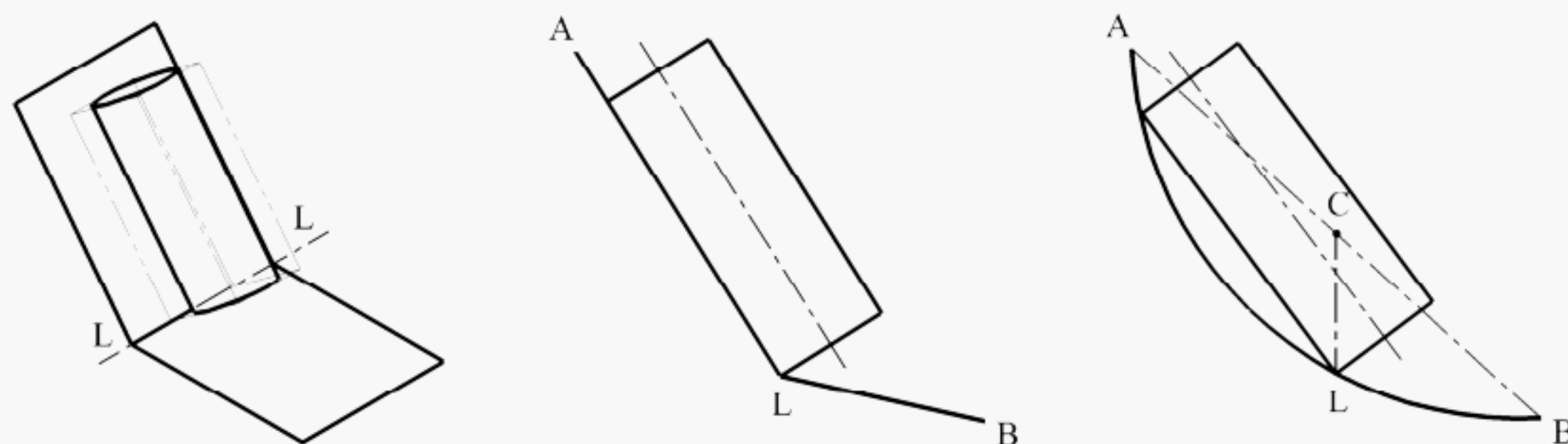
Car seats complying with ECE 44 that can be used as reclined cradles shall be tested as reclined cradles intended for children up to 9 kg.

The tests shall be carried out in the order of Clause 5.

If not otherwise stated the tolerances on test equipment shall comply with the following:

- forces: $\pm 5\%$,
- masses: $\pm 0,5\%$,
- dimensions: $\pm 0,5\text{ mm}$,
- angles: $\pm 0,5^\circ$.

Where the test mass A or test mass B is used, it shall be positioned in the reclined cradle as shown in Figure 2 and retained by the restraint system.



Key

LL Junction line

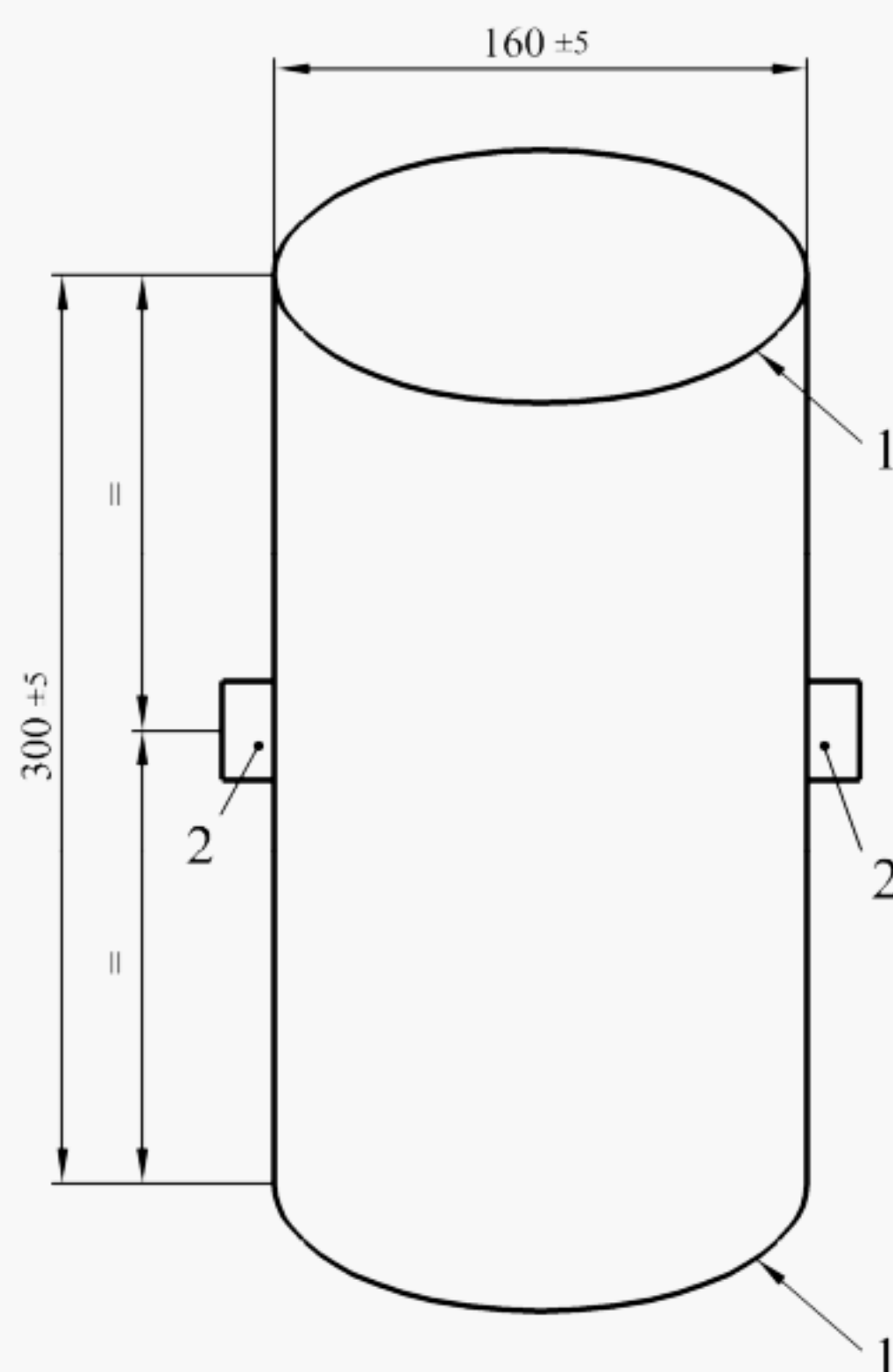
Figure 2 — Positioning of the test mass

6.2 Test equipment

6.2.1 Test mass A

Test mass A is a rigid cylinder (160 ± 5) mm in diameter and (300 ± 5) mm in height, having a mass of $(9^{+0,01}_0)$ kg and with its centre of gravity in the centre of the cylinder. All edges shall have a radius of (5 ± 1) mm. Two anchorage points shall be provided. These shall be positioned $(150 \pm 2,5)$ mm from the base and at 180° to each other around the circumference (see Figure 3).

Dimensions in millimetres



Key

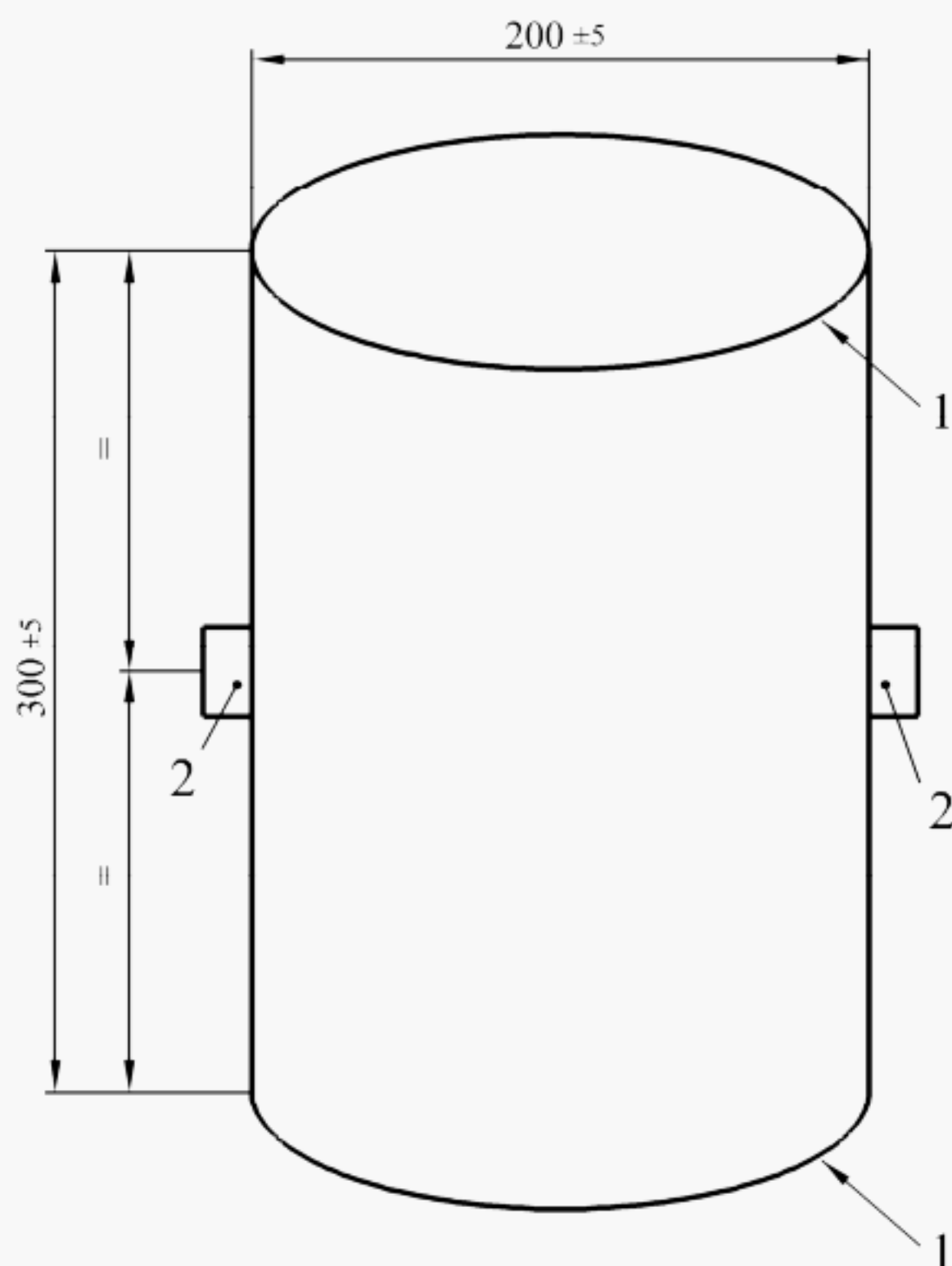
- 1 Radius: (5 ± 1) mm
- 2 Two anchorage points

Figure 3 — Test mass A

6.2.2 Test mass B

Test mass B is a rigid cylinder (200 ± 5) mm in diameter and (300 ± 5) mm in height, having a mass of $(15^{+0,01}_0)$ kg and with its centre of gravity in the centre of the cylinder. All edges shall have a radius of (5 ± 1) mm. Two anchorage points shall be provided. These shall be positioned $(150 \pm 2,5)$ mm from the base and at 180° to each other around the circumference (see Figure 4).

Dimensions in millimetres



Key

- 1 Radius: (5 ± 1) mm
- 2 Two anchorage points

Figure 4 — Test mass B

6.2.3 Small parts cylinder

Small parts cylinder for the assessment of small components, having dimensions in accordance with Figure 5.

Dimension in millimetres

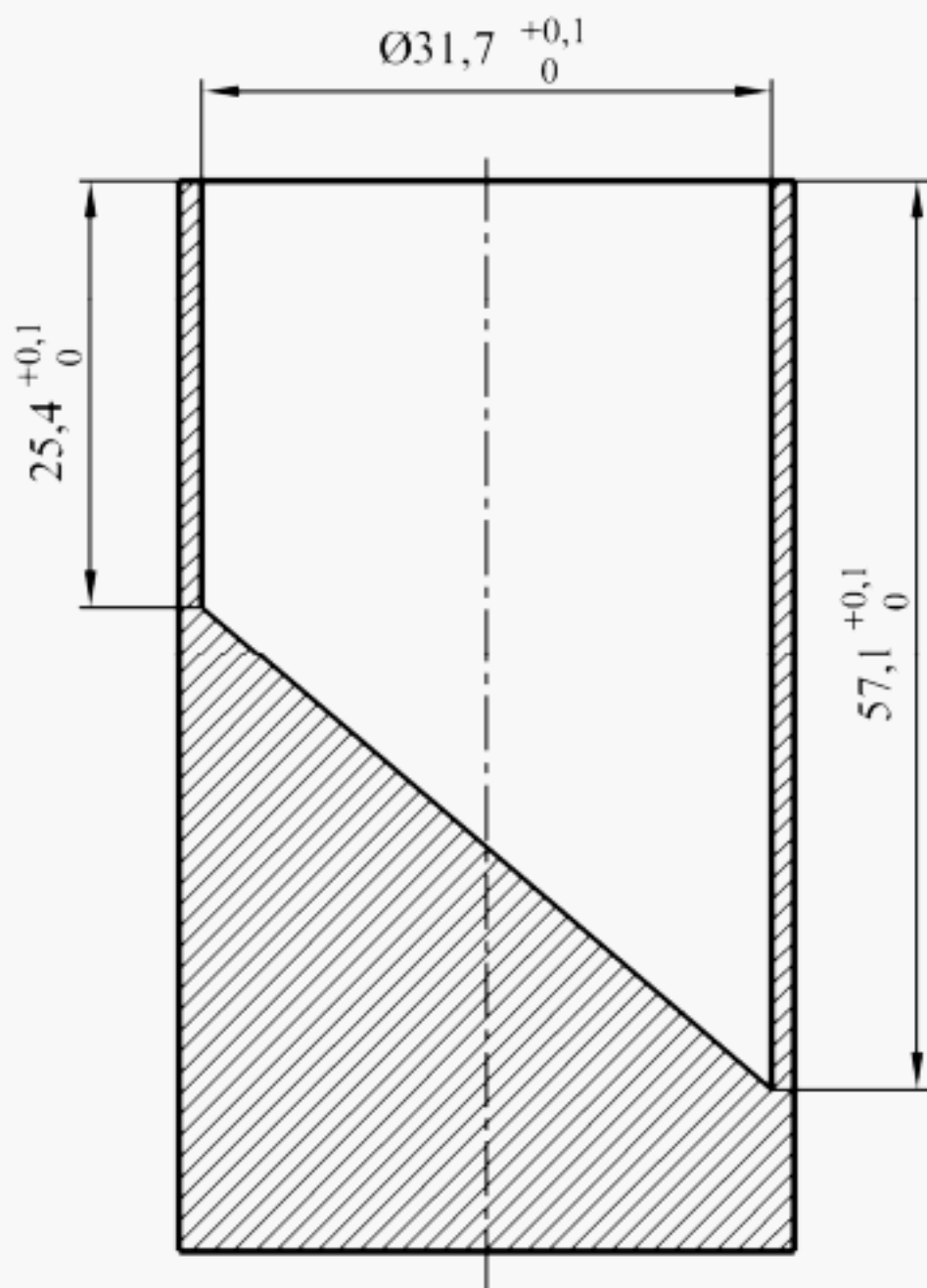


Figure 5 — Small parts cylinder

6.2.4 Feeler gauge

Dimensions in millimetres

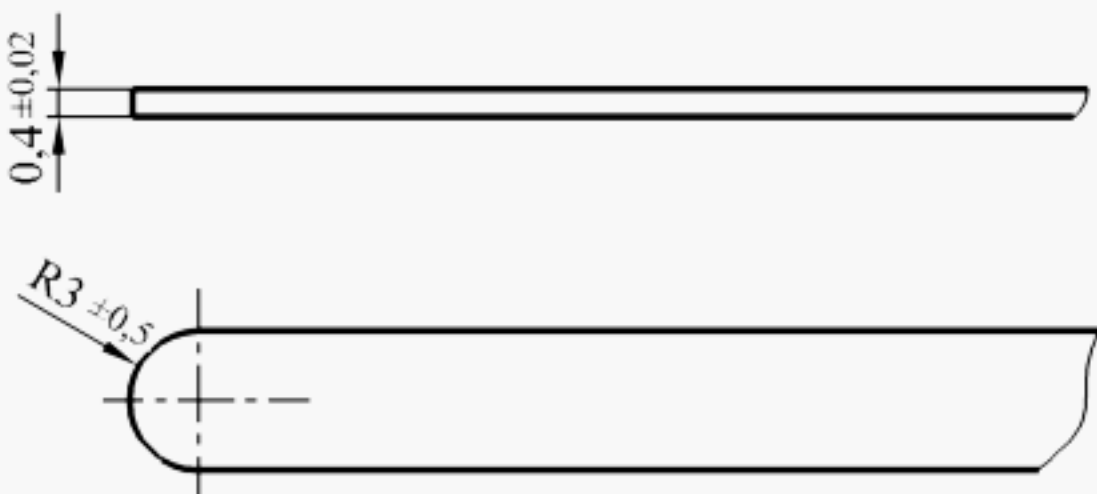


Figure 6 — Feeler gauge

6.2.5 Test equipment for handle strength test

Hooks rigidly connected to a metal plate (see Figure 7).

Straps: straps are needed only when the carrying handle of the reclined cradle does not fit into the hooks. Straps shall be used to fix the carrying handles to the hooks.

Dimensions in millimetres

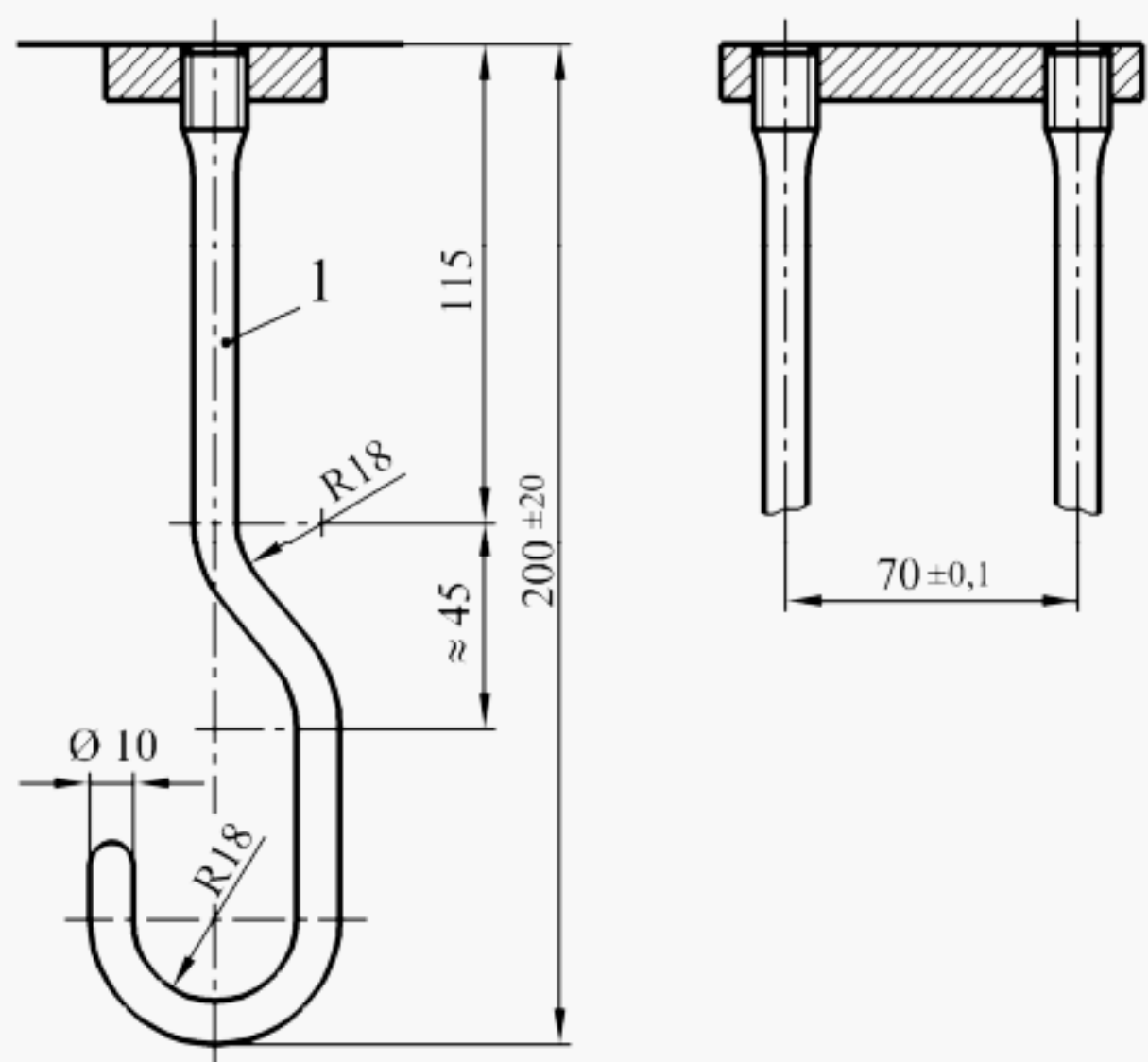
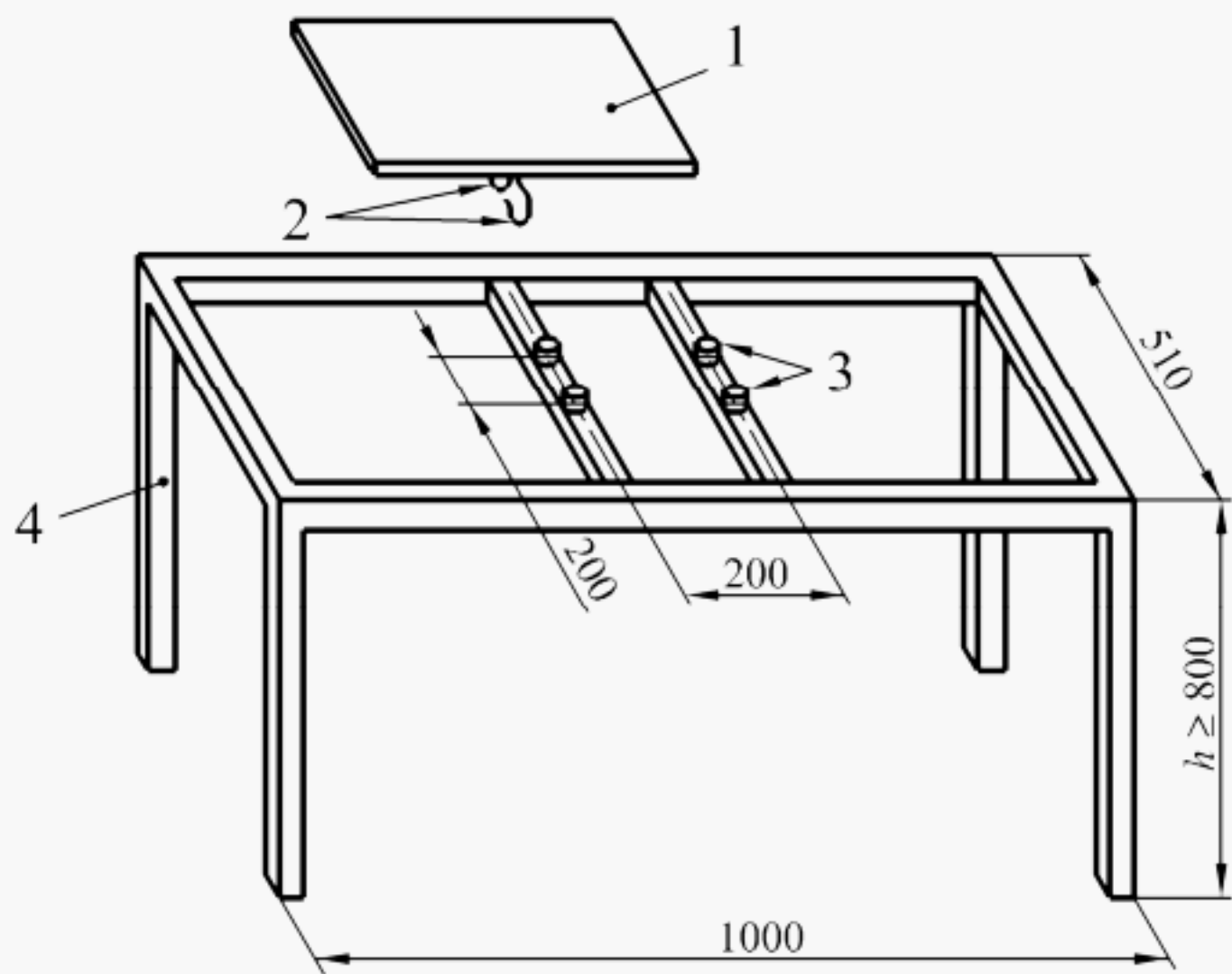


Figure 7 — Metal hooks

Four stops of 15 mm high, 30 mm diameter and of hardness (70 ± 5) IRHD (in accordance with ISO 48) roughly equivalent to 70 shore A hardness which are screwed on the rigid frame.

Dimensions in millimetres



Key

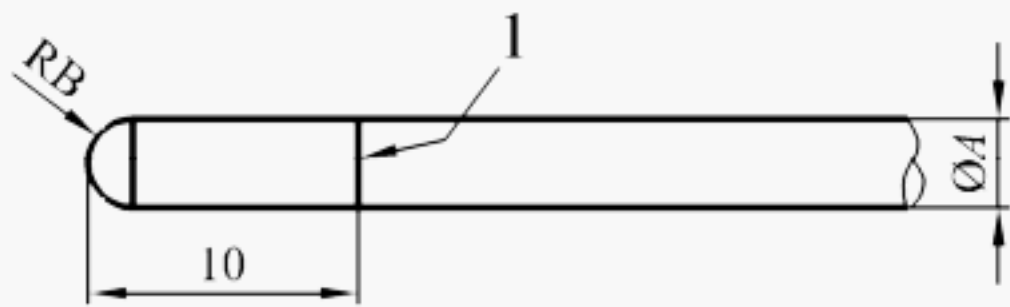
- 1 Metal plate: $[(300 \pm 5) \times (300 \pm 5)]$ mm and thickness 6 mm
- 2 Metal hooks (see Figure 7) rigidly fixed to the metal plate
- 3 Stops
- 4 Frame made of steel square tube: $[(30 \pm 5) \times (30 \pm 5)]$ mm and thickness 1,5 mm

Figure 8 — Apparatus for dynamic strength test

6.2.6 Test probes for finger entrapment

Probes made from plastics or other hard, smooth material of diameters 7 mm and 12 mm with a full hemispherical end that can be mounted on a force-measuring device, see Figure 9.

Dimensions in millimetres



Key (dimensions in millimetres)

Probe type	7 mm probe	12 mm probe
Diameter A	$7_{-0}^{-0,1}$	$12_{+0,1}^0$
Radius RB	3,5	6

1 Line scribed around circumference showing depth of penetration

Figure 9 — Test probes

6.2.7 Test equipment for handle locking mechanism strength test

Rotation point: L section made of steel or similar material with dimensions of 30 mm x 30 mm x 3 mm and a length of 200 mm, fixed on the vertical surface as in Figure 10 and adjustable in height.

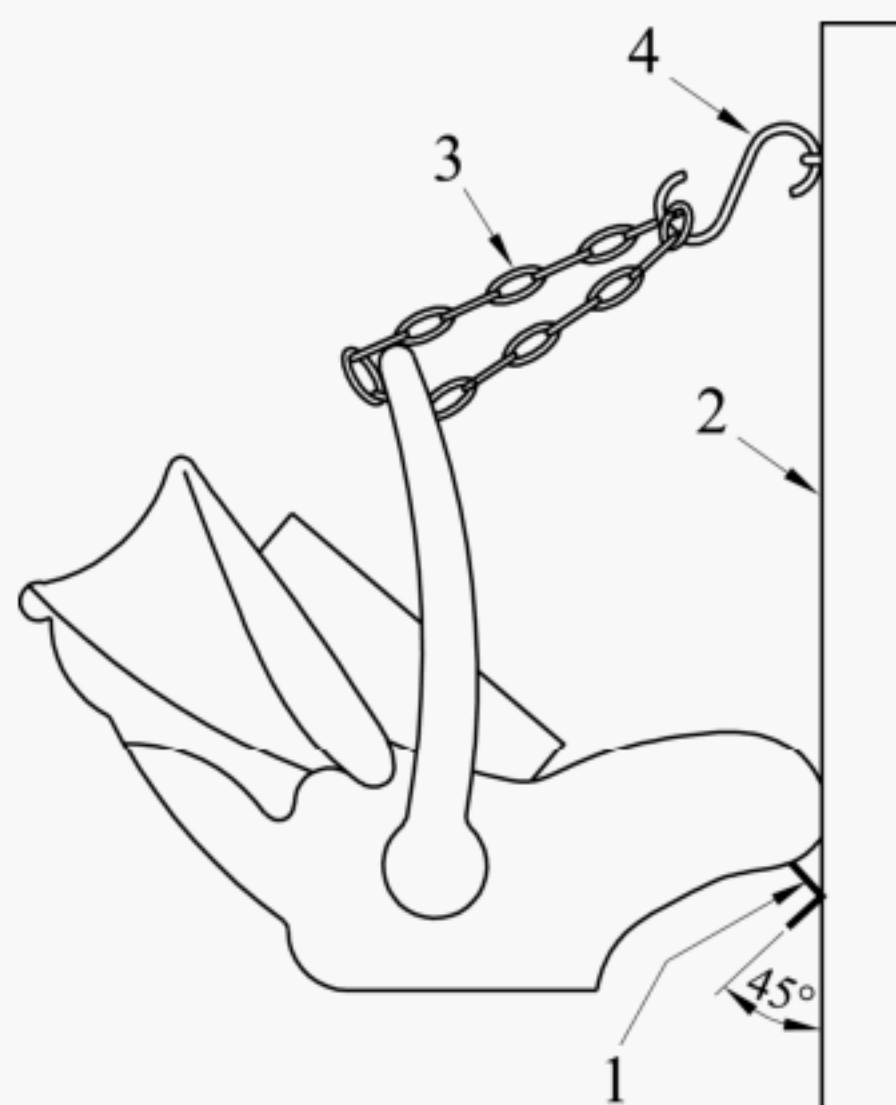
Vertical surface: Rigid and smooth vertical surface.

Suspension system: Chain (with links less than or equal to 45 mm) or steel wire (with a diameter less than or equal to 2 mm) to suspend the cradle.

S hook: an appropriate S hook to suspend the cradle.

The distance between the S hook and the rotation point as well as the length of the suspension system shall be adjustable to accommodate the positioning of reclined cradles at the required test angles (see 6.14).

The suspension system shall be attached to the vertical surface using the S hook.



Key

- 1 Rotation point
- 2 Vertical surface
- 3 Suspension system
- 4 S hook

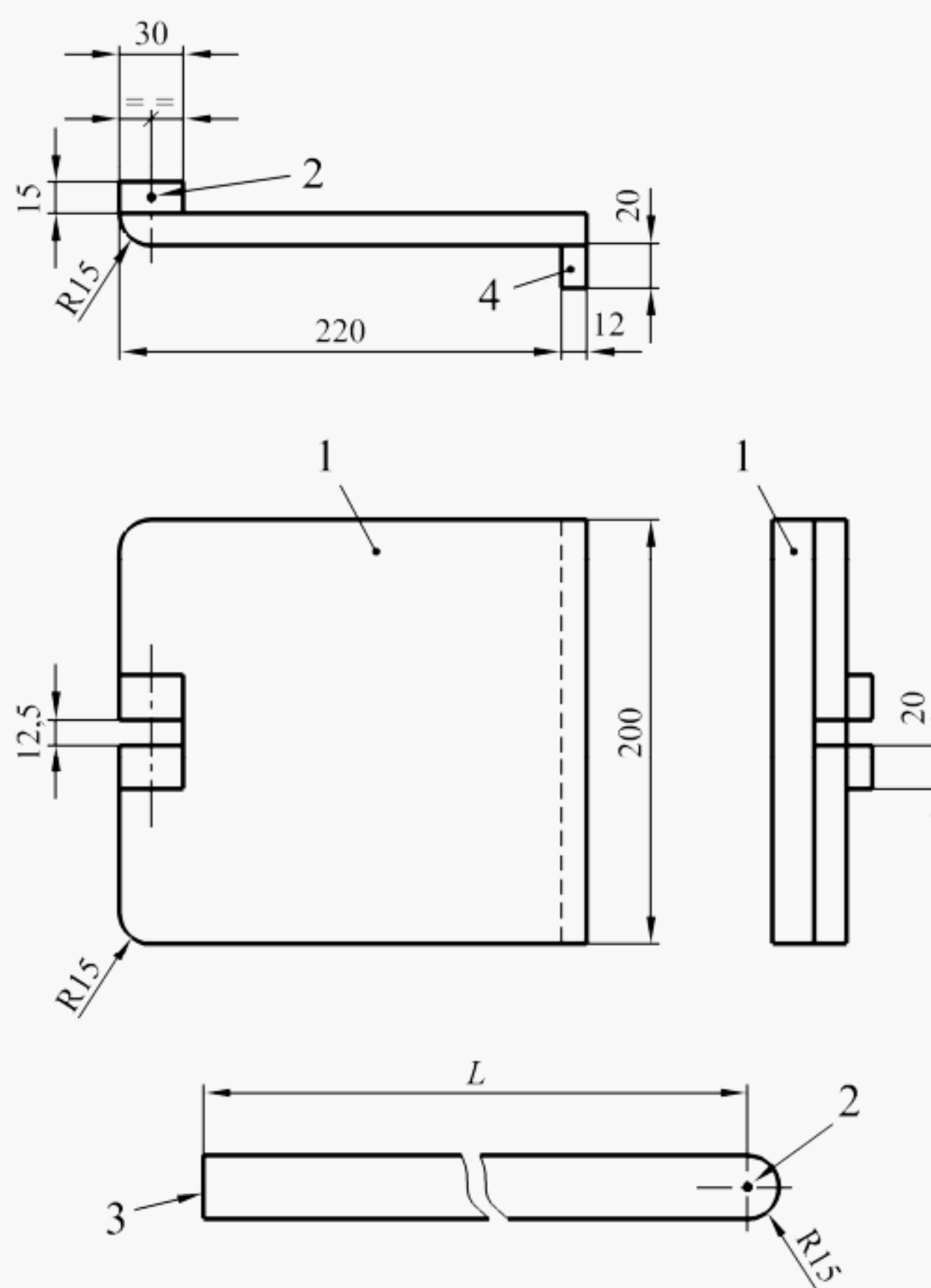
Figure 10 — Test equipment for handle locking mechanism strength test

6.2.8 Test surface for the stability test

A rigid flat surface covered with a 2 mm thick rubber covering with a Shore A hardness of (75 ± 10) IRHD measured according to EN ISO 868, ISO 7619-1 or ISO 7619-2.

6.2.9 Measurement device for the α angle

Dimensions in mm



Key

- 1 Base board
- 2 Pivot hole: 5 mm diameter, for steel pivot pin 5 mm diameter x 60 mm length
- 3 Adjustable member 30 mm x 12 mm: L is greater than the height of backrest
- 4 Removable stop, to be used for hammock type seat

Figure 11 — Measurement device for the α angle

6.3 Test method for finger entrapment

Check whether the 7 mm probe, Figure 10, with an applied force of up to 30 N, enters 10 mm or more into any opening in any possible orientation.

If the 7 mm probe enters 10 mm or more then the 12 mm probe, Figure 10, must also enter 10 mm or more with an applied force of up to 5 N.

6.4 Test method for small parts

6.4.1 Assessment of child's ability to grip components

A component is considered to be grippable by a child if it can grip the component between its thumb and forefinger or between its teeth. Where it is difficult to assess whether a child can grip a component, it shall be possible to insert the feeler gauge, 6.2.4, for a least 2 mm using a force of (10 ± 1) N between the component and the underlying layer of the component or the product, for the component to be considered as grippable by the child.

6.4.2 Torque test

Apply a torque gradually to the component over a period of 5 s in a clockwise direction until either:

- a) a rotation of 180° from the original position has been attained; or
- b) a torque of 0,34 Nm is reached.

The maximum rotation or required torque shall be applied for 10 s.

The component should then be allowed to return to a relaxed condition and the procedure repeated in an anticlockwise direction.

Where projections, components or assemblies are rigidly mounted on an accessible rod or shaft designed to rotate together with the projections, components or assemblies, during the test, the rod or shaft should be clamped to prevent rotation.

If a component which is attached by a screw thread that becomes loosened during application of the required torque, the torque should continue to be applied until the required torque is exceeded or the component disassembles or it becomes apparent that the component will not disassemble.

When using clamps and test equipment care should be taken not to damage the attachment mechanism or body of the component.

Check whether any component or part of a component that is removed during the test fits wholly within the test cylinder specified in 6.2.3.

6.4.3 Tensile test

The tensile test shall be carried out after the torque test, 6.4.2, and on the same component as used for the torque test.

Attach a suitable clamp to the component assessed as being grippable in accordance with 6.4.1, taking care not to damage the attachment mechanism or body of the component.

Fasten the component in a tensile testing machine and apply a tensile force of up to 90 N to the component to be tested. Apply the force gradually over a period of 5 s and maintain for 10 s.

Check whether the component or any part of a component that is removed during the test fits wholly within the small part cylinder specified in 6.2.3.

6.5 Test method for springs

Load the reclined cradle with the test mass B as specified in 6.2.2.

Measure the distance between 2 helical coils.

Repeat the measurement with the reclined cradle unloaded.

6.6 Test method for locking mechanisms

6.6.1 Test method for incomplete deployment

Place the reclined cradle on a horizontal surface.

If the reclined cradle maintains its position when the locking mechanism is not fully engaged, position the test mass B as specified in 6.2.2 so that its base is flush with the junction line and in the middle of the width.

6.6.2 Test method for unintentional release of locking mechanisms

Position the test mass B given in 6.2.2 so that its base is flush with the junction line and in the middle of the width. Maintain this test mass with the restraint system.

If the requirement 5.8.3 a) applies, apply a 50 N force.

If the requirement 5.8.3 c) or 5.8.3 d) applies, carry out one of the unlocking actions.

6.6.3 Test method for the durability of the locking mechanisms

Operate any locking mechanisms 300 times.

6.7 Test method for the reclining system

Operate any reclining mechanism 300 times.

Adjust the backrest of the reclined cradle to the most vertical position, with α angle not exceeding 100° when measured in accordance with 6.8.2.

Position test mass A in such a way that its base is placed along the junction line and centrally against the backrest.

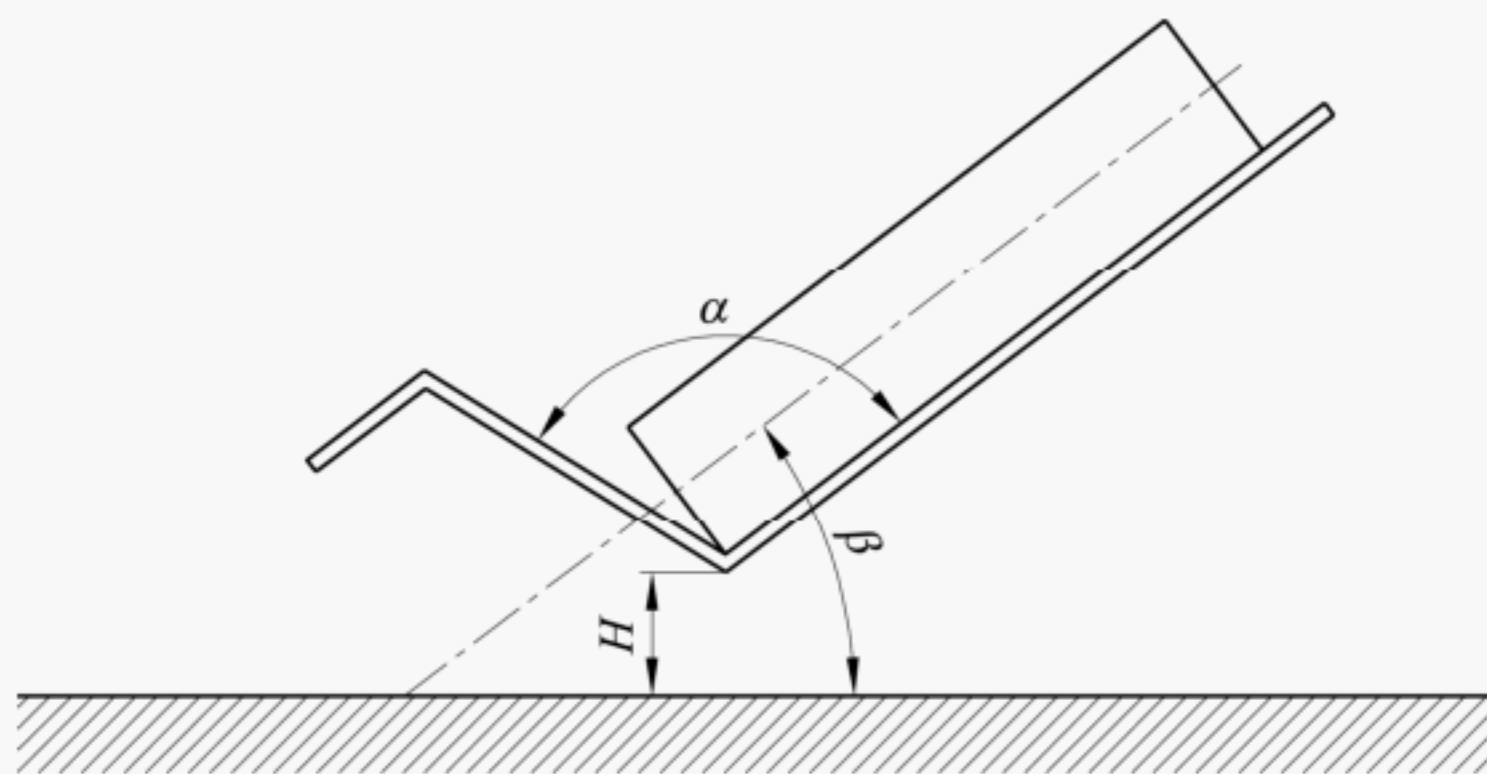
Hold the backrest in its most upright position. Release the adjustment mechanism. Let the backrest fall freely. If the backrest engages into its next position, continue the operation until the backrest is in its most reclined position.

During movement of the reclined cradle or its backrest towards the most reclined position, record if the seat unit touches the ground or any rigid part of the cradle.

6.8 Test method for the measurement of angles and height of seat unit

6.8.1 General

Place the reclined cradle on a horizontal surface.



Key

- α Angle between the backrest and the seat
- β Angle between the test mass placed against the backrest and the horizontal surface
- H Minimum distance between the lower surface of the seat unit and the horizontal surface

Figure 12 — Test method for angles

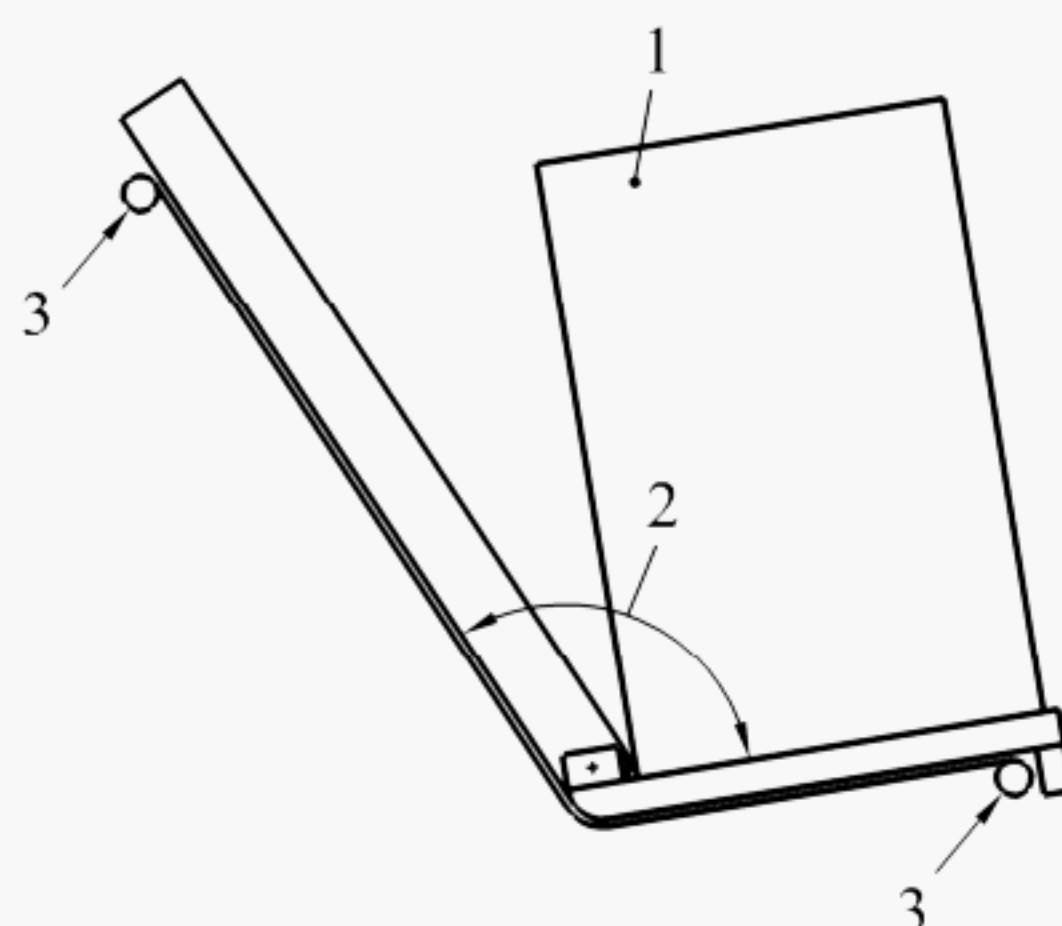
The α angle is the angle between the backrest and seat. The β angle is the angle between the backrest and horizontal surface. The height H is the minimum distance between the bottom of the soft, flexible seat unit and the horizontal surface.

6.8.2 Test method for the measurement of angles

6.8.2.1 Test method for the measurement of α angle

Position the measurement device for the α angle (6.2.9) in the cradle with the adjustable member firmly against the backrest.

Place test mass A on the base board of the measurement device, as close as possible to the adjustable member. Measure the α angle.



Key

- 1 Test mass A
- 2 Angle " α "
- 3 Seat unit frame

Figure 13 — Test method for the measurement of α angle

6.8.2.2 Test method for the measurement of β angle

Position the relevant test mass centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line.

For cradles intended for children up to 6 kg, use test mass A.

For cradles intended for children up to 9 kg, use test mass B.

Measure the β angle in the most upright position for use and in the most reclined position for use.

6.8.3 Test method for the measurement of height H

Position the relevant test mass centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line.

For cradles intended for children up to 6 kg, use test mass A.

For cradles intended for children up to 9 kg, use test mass B.

Check the distance H as shown in Figure 12.

6.9 Reclined cradle tipping resistance test

The reclined cradle shall be suspended by attaching the handle to the hook, using the straps if required, as described in 6.2.5 and held in place to prevent it from tipping sideways or rotating.

If the backrest is adjustable, these tests shall be carried out with the backrest in its most onerous position for each direction.

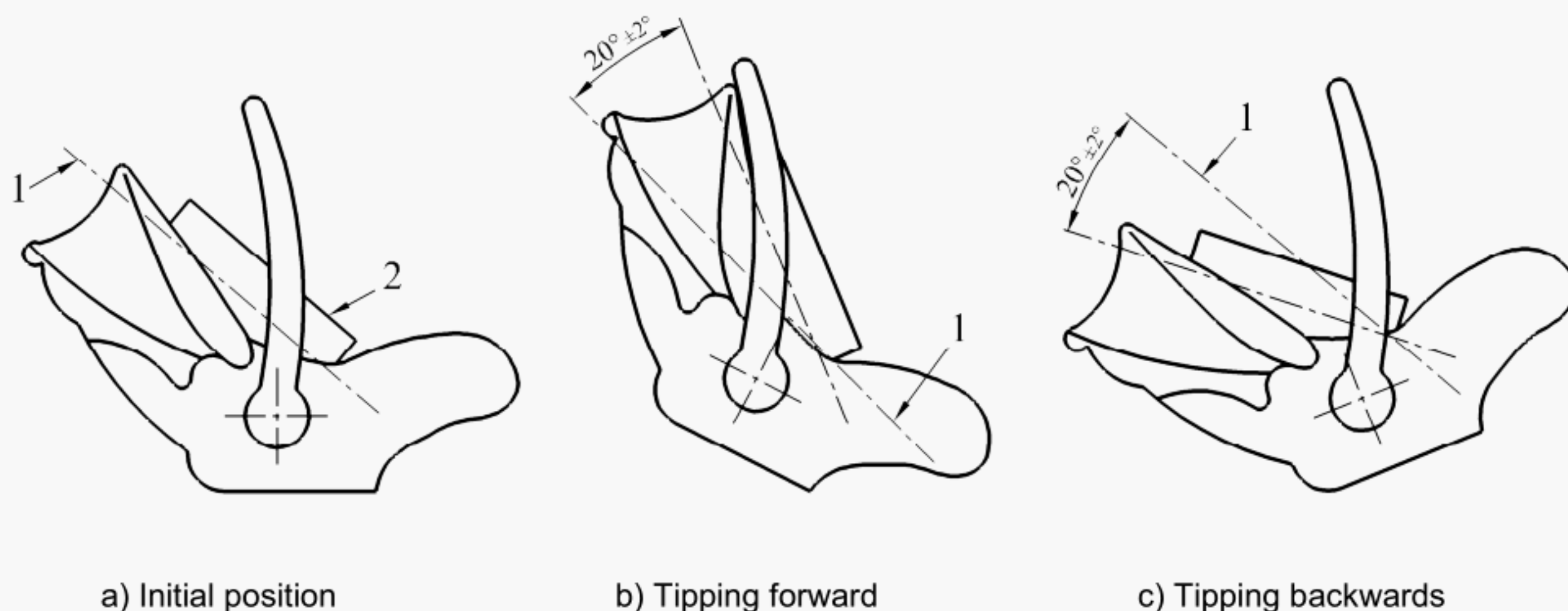
The test mass A described in 6.2.1 shall be positioned centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line and held in place by the restraining system or by any other

means which does not affect the test result. The angle between the length of the cylinder and the horizontal in this initial position shall be measured.

Unlock the handle and rotate the reclined cradle (20 ± 2)° with respect to the initial position (see Figure 14).

Release the reclined cradle.

Perform the test three times in each direction.



Key

- 1 Reference axis
- 2 Test mass

Figure 14 — Reclined cradle tipping resistance test

6.10 Reclined cradle tipping resistance test from the floor

The test mass A described in 6.2.1 shall be positioned centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line and held in place by the restraining system or by any other means which does not affect the test result.

If the backrest is adjustable, these tests shall be carried out with the backrest in its most onerous position for each direction.

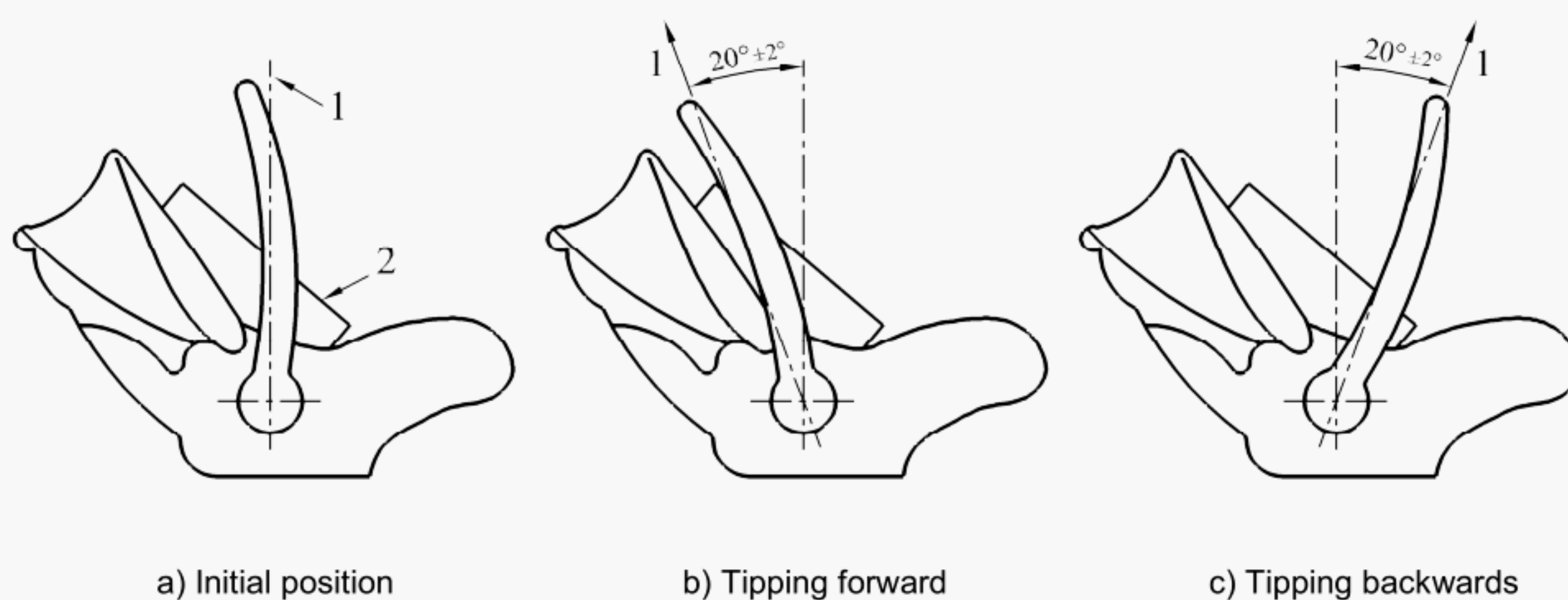
Measure the angle of the carrying handle in its initial carrying locked position.

Attach a cord or similar to the middle of the carrying handle.

Rotate the carrying handle (20 ± 2)° with respect to the initial position (see Figure 15) and maintain this position by any means that does not impair the test.

Lift the reclined cradle gradually in the vertical direction by means of the cord (see Figure 16).

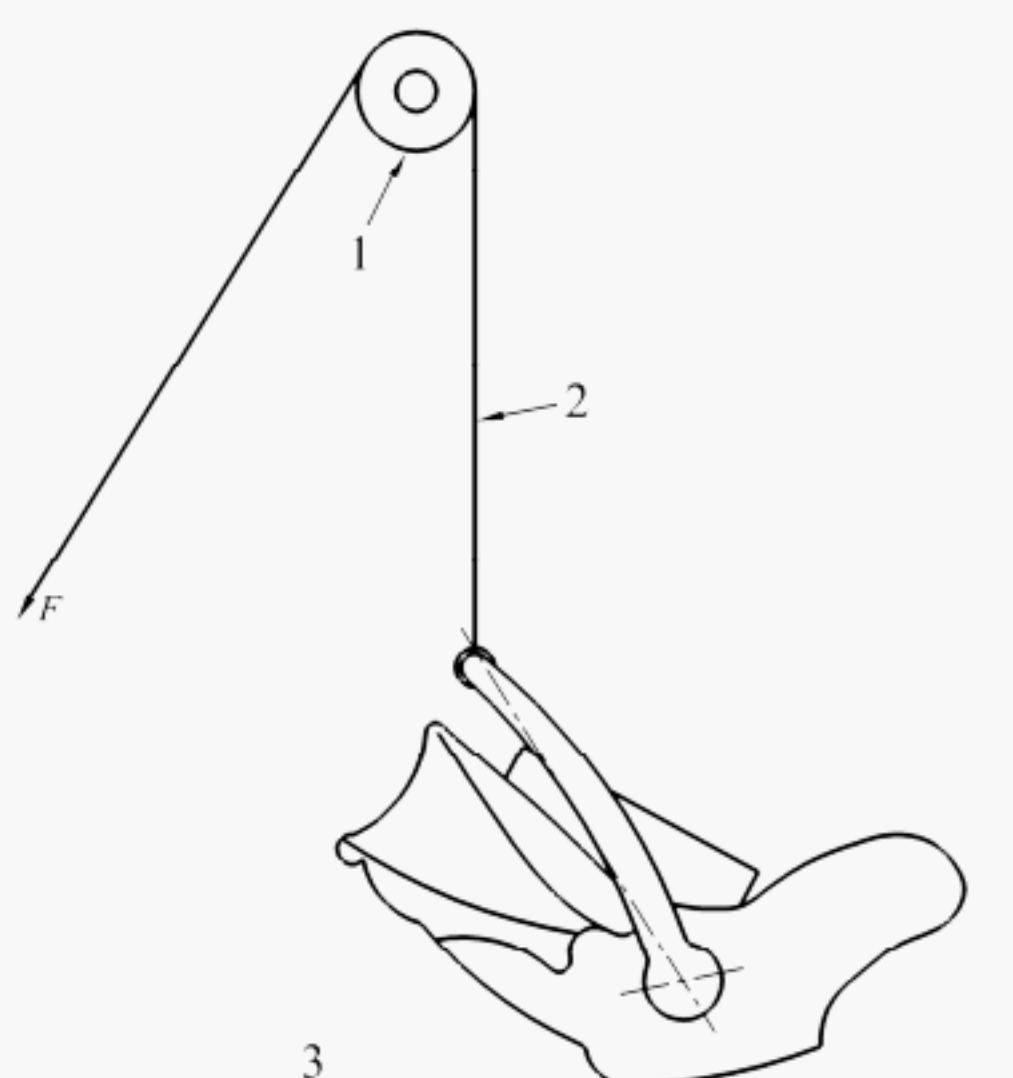
Perform the test three times in each direction.



Key

- 1 Reference axis
- 2 Test mass

Figure 15 — Reclined cradle tipping resistance test from the floor



Key

- 1 Pulley
- 2 Vertical rope
- 3 Ground surface
- F Lifting force

Figure 16 — Reclined cradle tipping resistance test from the floor: example of lifting method

6.11 Test method for stability

Place the reclined cradle on the test surface (see 6.2.8) inclined at 15°.

a) longitudinal stability:

- 1) front longitudinal: seat of the reclined cradle towards the bottom of the slope;
 - 2) rear longitudinal: seat of the reclined cradle towards the top of the slope;
- b) transverse stability:
- 1) right-hand transverse: reclined cradle perpendicular to the slope;
 - 2) left-hand transverse: reclined cradle perpendicular to the slope, in the opposite direction from above.

In each case, place the relevant test mass in the reclined cradle (see 6.1) and maintain it with the restraint system or with any other means which does not affect the test result.

For cradles intended for children up to 6 kg, use test mass A.

For cradles intended for children up to 9 kg, use test mass B.

If the seat and/or the backrest are adjustable, these tests shall be carried out with the seat and/or backrest adjusted to the maximum upright and maximum reclined positions of use.

If the reclined cradle slips, place it against stops which prevent the slippage but which have no influence on the stability of the product.

6.12 Test method for static strength

Place the reclined cradle on a horizontal surface. If the backrest is adjustable, adjust it to the maximum reclined position.

Load the reclined cradle with a mass of 20 kg, evenly distributed over the whole seat unit including the backrest.

Maintain this load for 30 min.

The mass shall only be supported by the product throughout this test.

6.13 Test method for durability of reclined cradles with carrying handle(s)

Place the test mass A described in 6.2.1 in the reclined cradle centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line; hold the test mass in place by means of the restraining system or by any other means which do not affect the test result. The test mass can be wrapped in a protective cover to ensure that the seat fabric is not damaged during the test. If the backrest is adjustable, position it in its maximum reclined position.

Suspend the reclined cradle by the carrying handle(s) from the hooks, using the straps if required, as described in 6.2.5. Raise the metal plate and let it fall freely from a height of 100 mm onto the 4 rubber stops described in 6.2.5.

After dropping the plate 10 000 times at a rate of ten times a minute, remove the test mass.

6.14 Handle locking mechanism(s) strength test

Place the test mass A described in 6.2.1 in the reclined cradle centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line.

If the backrest is adjustable, these tests shall be carried out with the backrest adjusted to the maximum reclined position.

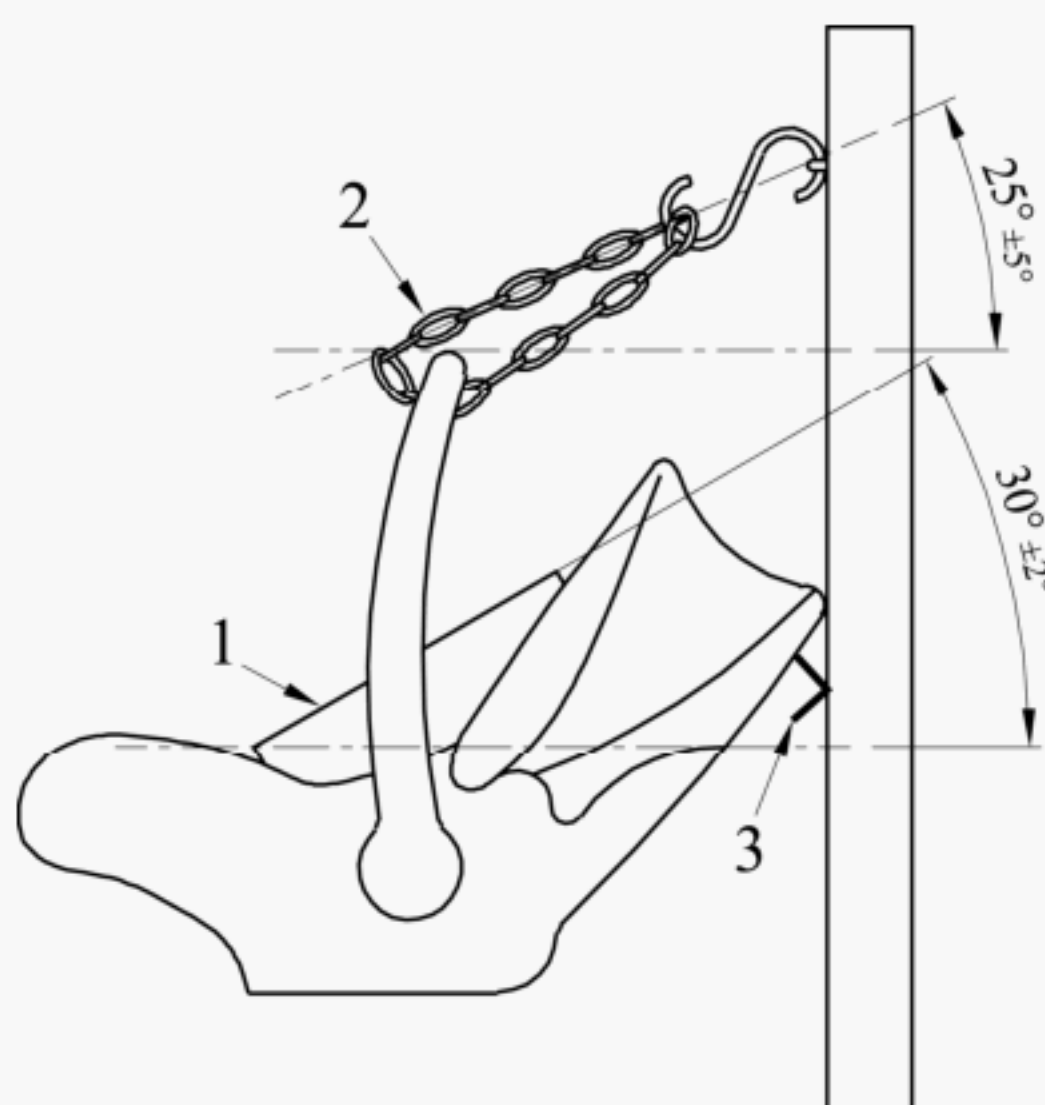
Place the carrying handle in its position for carrying the reclined cradle and in accordance with the manufacturer's instructions.

Place one end of the reclined cradle on the rotation point (see 6.2.7) or inside the rotation point such that this end of the reclined cradle is supported by the rotation point. Attach the suspension system (see 6.2.7) to the middle of the carrying handle. Adjust the distance between the S hook (see 6.2.7) and the rotation point as well as the length of the suspension system such that the following angles are obtained (see Figure 17):

- the angle between the top part of the suspension system and the horizontal shall be $(25 \pm 5)^\circ$;
- the angle between the side of the test mass and the horizontal shall be $(30 \pm 2)^\circ$.

The reclined cradle shall remain suspended for 4 hours.

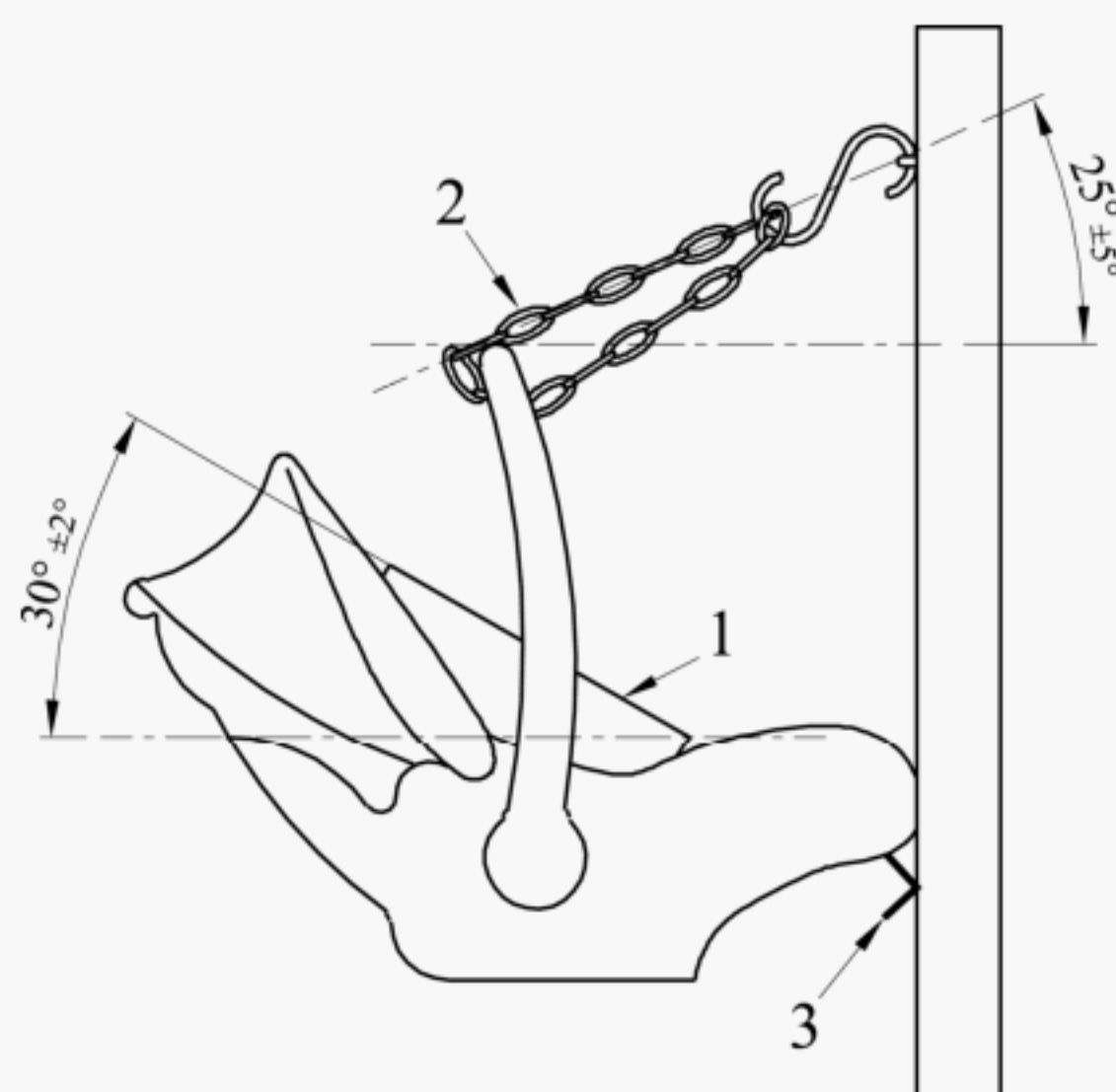
Repeat the test on the other end of the reclined cradle (see Figure 18).



Key

- 1 Test mass A
- 2 Chain
- 3 Rotation point

Figure 17 — Test head side



Key

- 1 Test mass A
- 2 Chain
- 3 Rotation point

Figure 18 — Test Foot side

6.15 Test method for slippage of the reclined cradle

The test equipment comprises a rigid plane covered with uncoated tempered float glass that has a smooth surface and thickness of 6 mm. This rigid plane is inclined at angle of 12° to the horizontal. Removable stops shall be used to prevent the reclined cradle from moving while the test is being set up.

Adjustable backrests shall be adjusted to their maximum reclined position. Any tilt or rocking mechanism shall be blocked.

Place the reclined cradle on the rigid plane against the stops in a forward direction. Place test mass A, 6.2.1, in the reclined cradle centrally against the backrest in such a way that its bottom edge is in contact with the seat/back junction line. Test mass A shall be maintained in the reclined cradle by the restraint system or by any other means that does not impair the test.

Allow the reclined cradle to reach equilibrium to prevent dynamic effects due to bouncing and flexibility of materials.

Remove the stop(s) in such a way that their removal has no effect on the reclined cradle. Leave the reclined cradle for 1 min.

Measure the maximum slippage of the product down the inclined plane.

6.16 Test method for the strength of the restraint system

Secure the reclined cradle against movement by any appropriate means.

Apply a force of 100 N for 1 min to each attachment point:

- first in the stress direction under normal use;
- then in a direction 45° to the previous direction.

If the attachment points are common with the transport handles, then carry this test out on a separate sample.

Repeat the test with the closing system locked.

6.17 Test method for the slippage of the restraint system

Take a sufficient amount of the restraint system on either side of the attachment/adjustment system and fix one end in the jaw of a dynamometer and the other end in the other jaw. The distance between the jaws shall be 200 mm.

Draw a line over the entire width of the specimen flush with each jaw.

Set the jaw movement speed at (500 ± 10) mm per min.

Reduce the distance between the jaws to 150 mm without modifying the position of the specimen. Submit the specimen to a tensile force of (100 ± 10) N.

When this force is reached, come back to the distance between jaws of 150 mm.

Repeat this cycle ten times.

Measure the distance between the lines drawn flush with the jaws.

6.18 Durability of marking

Any permanent labels shall be rubbed for 20 s with a cotton cloth moistened with water.

7 Product information

7.1 General

Product information shall be provided to reduce the possible consequences of foreseeable hazards connected with the use of the reclined cradle.

Product information shall be provided in the official language(s) of the country where the product is sold.

NOTE For car seats complying with ECE 44 that can be used as reclined cradles according to manufacturer's instructions, in the following warnings and instruction for use, the words "reclined cradle" may be changed in "car seat", or "car seat, when used as a reclined cradle".

7.2 Marking of the product

The reclined cradle shall be visibly and permanently marked with at least the following:

- a) the name or trade mark of the manufacturer, importer or distributor;
- b) the identification of the product (for example the model number, name or other means to identify it);
- c) the maximum weight of the child for which the reclined cradle is intended, that is either 6 kg or 9 kg; this requirement does not apply to car seats complying with ECE 44;
- d) the warnings:
 - 1) **WARNING**
 - 2) **Never leave the child unattended.**

This warning may be accompanied by the pictogram of Figure 19.



Figure 19

- 3) It is dangerous to use the reclined cradle on an elevated surface, e.g. a table.
- 4) This reclined cradle is not intended for prolonged periods of sleeping.
- 5) Always use the restraint system.

7.3 Purchase information

Purchase information shall be available at the point of sale and shall contain the following:

- a) the name or trade mark of the manufacturer, importer or the organisation responsible for its sale and the respective address;
- b) the maximum weight of the child for which the reclined cradle is intended, that is either 6 kg or 9 kg; this requirement does not apply to car seats complying with ECE 44;
- c) the warning "**Do not use the reclined cradle once your child can sit unaided**";
- d) the warning "**This reclined cradle is not intended for prolonged periods of sleeping**";
- e) number and date of the standard.

7.4 Instructions for use

Instructions for use shall contain the name or trade mark of the manufacturer, importer or the organisation responsible for its sale and the respective address and the identification of the product (e.g. the model number, name).

Instructions concerning the correct and safe assembly and use of the reclined cradle shall be provided.

These instructions shall be headed:

IMPORTANT! KEEP FOR FUTURE REFERENCE.

These instructions shall include the following:

- a) **WARNING**
- b) **Never leave the child unattended.**

This warning may be accompanied by the pictogram of Figure 19.
- c) **Do not use the reclined cradle once your child can sit unaided.**
- d) **This reclined cradle is not intended for prolonged periods of sleeping.**
- e) **It is dangerous to use this reclined cradle on an elevated surface, e.g. a table.**

f) **Always use the restraint system.**

If the reclined cradle is fitted with a toy bar which is not intended to be used as a carrying handle the following warning shall be included:

g) **Never use the toy bar to carry the reclined cradle.**

Additional information

- h) The maximum weight of the child for which the reclined cradle is intended, that is either 6 kg or 9 kg; this requirement does not apply to car seats complying with ECE 44.
- i) This reclined cradle does not replace a cot or a bed. Should your child need to sleep, then it should be placed in a suitable cot or bed.
- j) Do not use the reclined cradle if any components are broken or missing.
- k) Do not use accessories or replacement parts other than those approved by the manufacturer.
- l) Instructions for the maintenance of the product and for cleaning or washing.

8 Non-permeable packaging

Any plastic covering used as packaging that does not fulfil the requirements of EN 71-1, shall be conspicuously marked with a statement to indicate that any plastic cover should be removed, destroyed or kept away from children.

Annex A (informative)

A-deviations

A-deviations: National deviation due to regulations, the alteration of which is for the time being outside the competence to the CEN/CENELEC member.

This European Standard does not fall under any Directive to the EC. In the relevant CEN/CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

FRANCE:

The France decree N. 91-1292 of 20 December 1991 relating to the prevention of hazards resulting from the use of child care articles, as published in the *Official Journal* of the French Republic of 24 December 1991, provides under article 2 of title II of its annex that: "child care articles must be made of material which either do not burn under direct action of a flame, a spark or any other potential seat of fire, or are hardly flammable (the flame extinguishes as soon as the fire cause disappears), or when flammable, burn slowly with a low flame propagation rate".

Consequently, the requirements in 4.2 of the standard will have to be supplemented, in France, by the following: "The flame propagation rate of textiles, coated textile supports and plastic covering shall not exceed 30 mm/s when tested in accordance with clause 5.7 of EN 71-2:1993".

Annex B (informative)

Relevant standards and recommendations for multi purpose reclined cradles

The following list is present to give a guide; it does not have to be considered complete. Other standards and recommendations may apply (for example, if a toy is attached to the cradle, it has to comply to EN 71 requirements).

- EN 1466, *Child care articles – Carry cots and stands – Safety requirements and test methods*
- EN 1888, *Child care articles – Wheeled child conveyances – Safety requirements and test methods*
- EN 14036, *Child use and care articles – Baby bouncers – Safety requirements and test methods*
- EN 14988-1, *Children's high chairs – Part 1: Safety requirements*
- EN 14988-2, *Children's high chairs – Part 2: Test methods*
- ECE 44, *Regulation No 44 of the Economic Commission for Europe of the United Nations (UN/ECE) – Uniform provisions concerning the approval of restraining devices for child occupants of power driven vehicles ('child restraint system')*

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