United Kingdom of Great Britain and Northern Ireland

EDICT OF GOVERNMENT

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BS 7409 (1996) (English): Specification for safety requirements for wheeled child conveyances

Nulli vendemus, nulli negabimus aut differemus Rectum aut Justiciam.

We will sell to no man, we will not deny or defer to any man either Justice or Right.

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BRITISH STANDARD

BS 7409 : 1996

Incorporating Amendment No. 1

Specification for

Safety requirements for wheeled child conveyances

ICS 97.190

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee CW/39, Perambulators and carrycots, upon which the following bodies were represented:

Association of Consulting Scientists
Baby Equipment Hirers' Association
Baby Products Association
British Association of Nursery and Pram Retailers
British Retail Consortium
British Toy and Hobby Association
Co-operative Wholesale Society Ltd.
Consumer Policy Committee of BSI
Consumers' Association
Department of Trade and Industry (Consumer Safety Unit, C A Division)
Furniture Industry Research Association
Institute of Trading Standards Administration
Royal Society for the Prevention of Accidents

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Contents

Foreword

This British Standard has been prepared by Technical Committee CW/39. It replaces BS 7409 : 1991 which is withdrawn and which superseded BS 4792 : 1984 and BS 4139 : 1967. These two standards are currently referred to in UK legislation.

This standard is the revision of BS 7409 : 1991 which was written to bring together the requirements and tests of three previous standards dealing with separate designs of wheeled child conveyance. It therefore covers the more popular convertible pram/push chair combination which previously would need to conform to two standards.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to the following statutory instruments:

Statutory Instrument 1978 No. 1372 The Perambulators and Pushchairs (Safety) Regulations;

Statutory Instrument 1985 No. 2047 The Pushchairs (Safety) Regulations;

Statutory Instrument 1988 No. 1324 The Furniture and Furnishings (Fire) (Safety) Regulations;

Statutory Instrument 1989 No. 2358 The Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations.

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Specification

1 Scope

This British Standard specifies safety requirements for wheeled conveyances for one or more children.

It does not cover wheeled conveyances designed for invalid children and does not specify requirements for accessories or products not designed for use with a chassis.

NOTE. Bodies designed solely for use as carry cots and Moses baskets, i.e. items not designed for use with a chassis, are the subject of a separate standard BS 7551 : 1992.

2 References

2.1 Normative references

This British Standard incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this British Standard only when incorporated in it by updating or revision.

2.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this standard the following definitions apply:

3.1 applied

A parking device is considered to be applied when the user has fully and correctly operated any lever or other device that is intended to be used in order to change the condition of the parking device from one in which it is not preventing and will not prevent movement of the vehicle or rotation of the wheel or wheels on which it operates to a condition in which it is intended to be effective. The parking device is considered to be applied as soon as the operation by the user of that lever or other device has been completed and no account is taken of whether or not the completion of that operation causes the parking device to become immediately effective in preventing movement of the vehicle or rotation of the wheel or wheels on which it operates. The word 'apply' is construed accordingly.

3.2 body

A structure of boat or box-like shape primarily designed to transport a child in an essentially horizontal position.

3.3 chassis

A wheeled framework with an extended handle or handles for pushing and steering, designed to accommodate and transport a body or seat.

3.4 seat

A structure primarily designed to support a child in a sitting position, that may or may not be adjustable to achieve a reclining or recumbent position.

3.5 wheel

Either a single wheel or a set of adjacent wheels attached to the same mounting point, unless otherwise stated.

3.6 wheeled child conveyance

A wheeled vehicle designed for the carriage of one or more children.

NOTE. The term wheeled conveyance is intended to cover the whole range of vehicles currently available or likely to be developed and includes perambulators, pushchairs, strollers, combination perambulators and the like.

4 General test conditions

4.1 Number of samples

4.1.1 At least one complete vehicle (comprising one chassis and at least one pram body or seat unit) shall be tested.

4.1.2 The tests shall be carried out in the order that occurs in the standard with repeat testing as indicated in clause **18**.

4.1.3 A combination shall meet all the requirements for prams and all the requirements for pushchairs. It shall be tested as one pushchair (i.e. a chassis plus seat unit) and one pram (i.e. another chassis plus pram body) to avoid subjecting one chassis to two complete sets of dynamic tests in clause **18**, annexes T, U and V.

4.1.4 Vehicles with multiple places for seats and body units shall meet all requirements in any possible arrangement, with the exception that performance tests in clause **18**, annexes T, U and V shall be conducted with the maximum number of seat units on one chassis, and the maximum number of pram bodies on a separate chassis. In all cases there shall be either a seat unit or pram body in each position a child would normally occupy.

4.2 Principle for most onerous condition

References to the most onerous condition are based on the following principles, in order to produce the greatest likelihood of failure for a specific test:

– the choice and number of seat units and/or pram bodies attached to the chassis. For vehicles with multiple places there shall always be at least one place for carrying a child.

– the addition (or not) of any additional or removable places for carrying children.

– the use of test mass **B.1** or **B.2** or neither in any place for conveying a child. At least one test mass shall be used on a vehicle being tested.

– the addition (or not) of any basket/bag/tray for carrying additional load(s) allowed for in the manufacturer's instructions or otherwise approved by the manufacturer, and the placing (or not) of load(s) in any such facility, up to the maximum mass permitted in the manufacturer's instructions.

– the adjustment of seat units, footrests, handles and any other adjustable features or accessories, or any other optional arrangement of the vehicle allowed in the manufacturer's instructions or otherwise approved by the manufacturer.

NOTE. The heaviest loads will not always produce the most onerous condition.

In the cases where the most onerous condition is required, record on the test report the exact condition selected.

5 Materials

5.1 Plastics

Plastics on all parts of the vehicle, whether exposed or accessible to a child, shall not contain a proportion by mass of any soluble antimony, arsenic, barium, cadmium, chromium, lead, mercury or selenium or any soluble compound of any of those elements, which exceeds the following amounts when determined in accordance with clauses **8** and **9** of BS 5665 : Part 3 : 1995.

antimony	250 mg/kg;
arsenic	100 mg/kg;
barium	1000 mg/kg;
cadmium	100 mg/kg;
chromium	100 mg/kg;
lead	250 mg/kg;
mercury	100 mg/kg;
selenium	500 mg/kg.

5.2 Coatings and finishes

Any coating of paint, varnish, lacquer or similar substance on any part of the vehicle, whether exposed or accessible to a child, shall not contain a proportion by mass of any soluble antimony, arsenic, barium, cadmium, chromium, lead, mercury or selenium, or any soluble compound of any of those elements, which exceeds the following amounts when determined in accordance with clauses **8** and **9** of BS 5665 : Part 3 : 1995.

antimony	250 mg/kg;
arsenic	100 mg/kg;
barium	1000 mg/kg;
cadmium	100 mg/kg;
chromium	100 mg/kg;
lead	250 mg/kg;
mercury	100 mg/kg;
selenium	500 mg/kg.

Where a surface is coated with a multi-layer of paint or similar coating, the sample shall be taken down to the substrate.

5.3 All materials

Where different parts of a vehicle are coated with different materials, the coating of each part shall conform to **5.1** and **5.2**.

5.4 Linings

Where linings are of plastics or plastics coated material they shall be not less than 0.27 mm thick. Where linings are of fabric that is not coated with plastics they shall be so tensioned as not to present an undue ingestion hazard to the child. When tested in accordance with BS 1006 : 1990, section **E04**, lining of fabric not coated with plastics shall give a numerical rating for change in colour of not less than 4 and for staining of not less than 3. When tested in accordance with BS 1006 : 1990, section **X12**, lining of fabric not coated with plastics shall give a numerical rating for staining of not less than 3 to 4 for both wet and dry rubbing.

6 Construction

6.1 Vehicles shall not contain any open-ended tubes, projections, holes, loose washers, speed fixings, nuts, crevices or closing mechanisms in which a child's finger(s) or flesh is likely to be trapped when the vehicle is assembled in a functional or apparently functional manner.

6.2 Vehicles shall not have any exposed or accessible edges, points or burrs sharp enough to inflict a wound or abrasion.

6.3 Any permanent fixture that can be gripped by a child's fingers or teeth shall be attached to the vehicle in such a manner that it cannot be removed or broken by applying a force to the fixture of 90 N in any direction.

6.4 Any part of the vehicle that is essential for its safe operation shall be attached in such a manner that it cannot be displaced from a normal operating position or broken when a force of 90 N is applied in any direction to that part.

This requirement does not apply to the force needed to operate any locks, levers, parking devices or any other device intended to be operated by the user.

6.5 Any detachable seat, body or other component, the removal of which would be hazardous to the child, shall be attached to the vehicle in such a manner that the means of attachment shall be either:

a) inaccessible to the child whilst in the vehicle; or

b) incapable of being operated by the child.

Any detachable component shall conform to the requirements of **3.2.2.1** of BS 5665 : Part 1 : 1989.

6.6 It shall not be possible to assemble the vehicle in such a manner that the parking device is not effective.

6.7 Any handle that is adjustable, e.g. such as those that have a telescopic action to adjust the length, shall not present a finger entrapment hazard, as described in **6.1**, throughout its total range of movement.

6.8 Pushchairs with rotating seat units, in order to provide seat recline, shall be fitted with positive stops to prevent inadvertent rotation. When tested in accordance with annex X, the test dummy shall not move past the horizontal.

NOTE. The purpose of this requirement is to prevent the unrestrained child from falling from the seat when adjustments are being made to the seat recline mechanism.

7 Parking devices

7.1 For the purposes of this clause and of annex A each reference to a wheel shall be taken to mean a single wheel. Vehicles shall be fitted with a parking device that limits movement of the vehicle as specified in **7.2** to **7.6**.

7.2 If the vehicle has two or more independently operated parking devices, each device shall be tested separately and shall conform to clause **7**.

7.3 There shall be no visible damage to the mechanism of the parking device when tested in accordance with **A.2**.

7.4 The maximum amount of movement of the wheel which the parking device will allow, shall be measured in accordance with **A.3**, on the test surface described in **A.1**. The maximum allowable movement of the wheel shall be 40 mm when tested as in **A.3.1.3**. A total movement which results from the sum of the movements recorded in **A.3.1.3** and **A.3.1.4** shall not exceed 80 mm.

7.5 The parking device shall be self-adjusting or be capable of simple adjustment if normal wear of any component within the system is likely to prevent the vehicle from meeting these requirements.

7.6 When the parking device is applied it shall, without further adjustment by the user, maintain the vehicle in a static condition on the slope when tested in accordance with **A.4**.

8 Folding vehicles

8.1 Locking devices

Each folding chassis shall have at least one primary locking device and at least one secondary locking device, all of which shall act directly on the folding mechanism.

When the chassis is assembled for use, in cases where it is possible to fold, reverse or pivot the handle or parts of the handle independently of other parts of the chassis, the handle or parts of the handle shall have at least one primary locking device and a secondary locking device in each design location that shall conform to **8.2** and **8.3**. Handles that are adjustable, e.g. that have a telescopic action to adjust the length, but do not fold, reverse or pivot shall conform to **6.7**.

The lever or any other device, intended to operate a locking mechanism shall be positioned so that it is not possible, in normal use, to inadvertently operate more than one device in a single action.

With all locking devices engaged and when tested in accordance with **C.2** none of the locking devices shall be released or damaged.

8.2 Primary locking device

The primary locking device(s) shall lock the folding mechanism in the normal operating position of the chassis.

NOTE. The device(s) may be manual in operation.

It shall require positive action on the part of the user to release the device(s).

When the secondary locking device(s) is released, the primary locking device(s) on the main folding mechanism of the chassis shall not permit the folding mechanism to move more than one-third of its total movement between the normal operating and fully folded position when tested in accordance with **C.3**.

8.3 Secondary locking device

The secondary locking device(s) shall be different in design and/or operation from, and shall be separate from and act independently of, the primary locking device(s). It shall lock automatically when the chassis is erected for use. It shall require positive action on the part of the user to release the device.

When the primary locking device(s) is released, the secondary locking device(s) on the main folding mechanism of the chassis shall not permit the folding mechanism to move more than one-third of its total movement between the normal operating and fully folded position when tested in accordance with **C.4**. In the case of secondary locking devices on handles, when the main handle locking device is released the secondary locking device shall prevent the presentation of finger entrapment hazards as described in **6.1** when tested in accordance with **C.4**.

9 Separate detachable bodies designed for use with a range of chassis

9.1 If the body has handles, the handles shall be so placed that, when tested in accordance with annex D, the angle of the base of the body shall not move by more than $\pm 5^{\circ}$ in the horizontal plane.

9.2 Flexible handles shall show no signs of damage when tested in accordance with annex E.

9.3 There shall be no permanent distortion or damage in any part of the body, handles or points of attachment when the handles are tested in accordance with annex F.

9.4 Bodies that can be folded for storage purposes by the removal or movement of loose components shall be so designed that when assembled for use the loose components are fully secured and cannot be accidentally dislodged.

9.5 When a body is tested in accordance with annex G the base shall support the body throughout the test.

9.6 The overall external size of the body shall be within the range of (760 ± 25) mm long by (340 ± 25) mm wide when measured (30 ± 1) mm above the base of the body.

9.7 The total mass of the body (excluding mattress, bedding and safety harness but including hood and apron) shall not exceed 9 kg.

9.8 Adjustable retaining straps shall be provided at each end to secure the body to a chassis. When disconnected no part of any such strap shall hang below the base of the body by more than 175 mm when the body is held horizontally.

9.9 When tested in accordance with annex H the adjustable retaining straps shall not become disconnected, slip or show signs of damage during or after the test.

9.10 Provision shall be made inside the body for the attachment of a child's safety harness conforming to BS 6684. The attachment points, one on each side of the base of the body, shall be located within 245 mm from the hood end of the body to midway along the body. The attachment points shall show no signs of damage when tested in accordance with annex J.

9.11 The minimum depth of the body at, or at any position within 300 mm from, the harness attachment points, shall be 140 mm when measured from the top edge to the top surface of the mattress or the next horizontal plane (the seat if there is one). The minimum depth at any point on the sides or ends of the body shall be 100 mm.

9.12 When tested in accordance with annex K the difference between the two dimensions measured shall be not more than 50 mm.

10 Separate detachable bodies designed for use with specific chassis

10.1 If the body has handles, the handles shall be so placed that, when tested in accordance with annex D, the angle of the base of the body shall not move by more than $\pm 5^{\circ}$ in the horizontal plane.

10.2 The flexible handles shall show no signs of damage when tested in accordance with annex E.

10.3 There shall be no permanent distortion or damage in any part of the body, handles or points of attachment when the handles are tested in accordance with annex F.

10.4 Bodies that can be folded for storage purposes by the removal or movement of loose components shall be so designed that when assembled for use the loose components are fully secured and cannot be accidentally dislodged.

10.5 When a body is tested in accordance with annex G the base shall support the body throughout the test.

10.6 Provision shall be made inside the body for the attachment of a child's safety harness conforming to BS 6684. The attachment points, one on each side of the base of the body for each child that could occupy the body, shall be located within 245 mm from the hood end of the body to midway along the body. The attachment points shall show no signs of damage when tested in accordance with annex J.

10.7 The minimum depth of the body at, or at any position within 300 mm from, the harness attachment points shall be 140 mm when measured from the top edge to the top surface of the mattress or the next horizontal plane (the seat if there is one). The minimum depth at any point on the sides or ends of the body shall be 100 mm.

10.8 When tested in accordance with annex H the devices used to attach the body to the chassis shall not become disconnected, loosened or show signs of damage during or after the test.

10.9 When tested in accordance with annex K the difference between the two dimensions measured shall be not more than 50 mm.

11 Chassis designed for use with a range of separate detachable bodies

11.1 A chassis shall be designed to accommodate and support all sizes of body specified in **9.6**. Chassis designed to be fitted with a range of bodies by means of adjustable straps shall be provided with structural members to which the adjustable retaining straps shall be secured such that

attachment and removal of the body shall only be made by opening and closing the connecting device of the retaining straps. Sideways restraint shall be provided such that any sideways movement of the test body as specified in annex L does not exceed 70 mm.

11.2 When tested in accordance with annex M the chassis shall not be permanently distorted or show signs of structural failure.

11.3 When fitted with any body conforming to this standard and with the mass of the body made up to 9 kg by the addition of bags of dry sand equally distributed over the base of the body, the assembled unit shall conform to the requirements of **12.2**.

11.4 When fitted with the rigid box specified in annex N and tested in accordance with that annex it shall not be possible to move the rigid box into such a position in the chassis that it becomes unsupported.

12 Chassis designed for use with a specific detachable body or seat

12.1 When tested in accordance with annex M the chassis shall not be permanently distorted or show signs of structural failure.

12.2 When tested in accordance with annex H the devices used to attach the body or seat to the chassis shall not become disconnected, loosened or show signs of damage during or after the test.

13 Seats

Where the dividing line between the seat and the backrest is not clearly defined, i.e. in hammock type seats, the angle shall be measured in accordance with annex P. Seats that are not adjustable to give an angle between the backrest and the horizontal of less than 60° shall be marked in accordance with **19.3**.

14 Safety harness

NOTE. The requirements of this clause are intended to help prevent children from falling or climbing out of the product.

14.1 Seat and chassis assemblies

Seat and chassis assemblies shall be fitted with a permanently attached harness assembly, comprising shoulder straps, front waist strap and a crotch strap (see figure 1) except in the case of seats conforming to BS AU 202a and BS 3254 : Part 2 and/or ECE Regulation 44.

The front waist strap shall be positively located on a rigid part of the structure excluding any bumper bar.

NOTE. Any straps may be designed to be reversible.

The crotch strap shall be linked to the front waist strap.

The waist strap(s) and crotch strap shall have a minimum width of 20 mm and the shoulder straps shall have a minimum width of 15 mm.

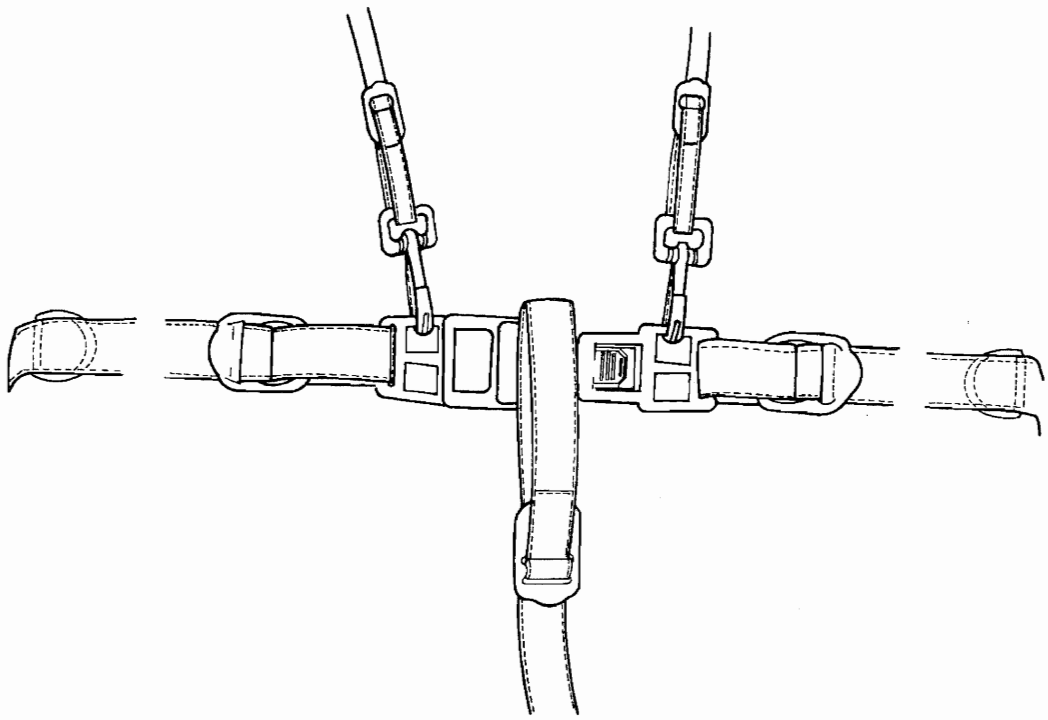


Figure 1. Harness assembly

The shoulder straps shall either:

a) meet the seat back at a point not less than 250 mm above the dividing line between the seat and the backrest. In hammock type seats, the point shall be determined using the apparatus described in annex P. The maximum distance between the inside edges of the shoulder straps at the point at which they meet the seat back shall be 150 mm; or

b) be attached to an adjustable rear waist strap which is incorporated with the front waist strap so as to encircle the child's torso. The shoulder straps shall meet the part of the rear waist strap which is adjacent to the child's back and the maximum distance between the inside edges of the shoulder straps at that point shall be 100 mm.

Seat and chassis assemblies, except those conforming to BS AU 202a and BS 3254 : Part 2 and/or ECE Regulation 44, shall incorporate fittings suitable for the attachment of a child's safety harness conforming to BS 6684. These fittings shall be two attachment points for each position that a child could occupy.

14.2 Bodies

Bodies shall be fitted with harness attachment points in accordance with **9.10**.

14.3 Seats and bodies

All components of the restraint system shall show no visible signs of damage, strap adjusters shall not move by more than 6 mm and fasteners shall not come undone when tested in accordance with annex J.

15 Stability

When fitted with the test body specified in annex L, chassis shall not tip over when tested in accordance with annex Q. Seat and chassis and body and chassis assemblies shall not tip over when tested in accordance with annex Q. In the case of vehicles with detachable bodies or seats the means for securing the body or seat to the chassis shall not become detached during the test.

16 Wheel security

When tested in accordance with annex R wheels shall remain secure and shall show no signs of damage likely to affect their function.

17 Rigidity

Seat and chassis or body and chassis assemblies shall show no structural failure when tested in accordance with annex S.

18 Performance

All tests specified in this clause shall be carried out with the vehicle in the most onerous condition, including the carrying of goods or accessories if permitted in the manufacturer's instructions. Chassis shall be fitted with a body and/or seat unit conforming to this standard. For the tests in annexes T, U and V, if a single chassis is to be sold with both a seat and a body, the tests shall be carried out on each combination. A separate chassis shall be used for each combination. The chassis used in combination with the seat in these tests shall be the chassis used for the other tests to which the vehicle is subjected.

The vehicle shall be checked for conformity to clauses **5** to **17** as appropriate. The locking devices on the vehicle shall be operated 200 times and the vehicle shall then be tested in accordance with annex T, at the end of which the amount of wheel rock of each wheel shall not have increased by more than 0.1 radians (5.7°) and the vehicle shall show no signs of structural failure.

Having conformed to the requirements of this clause, the vehicle shall be tested in accordance with **C.2** and annexes U and V and it shall show no sign of structural failure or loosening of fixings and shall still conform to clauses **7**, **8**, and **14** to **17**, in that order.

19 Marking

19.1 Bodies, seats and chassis that conform to this standard shall be permanently marked with the following:

a) The name, trademark or other means of identification of either the UK manufacturer, UK distributor or UK retailer.

b) The number and date of this British Standard, i.e. BS 7409 : 1996[1)].

19.2 Bodies, seats or chassis designed for attachment to specific mating units shall bear a permanent label that identifies the mating unit or units.

[1)] Marking BS 7409 : 1996 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

19.3 Seats of the non reclining type (i.e. if the angle between the back and the horizontal is not adjustable to give an angle of less than 60°) shall have a permanent notice in a prominent position stating:

'Not recommended for a child under 6 months old'.

19.4 Bodies and chassis that can be sold separately and complete vehicles shall have a permanent notice in a prominent position stating:

'WARNING: A CHILD'S SAFETY IS YOUR RESPONSIBILITY. Children should be harnessed in at all times and should never be left unattended. The child should be clear of moving parts while making adjustments. This vehicle requires regular maintenance by the user. Overloading, incorrect folding and the use of non-approved accessories may damage or break this vehicle. Read the instructions.'

The heading shall be in at least 10 point uppercase (approximately 2.5 mm high) and the remainder of the wording shall be in 10 point lowercase.

19.5 Permanent labels shall be conspicuous and legible and shall be securely attached along all their edges. When treated in accordance with annex W the label shall not be removed using normal hand pressure, it shall show no curling and the marking shall be easily legible.

20 Instructions on use and maintenance

Printed instructions shall be supplied with the vehicle for its safe use, operation and maintenance and shall be headed 'IMPORTANT KEEP FOR FUTURE REFERENCE'. Such instructions shall be in the English language; but this shall not prohibit the additional use of other languages. The instructions shall include the following:

a) the instructions given in clause **19**, expanded as and when necessary;

b) operating instructions for parking devices;

c) instructions for erection and folding procedures, with particular reference to primary and secondary locking devices;

d) instructions for the use and adjustment of the safety harness;

e) reference should be made in the instructions giving the location of the attachment points for a separate safety harness conforming to BS 6684, if required;

f) where applicable instructions on adjustment to compensate for wear;

g) for vehicles with provision for the carriage of goods in a specially designed container, details of such containers and maximum permissible loading shall be given;

h) a note stating that it may be unsafe to use accessories, e.g. child seats, bag hooks, rain covers, etc. other than those approved by the manufacturer or distributor;

i) a statement that it may be unsafe to use replacement parts other than those supplied or approved by the manufacturer or distributor;

j) a note stating that the depth from the top of the mattress to the top of the side of a body at, or at any position within 300 mm from, the harness attachment points, should not be reduced to less than 140 mm when the mattress is in position and that mattresses purchased separately should conform to BS 1877 : Part 10;

k) where applicable, instructions for attaching and detaching a body or seat to and from a chassis;

l) instructions for initial assembly and operational features as applicable;

m) instructions for routine inspection and maintenance, e.g. lubrication, freedom of movement of locking devices and security of essential components;

n) any other information relating to safe usage.

Annexes

Annex A (normative)
Tests for parking devices

A.1 General

Carry out the tests and methods of measurement on a test surface which can be inclined to an angle to the horizontal of $9^{\circ}\ ^{+30'}_{0}$, covered with grade P60 aluminium oxide paper conforming to BS 871.

Before testing commences the unloaded test vehicle with any parking device disengaged shall freely roll down an inclined plane of $4^{\circ}\ ^{+30'}_{0}$ without any external force.

A.2 Test for durability of parking devices

Engage the parking device 200 times using the same position of engagement in each case. Upon completion of the test, inspect the mechanism for signs of visible damage.

A.3 Method for determining the available movement of each wheel

A.3.1 *Method*

Two rectangular stops are required which shall not be less than the height of the centre of the axles.

If the vehicle is fitted with a shopping basket or other similar item intended to be loaded, the tests shall be conducted with a shopping load of at least 2 kg or a load in accordance with the manufacturer's instructions if this is greater, and the test load shall be positioned so that the load is central in the basket.

NOTE. However this may not be the most onerous condition and the test should be repeated without a shopping load, to establish worst case.

A.3.1.1 *Position of test dummy for pushchairs*

Place the test dummy **B.1**. on the seat unit in the fully upright position and as close to the intersection of the seat base to the back as possible. Restrain the test dummy in the harness, up to one in each position that a child can occupy.

If a seat with a reclining back is fitted, recline the backrest and position the test dummy **B.1** centrally between the harness anchorage points such that the projection of the plane normal to the longitudinal axis which passes through the centre of gravity of the dummy intersects the line joining the anchorage points. See figure Q.3.

NOTE. If the seats are of the hammock type determine the seat back to base position by means of the method described in annex P.

A.3.1.2 *Position of test dummy for prams*

Place the test dummy **B.2** horizontally in the pram body so that the centre of the test mass is in line with and midway between the harness anchorage points and restrain the dummy, up to one in each position that a child can occupy.

A.3.1.3 Position the vehicle under test facing forwards on the test surface and apply the parking device. Tilt the platform backwards to an angle of $9^{\circ}\ ^{+30'}_{0}$ to the horizontal so that any resulting movement from the design and manufacture of the interface between the parking device and the vehicle is taken up. Apply the first stop to the upslope side of the wheel and mark its position. Position the second stop 40 mm away from the point where the wheel touches the first stop and remove the first stop. Tilt the platform forwards at an angle of $9^{\circ}\ ^{+30'}_{0}$ to the horizontal and allow the vehicle to settle for not less than 30 s. If the wheel touches the second stop the vehicle has failed the test. If the movement is less than 40 mm note this dimension. Repeat the test on each wheel or carry out the test on all wheels simultaneously.

A.3.1.4 Place the test vehicle on the test surface inclined at $9^{\circ}\ ^{+30'}_{0}$ to the horizontal and engage the parking device. Leave to rest for at least 30 s. Apply a first stop to the down slope side of the wheel, mark its position and remove the stop. Release the parking device and allow the vehicle to move forward, immediately apply the parking device and allow the vehicle to come to rest and settle for not less than 30 s, place the stop in front of the down slope side of the wheel. Measure the distance between the corresponding position of both stops, and divide this distance by two. The reason for this is to derive a dimension that would equate to the distance travelled from the peak of a brake mechanism to where it would be fully engaged. Add the dimensions from the previous test **A.3.1.3** to this dimension. Repeat the test on each wheel, or carry out the test on all wheels simultaneously.

The test is to be repeated as necessary for combinations of dummies and positions, up to one in each position that a child can occupy, as described in **A.3.1.1**.

A.4 Test for effectiveness of parking devices

Load the vehicle as described in **A.3.1.1** or **A.3.1.2** as appropriate. With the parking device applied, place the vehicle on the test surface defined in **A.1** inclined at an angle of $9^{\circ}\ ^{+30'}_{0}$ to the horizontal. Allow the vehicle to move in a controlled manner until any available movement is taken up (i.e. the parking device is preventing movement of each wheel on which it operates). When the vehicle is placed on the slope, set any wheels that are capable of swivelling so that they are parallel to the slope. Release the vehicle and allow it to settle for no less than 30 s.

Carry out the test with the vehicle facing up, down and at 90° to the slope.

Annex B (normative)

Details of test dummies

B.1 A solid 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 ± 2.5) mm from the base, and at 180° to each other around the circumference.

B.2 A solid cylinder (120 ± 5) mm in diameter and (180 ± 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 (90 ± 2.5) mm from the base, and at 180° to each other around the circumference.

Annex C (normative)

Test for security of locking devices

C.1 For the purposes of the tests in this annex, place a dummy as specified in **B.1** in the vehicle at a point midway between the two anchorage points for the safety harness and in line with them or at the position the child would normally occupy. Limit movement of the test dummy to a maximum of 50 mm in any direction, either by the use of straps or cord linking the anchorage points on the test dummy to the anchorage points on the vehicle, or by using the integral harness if fitted. If testing a chassis that is to be sold separately, attach the test body specified in annex L to the chassis in the most onerous condition, if applicable, or otherwise in the normal position. If the vehicle is designed for more than one child use any number of dummies, up to one in each position where there is a harness or anchorage points, in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test, giving due consideration to carrying of goods or accessories if permitted in the manufacturer's instructions.

C.2 With the primary and secondary locking devices applied, i.e. the vehicle in the normal operating position, restrain the wheels to prevent forward or rearward movement by means of fixed floor stops as indicated in figure C.1 and apply a force F to the handle bar or to each handle in the case of separate handles. Use the value of F that is the lesser of the following:

a) the force required to raise all the front wheels or raise all the rear wheels from the floor;

b) 300 N applied to each handle in turn in the case of separate handles or applied to the handle bar unit in the case of a connected handle bar.

Apply the force F in the following directions:

a) horizontally: forward or rearward;

b) vertically: upward or downward; or

c) in any other direction that could cause release or failure of the locking device (see figure C.1).

C.3 Disengage the secondary locking device and repeat the above tests.

NOTE. With some vehicles the placing of the test dummy in the vehicle or the application of the force will cause the secondary locking device to re-engage during the test. If this occurs the test in **C.3** is not carried out.

C.4 Engage the secondary locking device and disengage the primary locking device. Repeat the test specified in **C.2** but use a maximum force of 200 N.

Annex D (normative)

Test for stability of bodies when carried by hand

Place the geometric centre of a dummy or dummies as specified in **B.2** horizontally, over the geometric centre of the base of the body. Movement of the test dummy may be limited if necessary using any convenient means that is of negligible mass. If the body has a hood, this shall be in the down position. If the body has rigid handles, take two equal lengths of (20 ± 1) mm wide webbing and attach the ends of each length to the ends of the rigid handles to form webbing loops. Suspend the body by either the handles on one that has flexible handles or by the webbing loops on one that has rigid handles from a metal tube of (10 ± 1) mm diameter. Measure any movement of the body.

Annex E (normative)

Test for durability of flexible handles

Fully extend one of the handles of the carry cot or perambulator body and move it through an arc of 180° in each direction maintaining full extension (see figure E.1). Repeat the test 500 times in each direction.

Annex F (normative)

Test for strength of handles

F.1 Suspend the body symmetrically about the point of balance, by the handles, from two loops of webbing.

F.2 Distribute evenly a mass of (30 ± 0.3) kg over the base of the body.

F.3 Maintain the test load for 1 h.

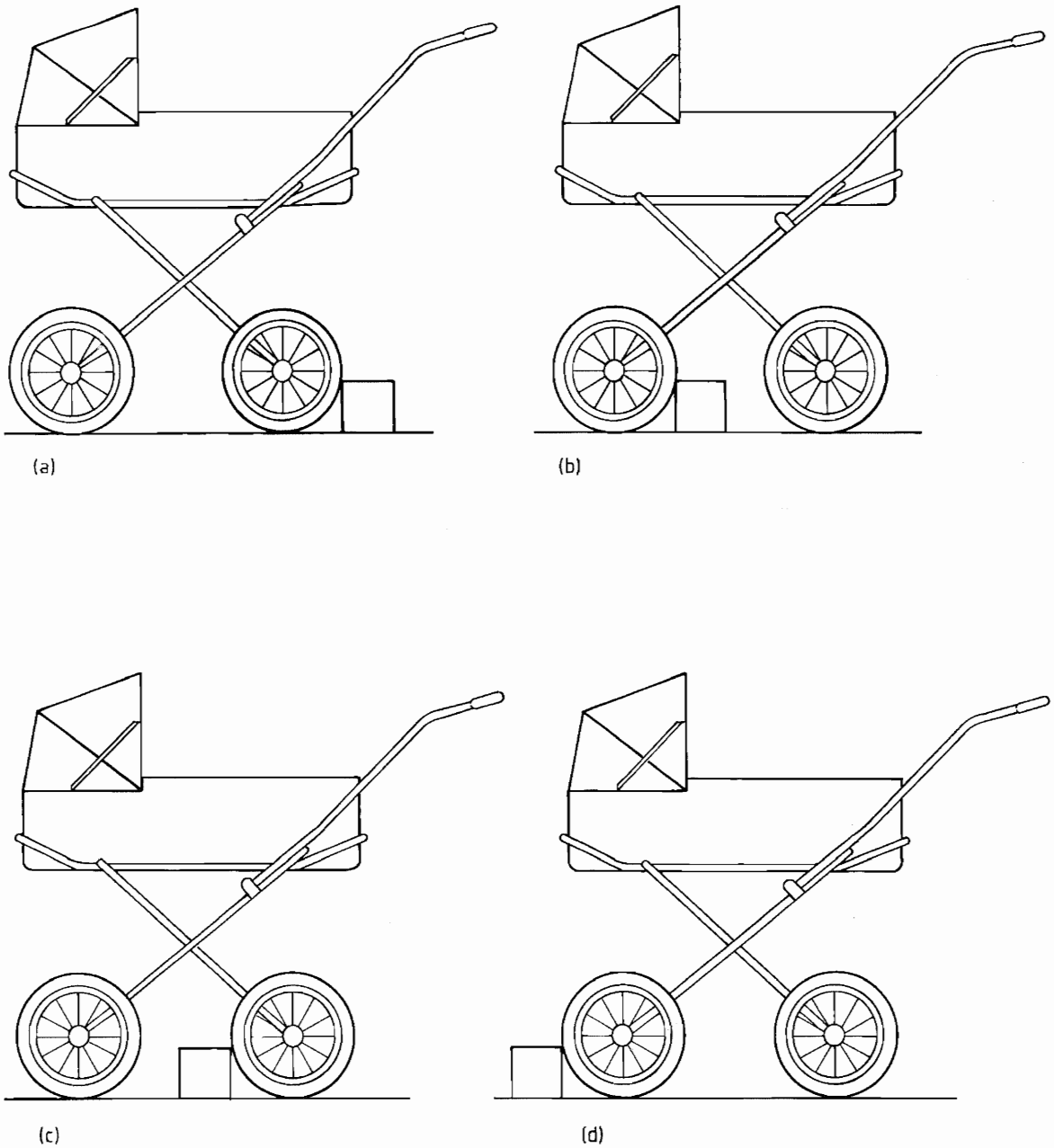


Figure C.1 Test for security of locking devices

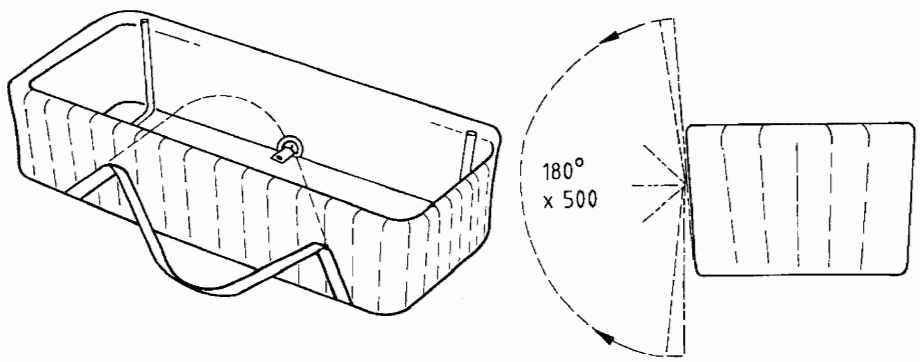


Figure E.1 Test for durability of flexible handles

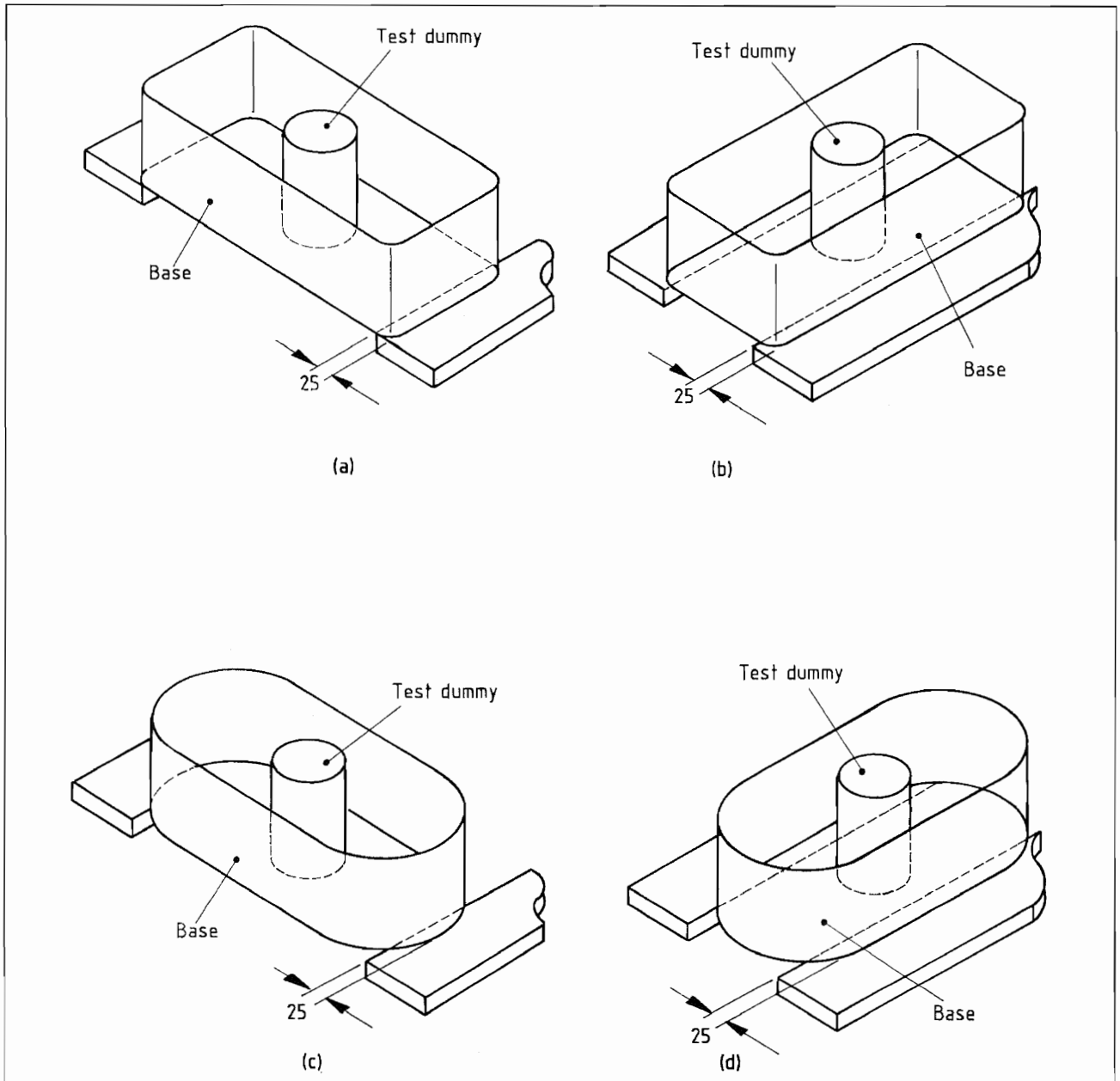
Annex G (normative)

Test for strength of carry cot and perambulator body bases

G.1 Place the body on two support surfaces so that each end overlaps its support by (25 ± 1) mm as shown in figure G.1a) or c). In the case of bodies that are not rectangular in shape the supports shall be positioned (25 ± 1) mm in from the maximum dimension of the body.

G.2 Place a test dummy as specified in **B.2** in the body. If the body is designed for more than one child, place a test dummy in each position that a child could occupy. Leave for a period of 1 h.

G.3 Repeat the test so that the support surfaces support the sides of the body with an overlap on each side of (25 ± 1) mm as shown in figure G.1b) or d). In the case of bodies that are not rectangular in shape the supports shall be positioned (25 ± 1) mm in from the maximum dimension of the body.



All dimensions are in millimetres.

Figure G.1 Test for strength of body bases

Annex H (normative)

Test for strength and durability of attachment devices

H.1 General

Fasten and unfasten one of the devices 50 times in the most onerous condition. If devices of different designs are used subject each variant to this test.

H.2 Body and chassis and seat and chassis assemblies

H.2.1 With the body or seat attached to the chassis in the most onerous condition (or otherwise in accordance with the manufacturer's instructions) and in the horizontal position, secure the test dummy specified in **B.2** in the body or the test dummy specified in **B.1** in the seat at a point midway between the two anchorage points for the safety harness and in line with them or at a point the child would normally occupy (see figure H.1). If the body or seat is designed for more than one child use any number of dummies up to one in each position where there are anchorage points, in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test. Limit movement of the dummy to a maximum of 50 mm in any direction by the use of straps or cords linking the safety harness attachment points to the dummy. Clamp the wheels of the chassis to a pivoted board of rigid material.

H.2.2 Rotate the body and chassis or seat and chassis assembly and dummy through an angle of 100° to the horizontal in a clockwise direction such that the attachment devices alone transmit the test load to the chassis (see figure H.2). Hold the load in this position for a period of 5 min.

H.2.3 Repeat the procedure described in **H.2.2** but rotating the test unit in an anti-clockwise direction (see figure H.3).

H.3 Bodies

H.3.1 With the body attached by only one strap at each end and assembled in the most onerous condition (or otherwise in accordance with the manufacturer's instructions) to a pivoted board of rigid material provided with means of attaching retaining straps and in the horizontal position, secure the test dummy (specified in **B.2**) at a point midway between the two anchorage points for the safety harness and in line with them or at a position the child would normally occupy (see figure H.4). If the body is designed for more than one child, use any number of dummies up to one in each position where there are anchorage points, in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test. Limit movement of the dummy to a maximum of 50 mm in any direction other than upwards by the use of straps or cords linking the safety harness attachment points to the dummy.

H.3.2 Rotate the body or bodies, dummy and support structure through an angle of 100° to the horizontal in a clockwise direction such that the straps alone transmit the test load to the supporting structure (see figure H.5). Hold the load in this position for a period of 5 min.

H.3.3 Repeat the procedure described in **H.3.2** but rotate the test unit in an anti-clockwise direction (see figure H.6).

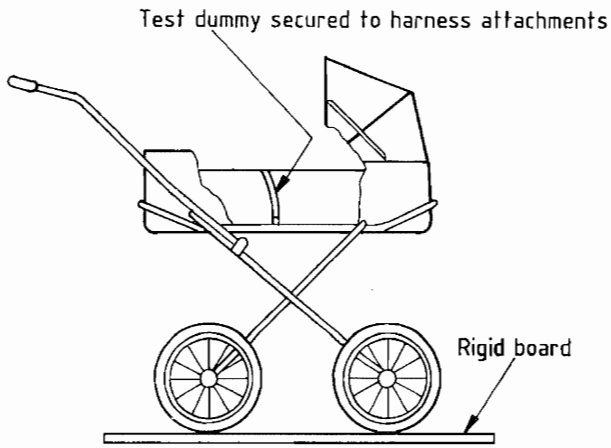
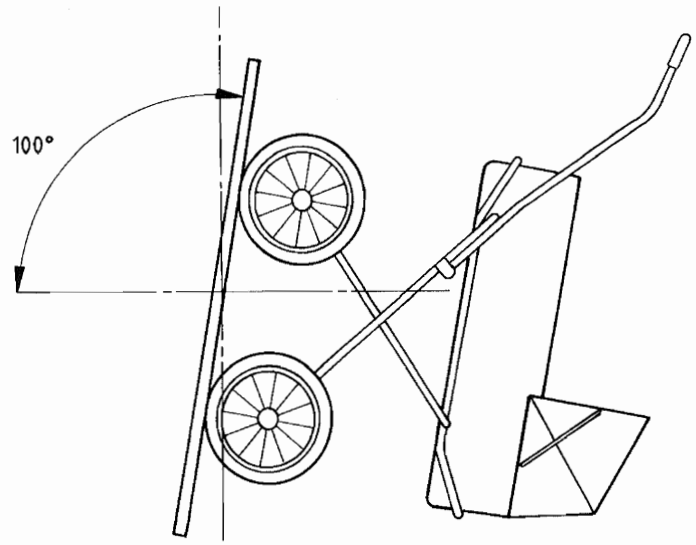
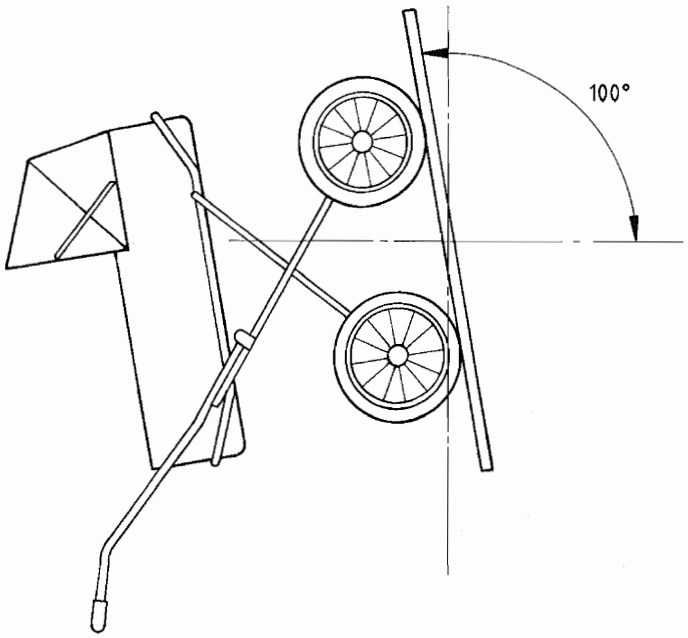


Figure H.1 Test for strength and durability of attachment devices on body and chassis or seat and chassis assemblies



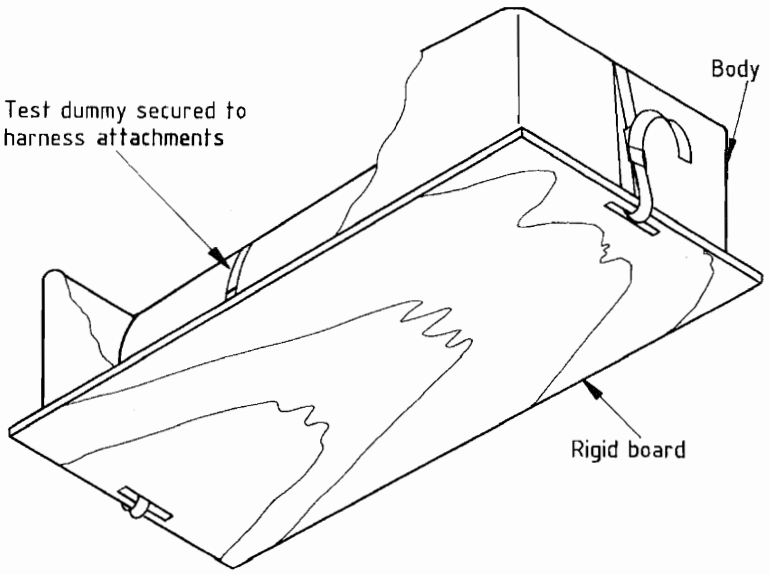
Body and chassis in position described in H.2.2.

Figure H.2 Rotation of body and chassis assembly in clockwise direction



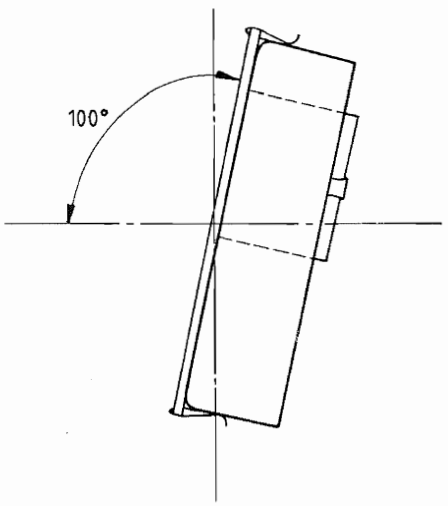
Body and chassis in position described in H.2.3.

Figure H.3 Rotation of body and chassis assembly in anti-clockwise direction



Body retained by one strap at each end of board in horizontal position

Figure H.4 Test for strength and durability of adjustable retaining straps on bodies



Body in position described in H.3.2.

Figure H.5 Rotation of body in clockwise direction

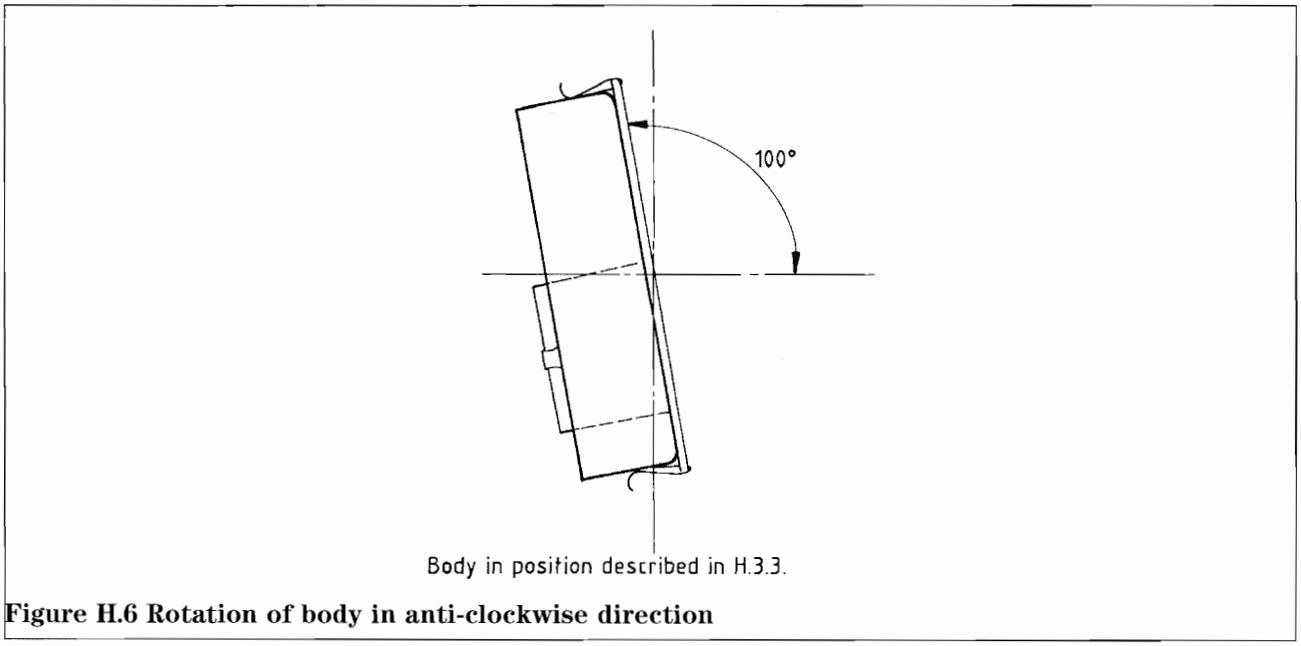


Figure H.6 Rotation of body in anti-clockwise direction

Annex J (normative)
Test for harness attachments and harnesses

Apply a force of 150 N to each harness attachment or harness component. Apply the force gradually and sustain it for 1 min. Apply the force in the most onerous direction.

Apply a force of 300 N to any fastening device.

Annex K (normative)
Test for strength of sides of bodies

With the body turned on its side and supported as near to the ends of the body as practicable, place a steel disc ((120 ± 1) mm diameter and (6 ± 0.25) mm thick) on the geometric centre of the inner surface of the side of the body. Allow the body to settle for not less than 30 s and note dimension X in millimetres, measured along the projection of the centreline of the steel disc (see figure K.1).

Place a mass of $5\,^{+0.005}_{0}$ kg, the diameter of which is not greater than 120 mm, on the steel disc and allow the body to settle for not less than 30 s. Note the new dimension X in millimetres.

Repeat the above procedure for the opposite side of the body.

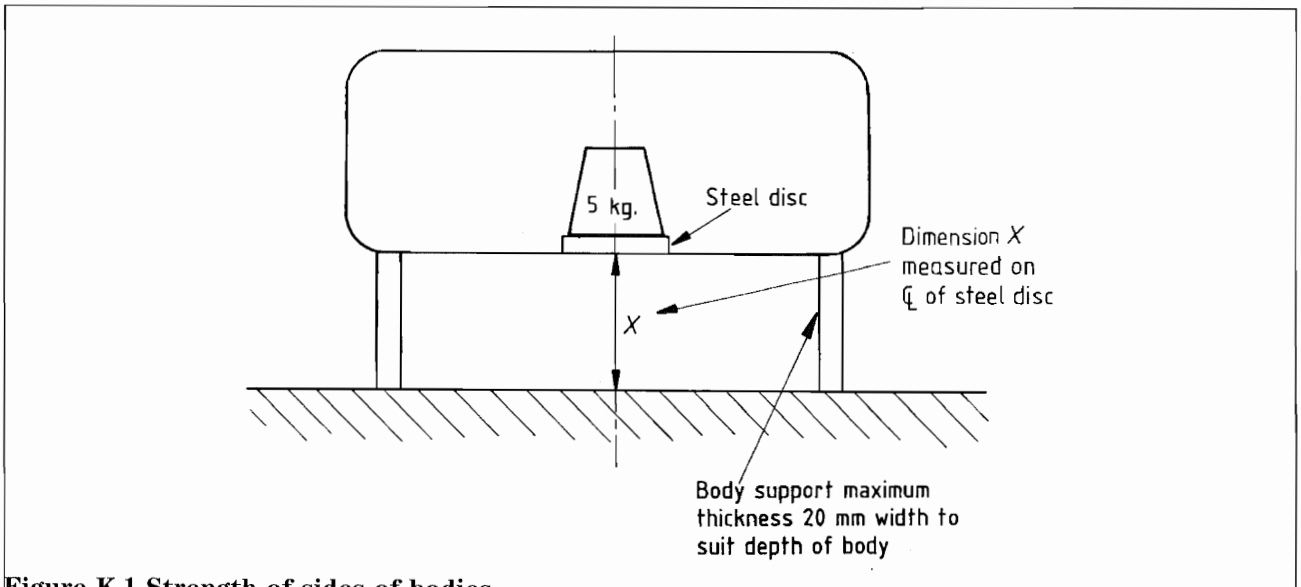


Figure K.1 Strength of sides of bodies

Annex L (normative)

Details of test body

The external dimensions of the test body shall be (735 ± 2) mm long by (315 ± 2) mm wide by (250 ± 2) mm deep (see figure L.1).

The total mass shall be (9 ± 0.25) kg.

Annex M (normative)

Test for strength of chassis

M.1 Attach the seat or body, or attach the test body specified in annex L, to the chassis in the most onerous condition, if applicable, or otherwise in the normal manner. Secure the test dummy (specified in **B.1**) in the body at a point midway between the two anchorage points and in line with them. Limit movement of the dummy by the use of straps or cords linking the safety harness anchorage points to the dummy.

NOTE. Sideways movement of the dummy is acceptable within the confines of the sides of the body providing movement of 50 mm is possible longitudinally either side of the anchorage points.

M.2 Place the chassis, dummy and test body on the pivoted board described in **H.2.1** in the horizontal plane and clamp the wheels of the chassis to the board.

M.3 Rotate the chassis, dummy and test body in a longitudinal plane through an angle of 100° from the horizontal in a clockwise direction. Hold the load in this position for a period of 5 min.

M.4 Repeat the procedure described in **M.3** but rotate the test unit in an anti-clockwise direction.

Annex N (normative)

Test for security of bodies in chassis

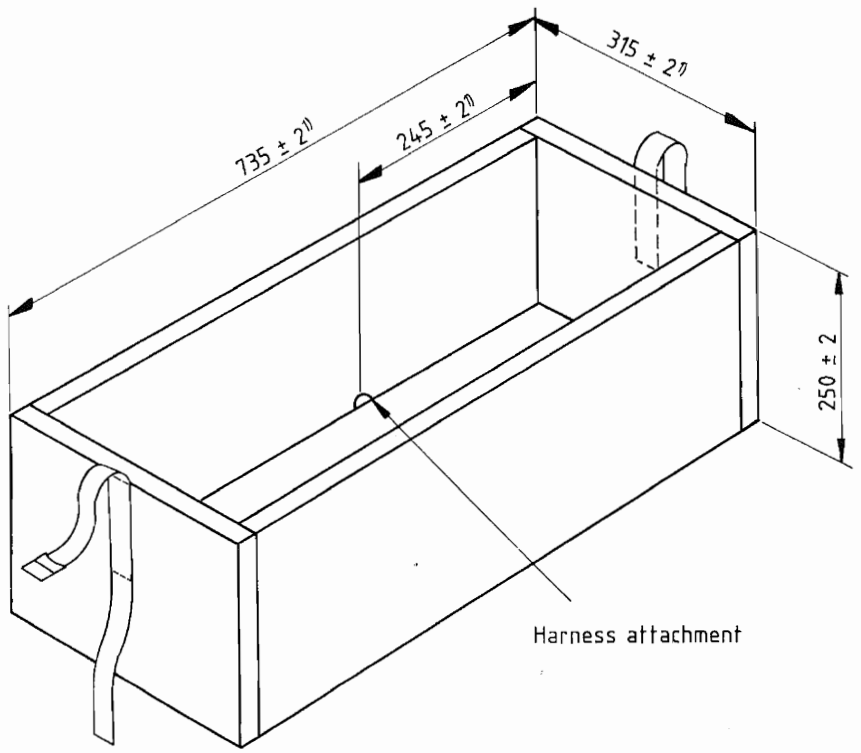
Place a rigid box of length (665 ± 2) mm, width (275 ± 2) mm and height (200 ± 2) mm on the chassis. Move the rigid box within the confines of the chassis.

Annex P (normative)

Measurement of angle of backrest

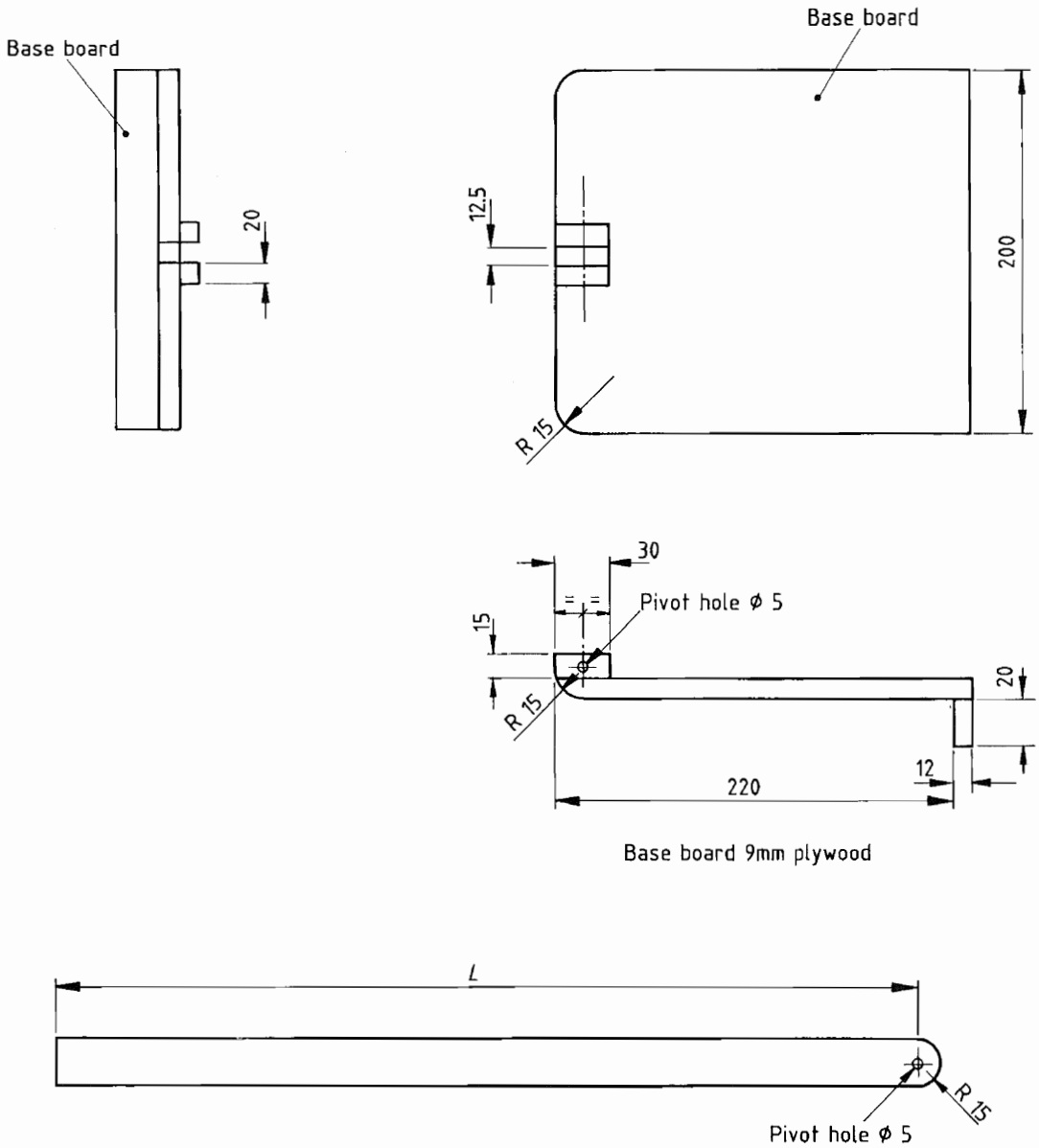
To determine the angle of the seat backrest, place the device shown in figure P.1 in the seat of the vehicle and centrally locate the test dummy (as specified in **B.1**) on the base board as indicated in figure P.2.

Ensure that the 20 mm x 12 mm block is located against the front edge of the seat and that the reclining board is resting firmly against the backrest. Measure the angle between the reclining board and the horizontal as shown in figure P.2.



[1] Measurements to be taken 30 mm above the base of the body.
All dimensions are in millimetres.

Figure L.1 Test body



Reclining board 30 mm × 12 mm hardwood
L is the length of backrest − 30 mm minimum
Pivot pin: 5 mm diameter × 60 mm steel
All dimensions are in millimetres

Figure P.1 Device for measuring angle of backrest

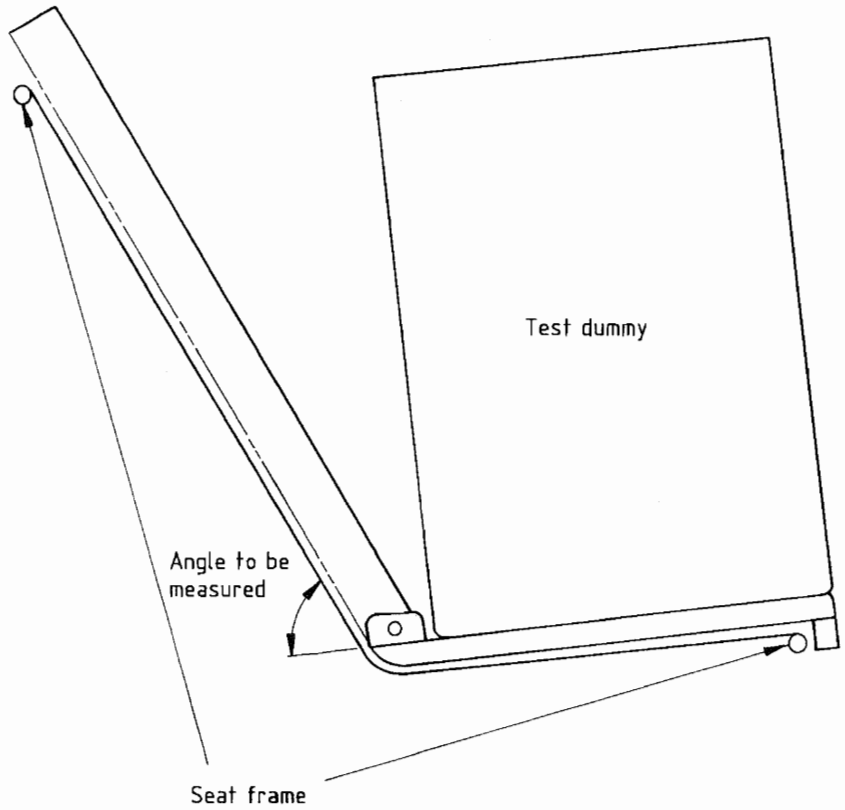


Figure P.2 Measurement of angle of backrest

Annex Q (normative)
Test for stability

Q.1 Seat and chassis assemblies

Adjust the vehicle so that its seat is in the normal upright position then place a dummy (as specified in **B.1**) in the vehicle in a central position a child would normally occupy and with the edge of the base of the dummy in contact with the dividing line between the seat and the backrest. Where necessary, determine the dividing line between the seat and the backrest in accordance with annex P. If the vehicle is designed for more than one child, use any number of dummies, up to one in each position where there is a harness or anchorage points, in a manner that gives the most onerous condition during the test.

Limit the movement of each dummy used in the test to a maximum of 50 mm in any direction by the use of straps or cord linking the anchorage points for the safety harness to the anchorage points on the test dummy. Carry out the test as specified in **Q.3**.

If the points at which a child's safety harness (conforming to BS 6684) can be attached (as specified in **14.1**) are at, or can be extended to, a distance greater than 50 mm from the dividing line between seat and back, determined if necessary using the equipment specified in annex P, then the seat and chassis assembly shall additionally be tested as specified in **Q.3** with the dummy not secured, but positioned as follows.

Position the dummy initially as above and then recline any adjustable seat or backrest as far as possible, ensuring the dummy remains in contact with the backrest as indicated in figures Q.1 or Q.3, and so that the edge of the base of the dummy remains in contact with the dividing line between seat and backrest unless the harness anchorage points are within a 50 mm radius of the seat reference point.

If the harness anchorage points are within 50 mm of the seat reference point, place the test dummy **B.1** on the seat unit in the fully upright position and as close to the intersection of the seat base to the back as possible. Restrain the test dummy in the harness, up to one in each position that a child can occupy.

If a seat with a reclining back is fitted, recline the backrest and position the test dummy **B.1** centrally between the harness anchorage points such that the projection of the plane normal to the longitudinal axis which passes through the centre of gravity of the dummy intersects the line joining the anchorage points. See figure Q.3.

NOTE. If the seats are of the hammock type determine the seat back to base position by means of the method described in annex P.

Q.2 Body and chassis assemblies

Bodies and chassis designed for attachment to specific mating units shall be tested with those units.

Place a dummy (as specified in **B.1**) upright in the body and positioned centrally between each set of harness attachment points. Limit the movement of each dummy used in the test to 50 mm in each direction by the use of straps or cord linking the anchorage points for the safety harness to the anchorage points on the test dummy. Carry out the test as specified in **Q.3**.

Q.3 Test procedure

Adjust or fit any, all or none of the following positions, adjustments or features in any combination that will produce the most onerous conditions for the test.

a) If the vehicle is designed to have variable seating or backrest positions then adjust the seat, seats or backrest.

b) If the vehicle is designed to have variable footrest positions then adjust the footrest or footrests.

c) If the vehicle has any other adjustable feature then adjust the feature.

d) If the vehicle is designed to carry additional goods and loading the vehicle with those goods will produce the most onerous conditions, then load the goods carrying feature with an additional evenly distributed load up to the load permitted by the manufacturer's instructions.

e) If the manufacturer's instructions allow the use of accessories, it is permissible to carry out the test either with or without them.

f) If the vehicle has swivel wheels then adjust their position.

Adjust a sloping platform having a 25 mm × 25 mm rectangular stop to an angle of 12° to the horizontal. Place the vehicle on the platform, firstly facing forwards, then backwards and then sideways, in each case with the wheels in the lower position on the slope resting against the stop.

Carry out the test both with and without the parking device applied.

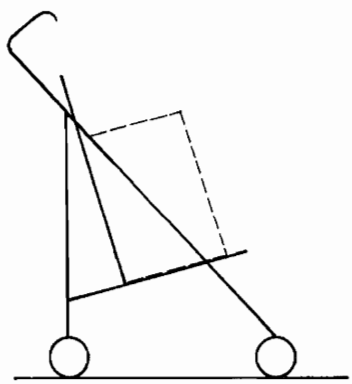


Figure Q.1 Side view of test dummy in seat

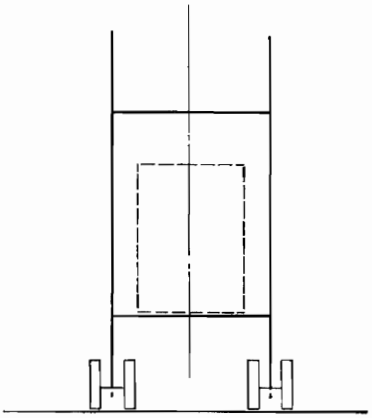
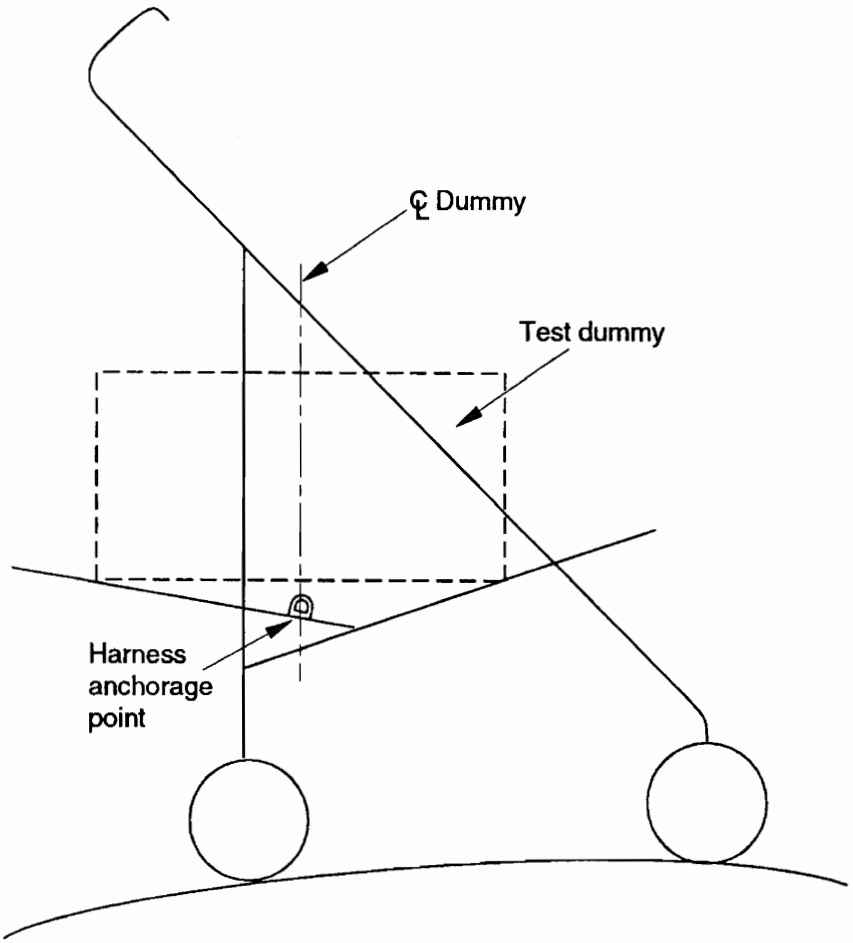


Figure Q.2 Front view of test dummy in seat



NOTE. Test dummy C_L passing through centre of harness anchorage point.

Figure Q.3 Test dummy positioned in seat with reclined backrest

Annex R (normative)
Test for security of wheels

R.1 Non-removable wheels

Attempt to remove each wheel by applying a force of 200 N uniformly to the hub of a single wheel, in the longitudinal direction of the axle, for 2 min and then release the force. Repeat the test on each single wheel of the vehicle.

R.2 Removable wheels Remove and replace a single wheel 200 times. Then carry out the test described in **R.1** on all wheels. In addition to the checks carried out in **R.1**, inspect the locking device on each wheel for damage.

Annex S (normative)
Test for rigidity

Place a bag of dry sand having a mass of $40\,^{+0.5}_{0}$ kg on the seat or the centre of the base of the body of the assembled vehicle. After a period of 6 h has elapsed, examine the vehicle. In the case of vehicles with more than one seat or body, place a bag of dry sand having a mass of $30\,^{+0.5}_{0}$ kg on each seat or body. Position any adjustable backrest or footrest in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test, with due consideration being given to possible variable seating positions and possible carrying of additional children, goods or accessories if permitted in the manufacturer's instructions.

If testing a chassis that is to be sold separately, attach the test body specified in annex L to the chassis in the most onerous condition, if applicable, or otherwise in the normal position.

Annex T (normative)
Endurance test

T.1 Test equipment

The test equipment shall be designed so that the outer wheels of the vehicle come into contact with a ramp (30 ± 1) times per minute. The ramps shall be made of aluminium and a section of a ramp is shown in figure T.1.

The ramps shall be mounted on an endless belt which shall be supported at the point of contact between the ramps and the wheels.

The ramps shall be so positioned that the wheels on each side of the vehicle are lifted alternately. In the case of vehicles having additional wheels positioned between the outer wheels, the wheels are lifted firstly left hand side and centre together and secondly right hand side and centre together; an example of a suitable means of achieving this is illustrated in figure T.2.

The vehicle shall be retained in position on the belt by two flexible loops mounted as appropriate to the handle design of the vehicle as illustrated in figure T.3 and which are capable of adjustment across the width of the test rig to suit various designs of product.

The loops shall be placed on the two outer handles when testing vehicles with additional handles positioned between the two outer ones.

It is permissible for the rig to incorporate adjustable guide rails which may contact the vehicle under test to assist in the retention of the vehicle on the test rig. There shall be a gap of at least 5 mm between the guide rail and the side of the vehicle to allow some freedom of movement. The guide rails shall either be manufactured from or faced with material having a low coefficient of friction (e.g. polyamide plastics).

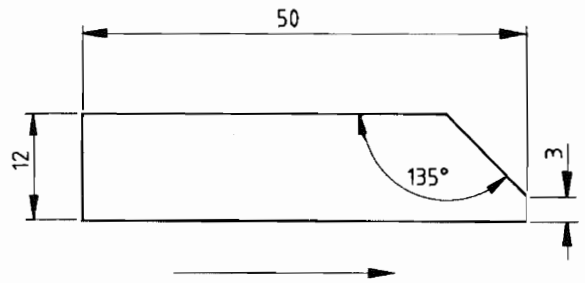
T.2 Test method

Measure the amount of angular displacement of the wheels. For the purposes of the following tests, place a dummy as specified in **B.1** in the vehicle at a point midway between the two anchorage points for the safety harness and in line with them or at the position the child would normally occupy. Limit movement of the test dummy to a maximum of 50 mm in any direction by the use of straps or cord linking the anchorage points on the test dummy to the anchorage points on the vehicle. If testing a chassis that is to be sold separately, attach the test body specified in annex L to the chassis in the most onerous condition, if applicable, or otherwise in the normal position. If the vehicle is designed for more than one child use any number of dummies up to one in each position where there is a harness or anchorage points, in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test. Position any adjustable backrest or footrest so as to give the most onerous conditions under test, giving due consideration to possible variable seating positions and possible carrying of goods or accessories if permitted in the manufacturer's instructions[2)].

Place the vehicle on the test equipment and retain it in position with its wheels in line with the ramps. Operate the test equipment so that the surface speed is (1.4 ± 0.1) m/s (approximately 5 km/h) for a total of 64 h.

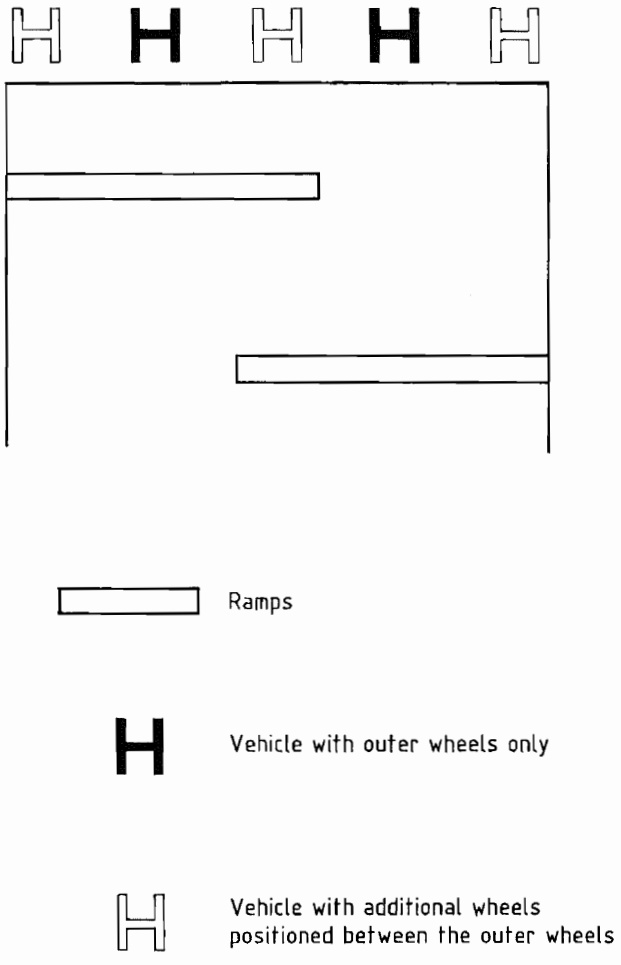
At the end of the test, measure the amount of wheel rock of each single wheel at the same point on the perimeter of the wheel at which the measurements were taken at the beginning of the test. Visually examine the vehicle for signs of structural failure.

[2)] During the test, damage to the seat fabric may occur as a result of abrasion by the test dummy. This should be ignored for the purposes of the test and can be minimized by using any convenient means that is of negligible mass. If the seat damage is not caused by abrasion it constitutes a structural failure.



All linear dimensions are in millimetres.

Figure T.1 Section of ramp



All linear dimensions are in millimetres.

Figure T.2 Diagram showing position of ramps on belt relative to wheels

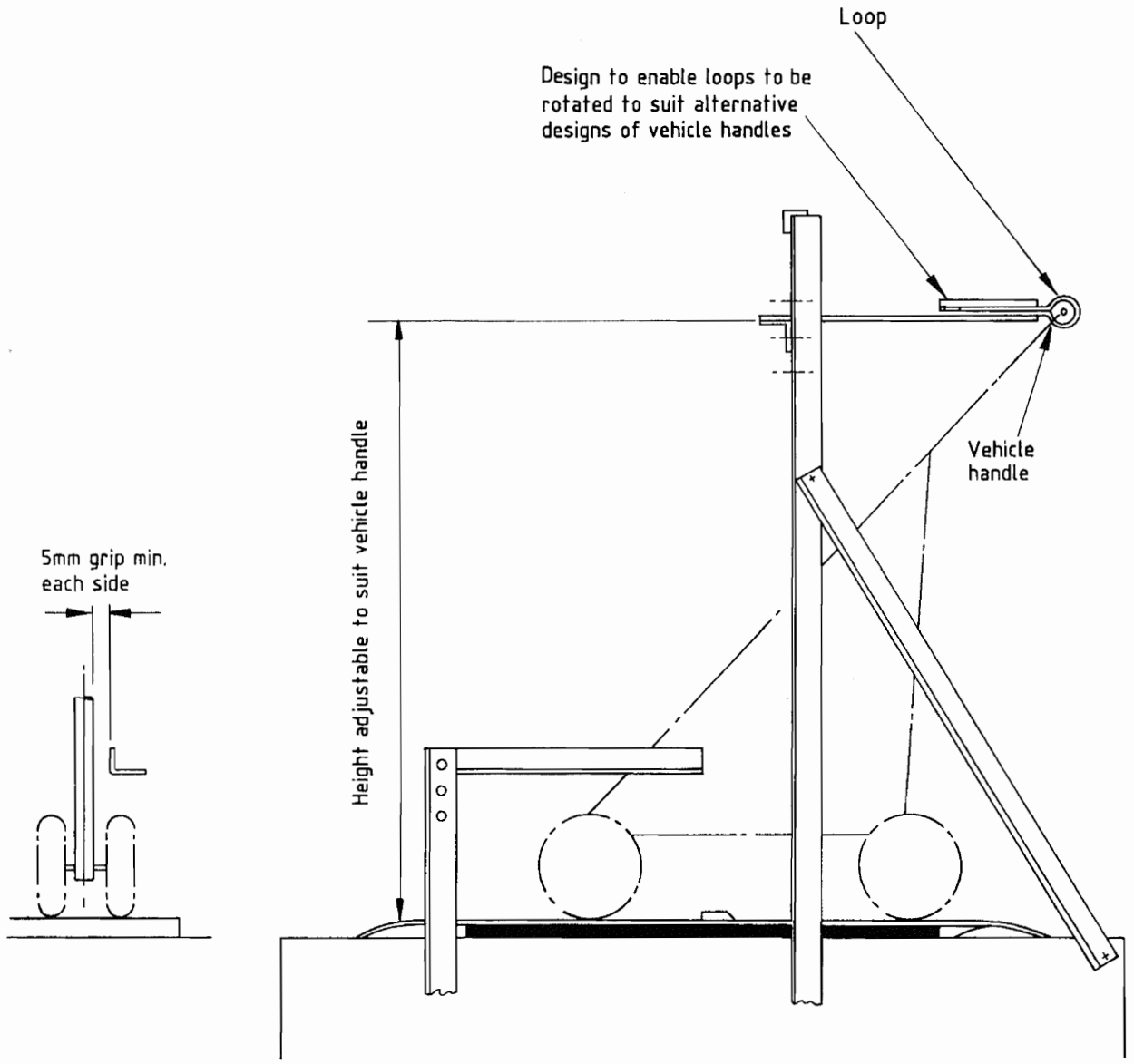


Figure T.3 Clamping mechanism for retaining vehicle on test rig

Annex U (normative)
Handle strength test

U.1 Place a dummy as specified in **B.1** in the vehicle at a point midway between the two anchorage points for the safety harness and in line with them or at the position the child would normally occupy. Limit movement of the test dummy by using any convenient means that is of negligible mass. If testing a chassis that is to be sold separately, attach the test body specified in annex L to the chassis in the most onerous condition, if applicable, or otherwise in the normal position. If the vehicle is designed for more than one child use any number of dummies, up to one in each position where there are anchorage points, in a manner that gives the most onerous condition for the test. Position any adjustable backrest or footrest so as to give the most onerous conditions under test, giving due consideration to possible carrying of goods or accessories if permitted in the manufacturer's instructions. Place the vehicle on a firm level floor.

U.2 Alternately raise and lower the handle or handles so that the rear wheels and front wheels in turn are raised (120 ± 10) mm, measured at the start of the test, from the floor and then lowered in a controlled manner without pause (see figure U.1).

Carry out the test for 3000 cycles at a frequency of (15 ± 1) cycles per minute.

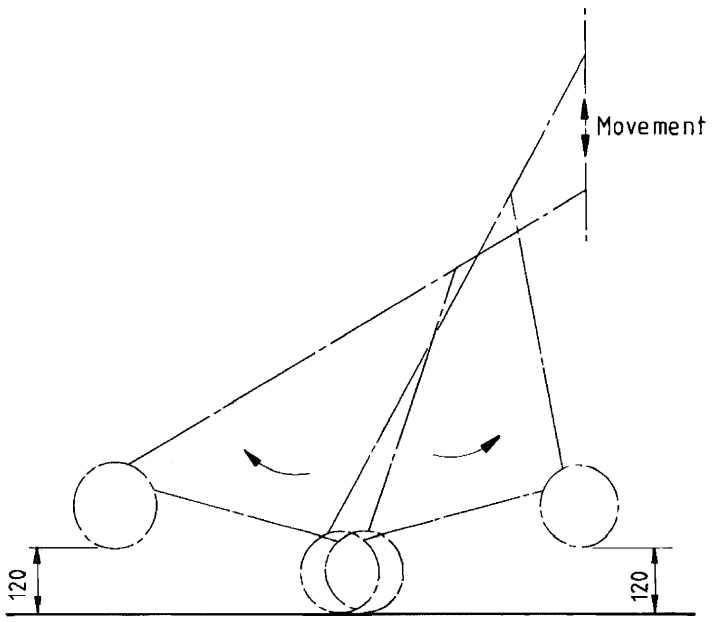
Annex V (normative)
Impact test

V.1 Test equipment

A rigid, smooth flat surface inclined at an angle of 10° from the horizontal with a steel channel stop 150 mm × 75 mm in section and a minimum thickness of 6 mm secured on the bottom of the inclined surface at an angle of $90° \pm 30'$ to the slope as shown in figure V.1.

V.2 Method of test

For the purposes of the following test, place a dummy as specified in **B.1** in the vehicle at a point midway between the two anchorage points and in line with them or at the position the child would normally occupy. Limit movement of the test dummy to a maximum of 50 mm in any direction by the use of straps or cord linking the anchorage points on the test dummy to the anchorage points on the vehicle. If testing a chassis that is to be sold separately, attach the test body specified in annex L to the chassis in the most onerous condition, if applicable, or otherwise in the normal position. If the vehicle is designed for more than one child, use any harness or anchorage points in a manner that, in the opinion of the test laboratory, is likely to give the poorest performance during the test. Position any adjustable backrest or footrest so as to give the most onerous conditions under test, giving due consideration to possible variable seating positions and possible carrying of goods or accessories if permitted in the manufacturer's instructions.



All dimensions are in millimetres.

Figure U.1 Handle strength test

Place the vehicle on the inclined surface and hold it in position so that its front wheels are 1 m $^{+10}_{0}$ mm from the steel channel stop. Allow the vehicle to run freely down the inclined surface so that it strikes the stop with the front wheel or wheels. The vehicle shall travel one full metre in distance down the slope. The vehicle shall be restrained from tipping beyond its point of balance after the wheels have hit the stop. Carry out this procedure 10 times and then repeat it a further 10 times with the vehicle facing in the reverse direction.

Release the primary locking device and repeat the test 5 times with the vehicle facing in the forward direction and 5 times with the vehicle facing in the reverse direction.

Annex W (normative)

Test for durability of marking

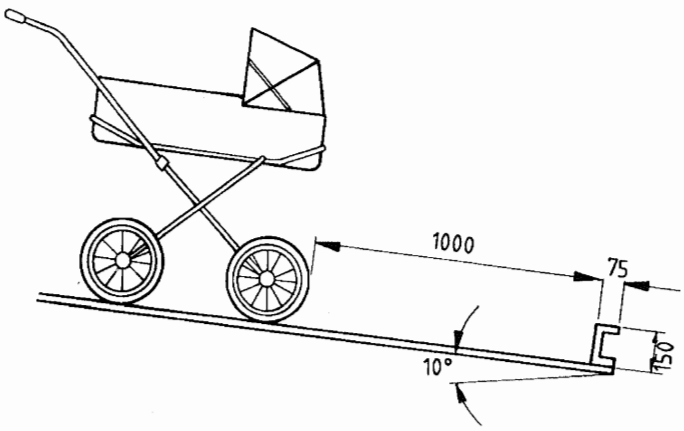
Rub the label by hand for 15 s with a piece of cloth soaked with water. Allow the label to dry and then rub for 15 s with a piece of cloth soaked with concentrated liquid detergent having the following active ingredients[3)].

Sodium dodecyl benzene sulphonate	25 %;
Sodium dodecyl ether sulfate	5 %;
Sodium xylene sulphonate	3 %.

Annex X (normative)

Test for maximum seat recline

Place the test dummy **B.1**. in the pushchair at the position the child would normally occupy and with the edge of the base of the dummy in contact with the dividing line between seat and backrest. Where necessary, determine the dividing line between the seat and the backrest using the method described in annex P. Adjust the seat unit to the most reclined position possible. Release the seat locking devices and observe whether the longer side of the test dummy moves past the horizontal.



All dimensions are in millimetres.

Figure V.1 Arrangement of channel stop and vehicle on slope

[3)] For information on the availability of a suitable detergent, apply to Enquiry Section, British Standards Institution, 389 Chiswick High Road, London W4 4AL enclosing a stamped addressed envelope for reply.

blank

List of references (see clause 2)

Normative references

BSI publications

BRITISH STANDARDS INSTITUTION, London

BS 871 : 1981	*Specification for abrasive papers and cloths*
BS 1006 : 1990	*Methods of test for colour fastness of textiles and leather*
BS 1877 :	*Domestic bedding*
BS 1877 : Part 10 : 1982	*Specification for mattresses and bumpers for children's cots, perambulators and similar domestic articles*
BS 3254 :	*Seat belt assemblies for road vehicles*
BS 3254 : Part 2 : 1991	*Specification for restraining devices for children*
BS 5665 :	*Safety of toys*
BS 5665 : Part 1 : 1989	*Specification for mechanical and physical properties*
BS 6684 : 1989	*Specification for safety harnesses (including detachable walking reins) for restraining children when in perambulators (baby carriages), pushchairs and high chairs and when walking*
BS AU 202a : 1985	*Specification for rearward-facing restraining devices for infants for use in road vehicles*
BS EN 71-3 : 1995	*Specification for migration of certain elements*

Other references

ECE 44 : 1981	*Approval of restraint devices for child occupants of power driven vehicles*

Informative references

BSI publications

BRITISH STANDARDS INSTITUTION, London

BS 4139 : 1967[4)]	*Specification for safety requirements for perambulators (baby carriages)*
BS 4792 : 1984[4)]	*Specification for safety requirements for pushchairs*
BS 7551 : 1992	*Specification for safety requirements for carry cots and similar handled products and stands*

[4)] Referred to in the foreword only.

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