BRITISH STANDARD

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13210:2004

Child use and care articles — Children's harnesses, reins and similar type articles — Safety requirements and test methods

The European Standard EN 13210:2004 has the status of a British Standard

ICS 97.190

National foreword

This British Standard is the official English language version of EN 13210:2004.

The UK participation in its preparation was entrusted to Technical Committee CW/41, Child use and care articles, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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

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Foreword

This document (EN 13210:2004) 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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This document specifies the minimum safety requirements and test methods for harnesses, comprising strap assemblies, and body type garments for restraining children up to 4 years of age. These products are for use in child use and care articles, which are fitted with specified attachment points. These products may be provided with a detachable rein for use when the child is walking. These products may incorporate storage pockets e.g. back or waist packs.

This document specifies the minimum safety requirements and test methods for restraint systems, designed to fit around a child's wrist for use when walking.

This document does not apply to restraint systems, permanently fitted as an integral feature of child use and care articles.

This document does not apply to restraint systems intended for children with special needs.

This document does not apply to restraint systems for use in motorised and power driven vehicles.

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 — Mechanical and physical properties.*

EN 71-3, *Safety of toys — Migration of certain elements.*

EN 1811, *Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.*

EN 12472, *Method for the simulation of wear and corrosion for the detection of nickel release from coated items.*

3 Terms and definitions

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

3.1
harness
product designed to fit around a child's torso and intended to restrain the child, when used with specific attachment points on a child use and care article or with a walking rein. These products can be a torso type strap assembly 3.2, a body type garment assembly 3.3 or any combination of both types

3.2
torso type strap assembly
strap assembly comprising a waist belt and shoulder straps (see Figure 1)

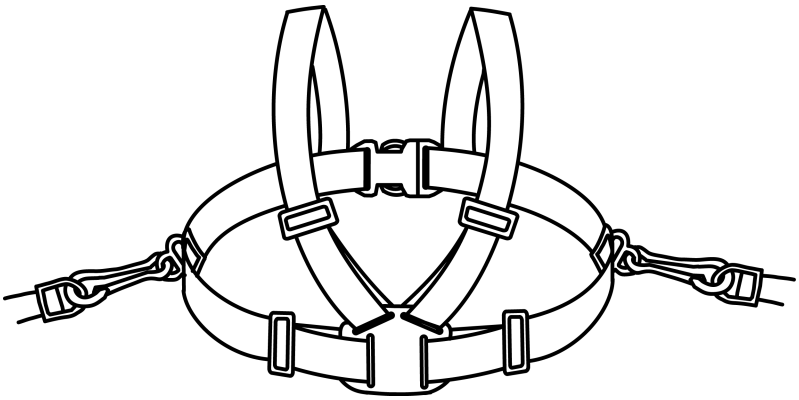


Figure 1 — Example of torso type strap assembly

3.3
body type garment assembly
assembly fitted around the child's body consisting of fabric materials (see Figure 2)

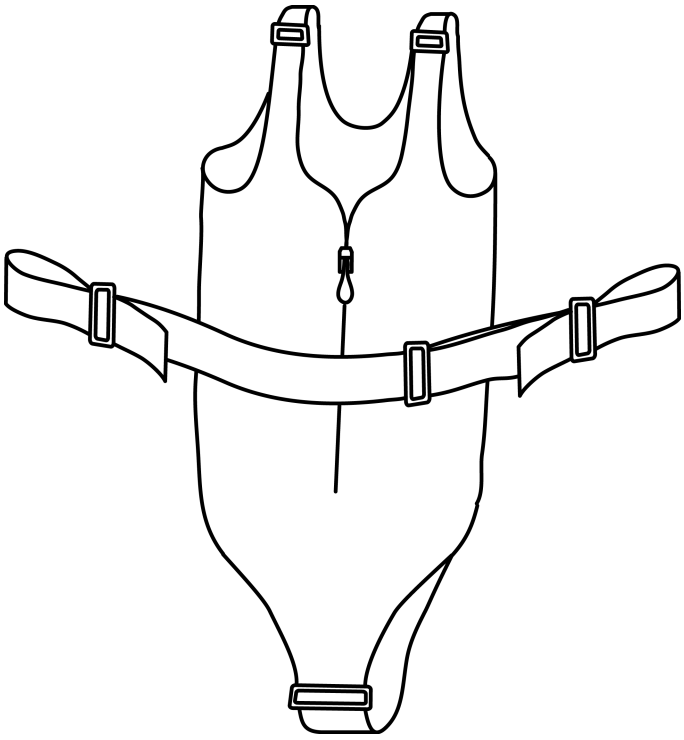


Figure 2 — Example of body garment type assembly

3.4
waist belt
part of the harness, which passes around the waist or the body of the child

3.5
shoulder straps
parts of the harness which pass over the shoulders of the child

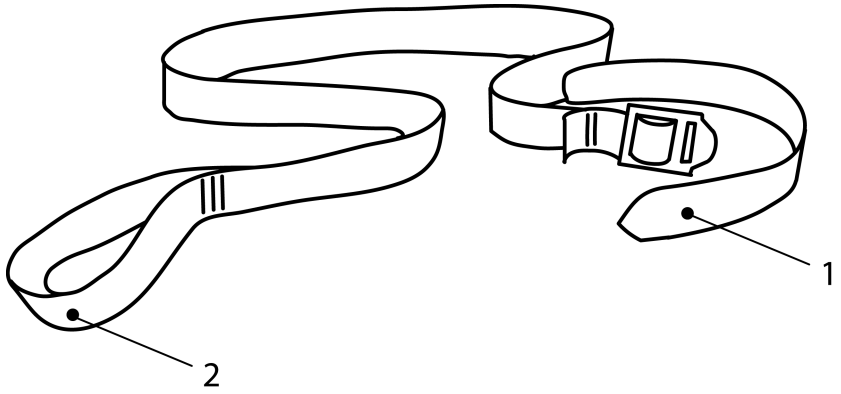
3.6
attachment straps
adjustable straps fitted with appropriate fastenings e.g. buckles and hooks, which are used to secure the harness to the specified harness attachment points of a child use and care article

3.7
walking rein
strap attached to a harness or to a single waist belt to be held by the carer, comprising either:

— a leading rein which comprises a single continuous strap which is attached at a single point on the waist belt or

— a training rein which comprises a single continuous strap which is attached to both sides of the waist belt

3.8
wrist type walking rein
assembly comprising a single strap with a loop for securing to a child's wrist at one end and a wrist loop or a hand grip for use by the carer at the other end (see Figure 3)



Key

1 Child wrist loop
2 Carers wrist loop or hand grip

Figure 3 — Example of wrist type rein

4 Materials

4.1 Migration of certain elements

Plastic, any coatings of paint, varnish, lacquer or similar substances and parts consisting of dyed materials, leather and textiles shall be made using products, which in their soluble compound shall not exceed the following amounts.

— 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

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

The test procedure shall be as defined in EN 71-3.

4.2 Total content and migration of nickel

4.2.1 Requirements

When tested in accordance with 4.2.2.1, the migration of nickel shall not exceed 0,5 µg/cm^2/wk.

When tested in accordance with 4.2.2.2, migration of nickel shall not exceed 0,5 µg/cm^2/wk.

4.2.2 Test methods to be used

4.2.2.1 EN 1811 - Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin.

4.2.2.2 EN 12472 - Method for the simulation of wear and corrosion for the detection of nickel from coated items (followed by EN 1811).

5 General test conditions

5.1 Tolerances

Unless stated otherwise, all forces, masses and dimensions shall have tolerances as follows:

— forces : ± 5 %

— masses : ± 0,5 %

— dimensions : ± 0,5 mm

5.2 Conditioning

Before testing, the article shall be washed and dried twice in accordance with the manufacturer's instructions.

Where no instructions are given the article shall be immersed in water at (20 ± 3) °C for (30 ± 2) s and shall be allowed to dry for 24 h at (20 ± 5) °C before testing.

6 Construction

6.1 Edges, projections and corners

When assembled for use all exposed edges, projections and corners of metal, wooden and moulded plastic components shall be rounded, chamfered and free from burrs.

6.2 Small parts

When tested in accordance with EN 71-1, grippability, torque test, and tensile test, any component or part of a component that is removed, whether intended to be removed without the use of a tool or not, should not fit wholly within the small parts cylinder specified in EN 71-1.

6.3 Adhesive labels/decals

6.3.1 Requirements

When tested in accordance with 6.3.2 soaking test and EN 71-1 tension test and torsion test, adhesive labels/decals shall not become detached or loosened from the harness or produce any parts which fit entirely in the small parts cylinder specified in EN 71-1.

6.3.2 Soaking test

Immerse the part of the product to be tested in demineralised water at room temperature for 30 min.

6.4 Cords, ribbons and parts used ties

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

This requirement does not apply to free ends of torso type strap assemblies, attachment straps, and walking reins.

6.5 Shoulder straps

6.5.1 Shoulder straps for torso type strap assembly harnesses

The minimum width of the shoulder straps shall be 20 mm.

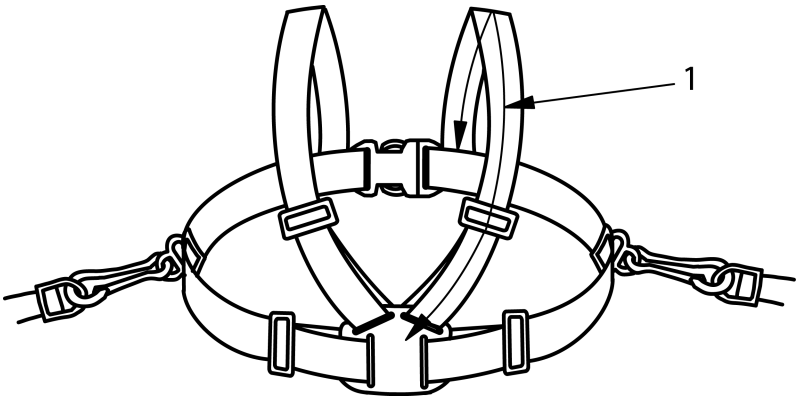
Each shoulder strap shall be adjustable.

If the harness is suitable for use from birth it shall be possible to adjust the length of each shoulder strap to 250 mm when measured from the top edge of the waist belt at the front to the top edge of the waist belt at the rear (see Figure 4).

If the harness is suitable for use from 6 months it shall be possible to adjust the length of each shoulder strap to 310 mm when measured from the top edge of the waist belt at the front to the top edge of the waist belt at the rear (see Figure 4).

Where the waist belt is not of uniform height along the top edge, the measurement of each shoulder strap shall be taken from the lowest top edge projected to both front and rear.

The shoulder straps shall not be crossed diagonally at the front.



Key

1 Length of shoulder strap

Figure 4 — Measurement of harness with shoulder straps that do not cross

In order to retain the harness on a child's torso, shoulder straps shall comply with the following requirements:

a) if the shoulder straps run parallel to each other, the fixing points on the waist belt shall be such that they cannot be moved more than 100 mm apart if the product is to be used from birth or 120 mm apart if the product is to be used from 6 months, when measured between the inside edges of the shoulder straps at the fixing points at both the front and rear;

b) if the shoulder straps are crossed diagonally at the back, the fixing points on the front of the waist belt shall be such that they cannot be moved more than 120 mm apart when measured between the inside edge of the shoulder straps on the front of the waist belt;

c) if a cross brace is fitted, it shall not be fixed to the front or capable of being adjusted to the front of the product.

6.5.2 Shoulder straps for body type garment assembly

If the body type garment has shoulder straps they shall be a maximum of 100 mm apart if the product is to be used from birth and a maximum of 120 mm apart if the product is to be used from 6 months. The measurement shall be taken between the inside edges of the shoulder straps at the top of the shoulder when the product is laid flat.

6.6 Waist belt

The minimum width of the waist belt shall be 20 mm.

Circumference of the waist belt shall be adjustable.

If the product is to be used from birth it shall be possible to adjust the circumference to 300 mm.

If the product is to be used from 6 months it shall be possible to adjust the circumference to 380 mm.

6.7 Attachment straps

If attachment straps are provided with the harness for use with other child use and care articles they shall be attached or be capable of being attached to both sides of the waist belt or body type garment.

The attachment straps shall be adjustable.

The distance between the waist belt and the point of attachment on the child use and care article shall be capable of adjustment to 140 mm when attached according to the manufacturers instructions.

6.8 Walking rein

6.8.1 Leading rein

The maximum length of the leading rein between the inside of the waist belt and the end of the leading rein, including the carer's attachment adjusted to its most onerous position (if applicable) shall be 1 200 mm when a force of 200 N is applied.

6.8.2 Training rein

The maximum length of the training rein between the inside of the waist belt at the attachment point on one side and the inside of the waist belt to the attachment point on the other side shall be 1 200 mm when a force of 200 N applied.

The minimum horizontal distance between the attachment points at the point where the rein joins the waist belt shall be 120 mm.

6.9 Wrist type walking rein

6.9.1 Length

The maximum length of the wrist type walking rein, including wrist loops adjusted to there most onerous position (if applicable), shall be 1 200 mm when a force of 200 N is applied.

6.9.2 Child's wrist loop

The child's wrist loop shall have a circumference capable of adjustment to 100 mm.

The minimum width shall be 20 mm.

6.9.3 Carer's hand/ wrist loop

The carer's hand/wrist loop shall have a minimum width of 20 mm and shall comply with one of the following:

a) a fixed sized loop shall have a minimum circumference of 300 mm when a force of 30 N is applied, or

b) an adjustable loop with a facility for quick release in an emergency.

NOTE The following examples indicate facilities for quick release in an emergency:

- touch and close fastening strips;

- single action press studs.

Slide adjusters and buckles are not considered as suitable for quick release in an emergency.

7 Performance

7.1 Slippage

7.1.1 Requirement

The maximum slippage of the adjustment mechanisms shall be 20 mm when tested in accordance with 7.1.2.

7.1.2 Slippage test

A new product may be used for this test.

For the purpose of the test use approximately 125 mm of the harness on either side of the adjustment mechanism. Fix one end of the test piece into one jaw of a dynamometer and the other end into another jaw. The distance between the jaws shall be 200 mm.

Draw a line across the whole width of the test piece flush with each jaw.

Set the jaw movement speed to (500 ± 10) mm/min. Reduce the distance between the jaws to 150 mm. Subject the test piece to a tensile force until the latter reaches (100 ± 10) N, then return the distance between the jaws to 150 mm.

Repeat the cycle another 9 times.

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

7.2 Dynamic strength

7.2.1 Requirements

After testing in accordance with 7.2.3 the harness with attachment straps, its components, stitching or rivets shall not be broken or damaged and shall continue to function as intended.

After testing in accordance with 7.2.4 the harness with leading rein, its components, stitching or rivets shall not be broken or damaged and shall continue to function as intended.

After testing in accordance with 7.2.5 the harness with training rein, its components, stitching or rivets shall not be broken or damaged and shall continue to function as intended.

After testing in accordance with 7.2.6 the wrist rein, its components, stitching or rivets shall not be broken or damaged and shall continue to function as intended.

7.2.2 Test equipment

7.2.2.1 Test frame

A rigid test frame, comprising on its upper part a height adjustable hook or eye, in the centre of which a dummy or shackle may be attached (see Figure 5).

The frame shall be fitted with a release mechanism, such as a removable pin, for releasing the dynamic load.

7.2.2.2 Test dummy

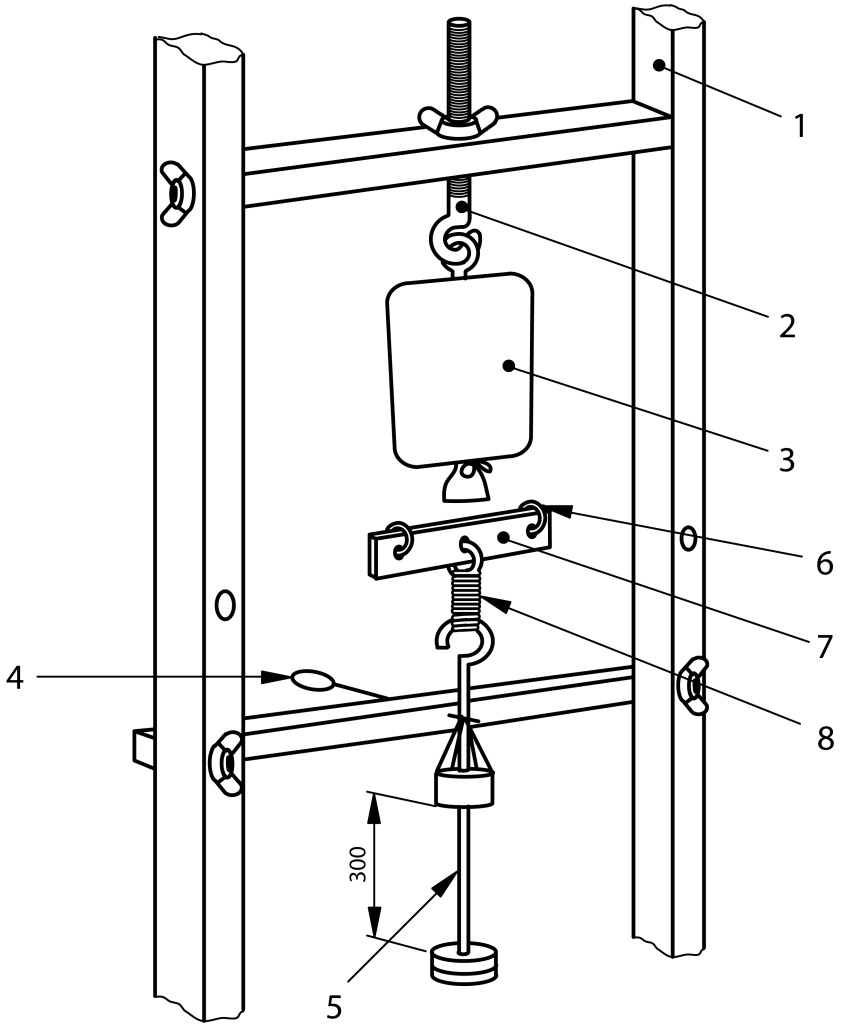
A dummy made of a bag 300 mm wide and 470 mm long when flat, filled with dry compacted sand, so that the whole constitutes a rigid form, see Figure 5. Inside the closed end of the bag is a rectangular metal bar, 260 mm long, 25 mm high and 6 mm wide, connected at the centre of its length to an eyebolt passing through an eyelet in the bag. The neck of the bag shall retain a firm outline.

7.2.2.3 Test mass(es)

An assembly that includes a suspension bar, shackles, spring, static mass and dynamic mass. The total mass of this assembly shall be (20 $\pm$ 0,1) kg. The dynamic mass shall be (13 $\pm$ 0,05) kg and be capable of falling freely from a height of 300 mm as shown in Figure 5.

The height adjustable hook or eye is used to adjust the drop height of the dynamic mass for the different combinations of harness and reins.

Dimensions in millimetres



Key

1 Test frame
2 Adjustable hook/eye
3 Test dummy/shackle
4 Release mechanism
5 Static and dynamic test mass
6 Shackles
7 Suspension bar
8 Spring

Figure 5 — Dynamic strength test equipment

All shackles shall have a minimum diameter of 10 mm at the rounded.

7.2.2.4 Suspension bar

A metal suspension bar with a circular hole drilled in the centre and a circular hole drilled 100 mm either side of the centre.

7.2.2.5 Spring

A spring with the following characteristics shall be used to support the static and dynamic mass from the suspension bar:

— stiffness 28 000 N/M ± 10 %

— diameter of wire 3 mm

— external diameter 16 mm

— length without load 45 mm ± 5 mm

7.2.3 Test method for harness with attachment straps

Fit a conditioned but untested harness to the test dummy according to 7.2.2.2 so that the waist belt is horizontal and in contact with the dummy around its circumference without constricting the dummy. Secure an attachment strap to the shackle at each end of the suspension bar in accordance with the manufacturers instructions as if attaching to a child use and care article. Ensure that the length of each attachment strap is equal and approximately in the middle of the range of adjustment. Fit the attachment straps to the harness.

Dimensions in millimetres

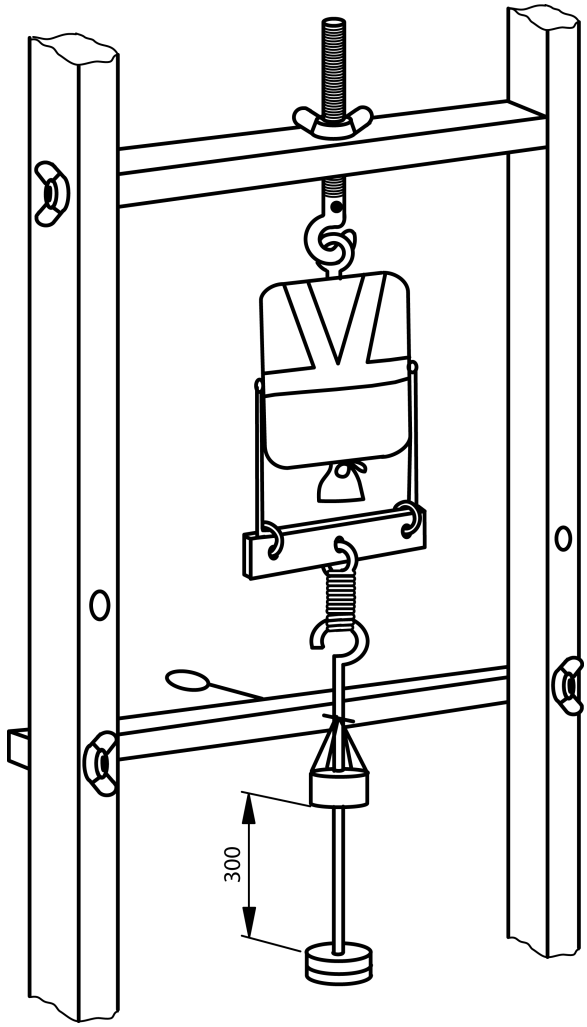


Figure 6 — Harness with attachment straps

Suspend the dynamic load from the release mechanism and then suspend the static load from the spring attached to the suspension bar.

Adjust the height of the dummy so that the dynamic load drop distance is (300 ± 2) mm (see Figure 6).

Release the dynamic load.

Repeat the release of the dynamic load for a total of 5 times. Before each release adjust the drop distance to (300 ± 2) mm.

The five dynamic tests shall be completed within 5 min from first suspending the load assembly from the spring.

7.2.4 Test method for harness with leading rein

Fit a conditioned but untested harness to the test dummy according to 7.2.2.2 so that the waist belt is horizontal and in contact with the dummy around its circumference without constricting the dummy. Secure the handgrip or loop of the leading rein to a shackle attached to the spring. Fit the leading rein to the harness.

Dimensions in millimetres

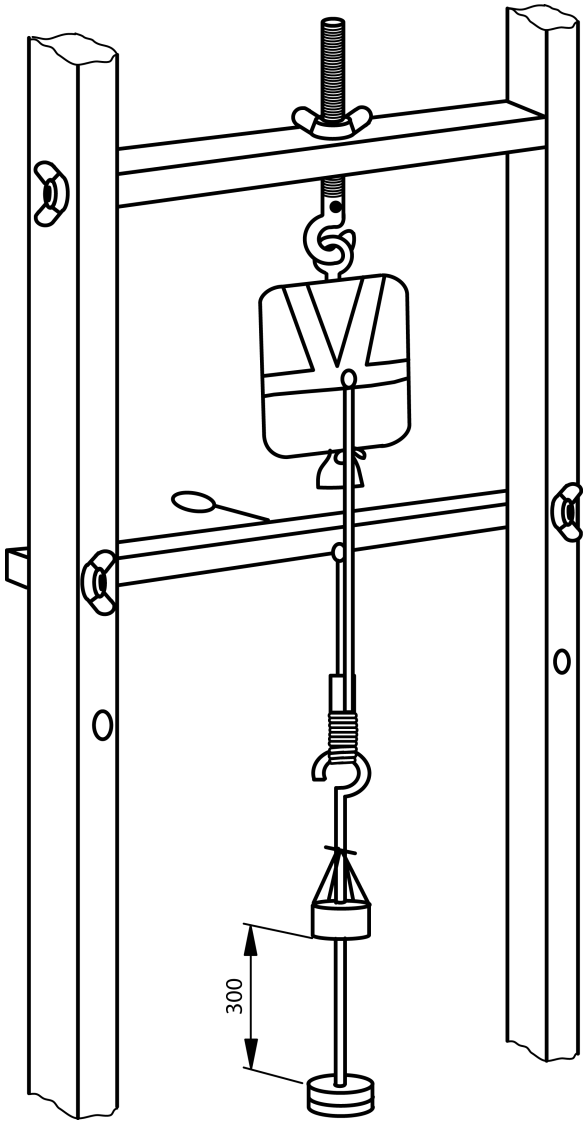


Figure 7 — Harness with leading rein

Adjust the mass of the static mass to compensate for the removal of the suspension bar and shackles.

Suspend the dynamic load from the release mechanism and then suspend the static load from the spring.

Adjust the height of the dummy so that the dynamic load drop distance is (300 ± 2) mm (see Figure 7).

Release the dynamic load.

Repeat the release of the dynamic load for a total of 5 times. Before each release adjust the drop distance to (300 ± 2) mm.

The five dynamic tests shall be completed within 5 minutes from first suspending the load assembly from the spring.

7.2.5 Test method for harness with training rein

Fit a conditioned but untested harness to the test dummy according to 7.2.2.2 so that the waist belt is horizontal and in contact with the test dummy around its circumference without constricting the dummy. Thread the training rein through both outer shackles on the suspension bar and attach each end to either side of the harness accordance with the manufacturers instructions. Adjust the suspension bar so that it is in an essentially horizontal position.

Suspend the dynamic load from the release mechanism and then suspend the static load from the spring.

Adjust the height of the dummy so that the dynamic load drop distance is (300 ± 2) mm (see Figure 8).

Release the dynamic load.

Repeat the release of the dynamic load for a total of 5 times. Before each release adjust the drop distance to (300 ± 2) mm.

The 5 dynamic tests shall be completed within 5 min from first suspending the load assembly from the spring.

Dimensions in millimetres

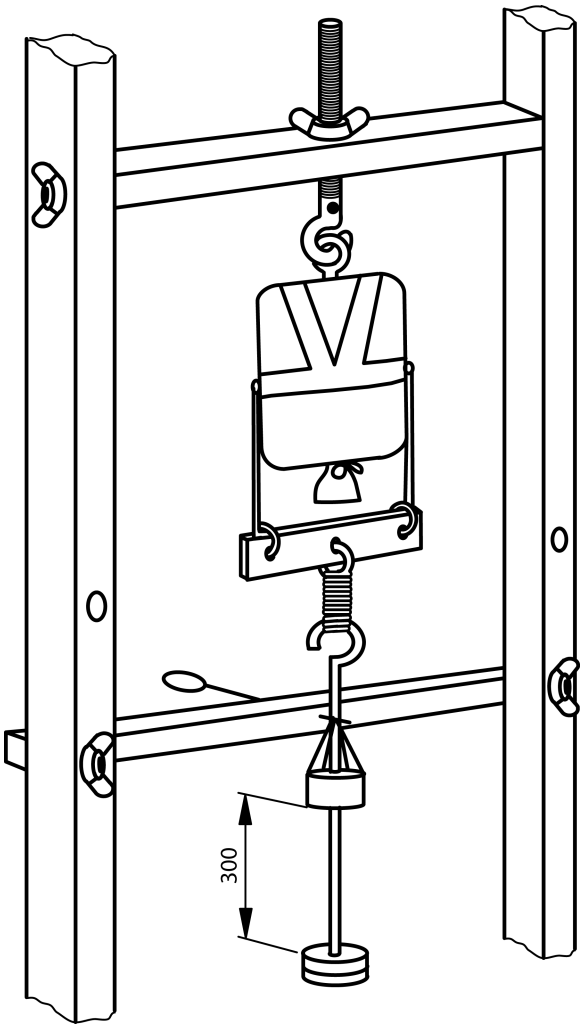


Figure 8 — Harness with training rein

7.2.6 Test method for wrist rein

Remove the test dummy from the apparatus and replace with a shackle.

Adjust the child's wrist loop to approximately the middle of its range of adjustment and secure to the shackle suspended from the adjustable hook or eye.

If adjustable, adjust the rein part to approximately the middle of its range of adjustment.

If adjustable, adjust the carer's hand wrist loop to approximately the middle of its range of adjustment and attach to a shackle attached to the spring.

Adjust the mass of the static mass to compensate for the removal of the suspension bar and shackles.

Suspend the dynamic load from the release mechanism and then suspend the static load from the spring.

Adjust the height of the dummy so that the dynamic load drop distance is (300 ± 2) mm (see Figure 9).

Release the dynamic load.

Repeat the release of the dynamic load for a total of 5 times. Before each release adjust the drop distance to (300 ± 2) mm.

The five dynamic tests shall be completed within 5 min from first suspending the load assembly from the spring.

Dimensions in millimetres

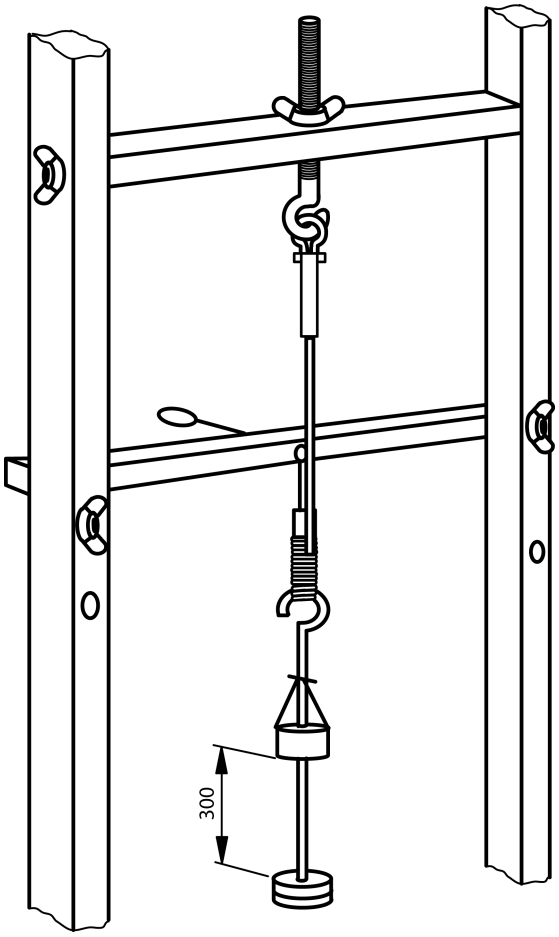


Figure 9 — Wrist rein

8 General

All marking, instructions and purchase information for children's harnesses, reins and similar type articles that conform to this document shall be in the official language(s) of the country in which they are sold.

9 Marking

9.1 Requirements for marking

Each harness shall be permanently marked with:

— the number and year of this document (EN 13210:2004);

— name or trademark or other means of identification of either the manufacture or distributor or retailer;

— means of identifying the product e.g. model number;

— washing or cleaning instructions.

Permanent labels shall be conspicuous, legible and be securely attached to the product.

When tested in accordance with 9.2 it shall not be possible to remove any permanent label or permanent marking and the text shall be clearly visible.

9.2 Durability of marking

Any permanent labels and permanent markings shall be rubbed by hand with a water dampened soft cotton cloth for 20 s.

10 Instructions for use

The instructions shall be headed

"IMPORTANT KEEP FOR FUTURE REFERENCE" in letters of minimum height 5 mm.

The following warnings shall be provided in the form given:

a) WARNING – Be aware of the danger when using reins near automatic doors, escalators etc.

b) WARNING – Remove any detachable reins when the harness is fitted into a child use and care article

c) WARNING – Keep out of child's reach when not in use

d) WARNING – Do not use this harness in motorised and power driven vehicles

The following information shall be provided, where applicable:

e) information on the age range of the child for which the product is intended;

f) information on the correct fitting to child use and care articles;

g) information for the correct fitting and adjustment of the harness to the child;

h) information for cleaning, washing and drying;

i) information on checking straps and fastenings for signs of wear or damage;

j) information for fitting and fixing of attachment straps and reins;

k) information that a child should not be left unattended even when harnessed into a child use and care article.

11 Purchase information

The following warnings shall be provided in the form given:

— WARNING – Do not use this harness in motorised and power driven vehicles

— WARNING – Ensure that the harness attachment devices are compatible with the child use and care article.

The following information shall be provided at the point of sale and shall be clearly visible and legible:

— name or trade mark or any other means of identification of the manufacturer, importer or retailer;

— number and year of this document (EN 13210:2004);

— the age range for which the product is designed birth to 4 years or 6 months to 4 years;

— if applicable method of attaching the harness to a child use and care articles;

— whether or not a rein can be fitted to the harness.

12 Packaging

Any plastics used in packaging shall have a minimum thickness of 0,038 mm unless the packaging comes into the following categories:

a) bags with an opening perimeter of less than 380 mm;

b) shrunk-on film packaging that is normally destroyed when opened by the user;

c) bag area of maximum dimensions of 30 mm x 30 mm shall have a minimum hole area of 1 %;

d) WARNING – Keep plastic covering away from children to avoid suffocation.

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