

Personal protective equipment against falls from a height — Full body harnesses

The European Standard EN 361:2002 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 361:2002. It supersedes BS EN 361:1993 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/5, Industrial safety belts and harnesses, which has the responsibility to:

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Personal protective equipment against falls from a height - Full body harnesses

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Persönliche Schutzausrüstung gegen Absturz - Auffanggurte

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Foreword

This document EN 361:2002 has been prepared by Technical Committee CEN/TC 160 "Protection against falls from a height including working belts", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

This document supersedes EN 361:1992. This new edition contains the old text of the standard and incorporates some urgent amendments that are intended to give additional information and clarify inconsistencies. A comprehensive revision of the standard will follow at a later stage.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

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

1 Scope

This European Standard specifies the requirements, test methods, marking, information supplied by the manufacturer and packaging for full body harnesses. Other types of body support, specified in other European Standards, e. g. EN 358, EN 813 or EN 1497, may be incorporated into the full body harness. Fall arrest systems are specified in EN 363.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 358, *Personal protective equipment for work positioning and prevention of falls from a height – Belts for work positioning and restraint and work positioning lanyards.*

EN 362:1992, *Personal protective equipment against falls from a height – Connectors.*

EN 363:2002, *Personal protective equipment against falls from a height - Fall arrest systems.*

EN 364:1992, *Personal protective equipment against falls from a height - Test methods.*

EN 365:1992, *Personal protective equipment against falls from a height - General requirements for instructions for use and for marking.*

EN 813, *Personal protective equipment for prevention of falls from a height – Sit harnesses.*

EN 892, *Mountaineering equipment - Dynamic mountaineering ropes - Safety requirements and test methods.*

3 Terms and definitions

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

3.1

full body harness

body support primarily for fall arrest purposes, i.e. a component of a fall arrest system. The full body harness may comprise straps, fittings, buckles or other elements, suitably arranged and assembled to support the whole body of a person and to restrain the wearer during a fall and after the arrest of a fall [EN 363].

3.2

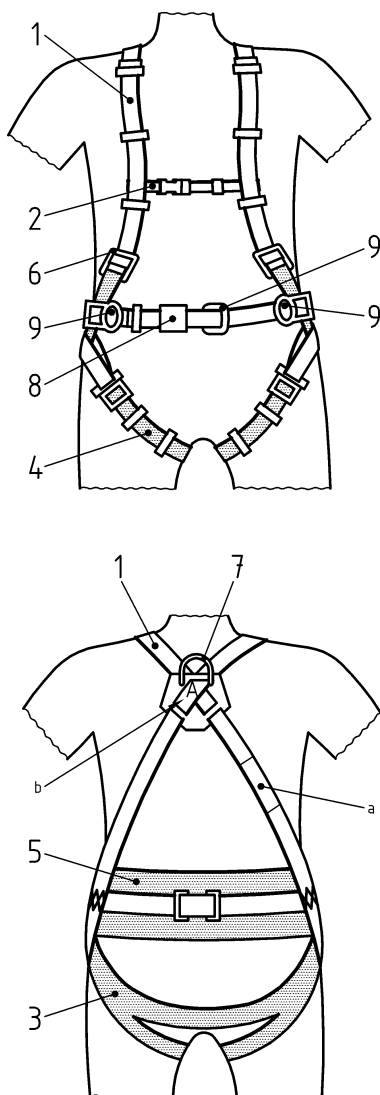
primary straps/secondary straps

primary straps are those straps of a full body harness which are intended by the manufacturer to support the body or exert pressure on the body during the fall of a person and after the arrest of the fall. The other straps are secondary straps

3.3

attachment element

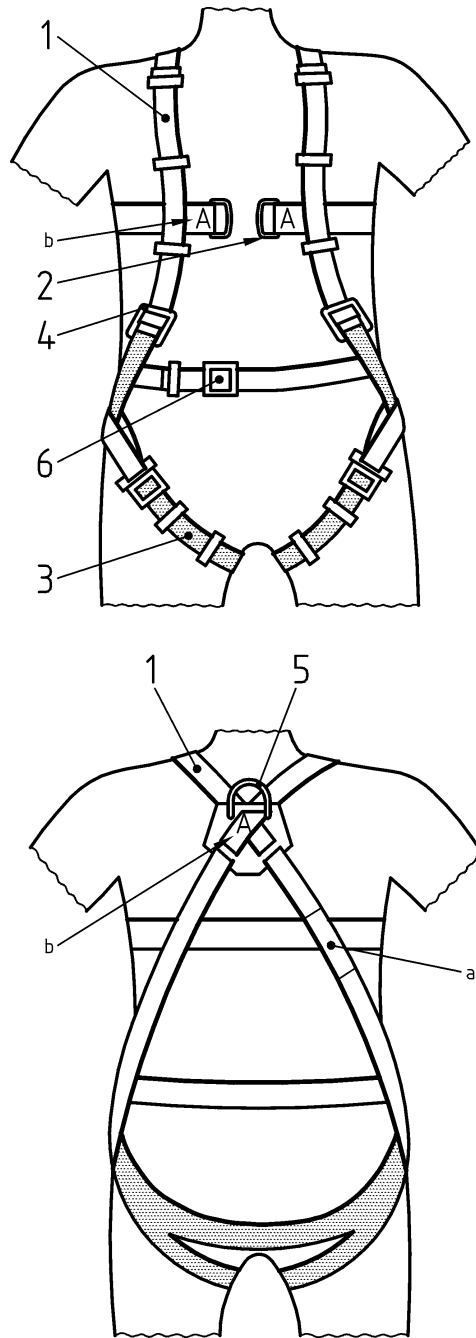
specific connecting point for components or sub-systems



Key

- 1 Shoulder strap
- 2 Secondary strap
- 3 Sit strap (Primary strap)
- 4 Thigh strap
- 5 Back support for work positioning
- 6 Adjustment element
- 7 Fall arrest attachment element
- 8 Buckle
- 9 Attachment element for work positioning
- a) Marking, see clause 6
- b) Marking with capital letter "A"

Figure 1 — Example of a full body harness with back attachment for fall arrest and attachment for work positioning



Key

- 1 Shoulder strap
- 2 Front attachment
- 3 Thigh strap (Primary strap)
- 4 Adjustment element
- 5 Back attachment
- 6 Buckle
- a) Marking, see clause 6
- b) Marking with capital letter "A"

Figure 2 — Example of a full body harness with front attachment and back attachment for fall arrest

4 Requirements

4.1 Design and ergonomics

The general requirements for the design and ergonomics are specified in 4.1 of EN 363:2002.

4.2 Materials and construction

Webbing and sewing threads of a full body harness shall be made from virgin filament or multifilament synthetic fibres suitable for their intended use.

The breaking tenacity of the synthetic fibre shall be known to be at least 0,6 N/tex.

Threads used for sewing shall be physically compatible with the webbing, and the quality shall be compatible to that of the webbing. They shall, however, be of a contrasting shade or colour in order to facilitate visual inspection.

A full body harness shall comprise straps or similar elements which are placed in the pelvic area and on the shoulders, e. g. as shown in Figure 1. The full body harness shall fit the wearer. Means of adjustment may be provided.

Straps shall not migrate from position and shall not loosen by themselves.

The width of primary straps shall be at least 40 mm and of secondary straps at least 20 mm.

It shall be visually confirmed during the static strength test specified in 5.1 that those straps which support the torso dummy or exert pressure on the torso dummy are primary straps.

The fall arrest attachment element(s) may be placed so as to lie, during the use of the full body harness, above the centre of gravity, in front of the chest and/or at the back and/or at both shoulders of the wearer.

The full body harness may be incorporated within a garment.

It shall be possible to carry out a visual inspection of the whole full body harness, even if the full body harness is incorporated within a garment. All securing buckles (i. e. buckles other than those used primarily for adjustment of fit) shall be designed in such a way that they can only be assembled in a correct manner or, if they are capable of being assembled in more than one way, that each method of assembly shall conform to the strength and performance requirements.

Metallic fittings shall conform to the corrosion protection requirements specified in 4.4 of EN 362:1992.

4.3 Static strength

When tested at each attachment element as described in 5.1.4.2 of EN 364:1992 with a force of 15 kN and as described in 5.1.4.3 of EN 364:1992 with a force of 10 kN, the full body harness shall not release the torso dummy.

4.4 Dynamic performance

When tested at each fall arrest attachment element as described in 5.2 with a torso dummy of 100 kg mass, the full body harness shall withstand two successive drop tests with an adjusted free fall distance of 4 m (one drop test with the torso dummy feet first and one drop test with the torso dummy head first) without releasing the torso dummy. After each drop test, the torso dummy shall be arrested in a head-up position and the angle between the longitudinal axis of the dorsal plane of the torso dummy and the vertical shall be a maximum of 50°.

4.5 Additional elements

If a full body harness is additionally equipped with elements for the use of the full body harness in a work positioning or restraint system, these elements shall conform to EN 358 and/or EN 813.

4.6 Marking and information

Marking of the full body harness shall be in accordance with clause 6.

Information shall be supplied with the full body harness in accordance with clause 7.

5 Test methods

5.1 Static strength test

5.1.1 Apparatus

The static strength test apparatus shall conform to 4.1 and 4.2 of EN 364:1992.

5.1.2 Method

The static strength test shall be conducted as described in 5.1.4 of EN 364:1992.

5.2 Dynamic performance test

5.2.1 Apparatus

The dynamic performance test apparatus shall conform to 4.2, 4.4 and 4.6 of EN 364:1992.

5.2.2 Method

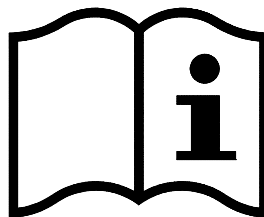
The dynamic performance test shall be conducted as described in 5.1.2 of EN 364:1992.

In addition to 5.1.2.1 of EN 364:1992, the single mountaineering rope used for testing shall conform to EN 892, and shall be known to have an impact force of $(9 \pm 1,5)$ kN in the first impact force test.

6 Marking

Marking on the full body harness shall conform to 2.2 of EN 365:1992 and any text shall be in the languages of the country of destination. In addition to conforming to 2.2 of EN 365:1992 the marking shall include the following:

- a) on the full body harness, a pictogram to indicate that users shall read the information supplied by the manufacturer (see figure);



- b) a capital letter "A" at each fall arrest attachment element;
- c) the model/type identification mark of the full body harness;
- d) the number of this European Standard, i.e. EN 361.

7 Information supplied by the manufacturer

The information supplied by the manufacturer shall be provided in the languages of the country of destination. It shall conform to 2.1 of EN 365:1992 and in addition shall include at least advice or information as follows:

- a) the correct way to put on the full body harness;
- b) the specific conditions under which the full body harness may be used;
- c) the characteristics required for a reliable anchor point;
- d) on how to connect to a reliable anchor point, to a connecting sub-system, e.g. an energy absorber, lanyard and connector, and to other components of a fall arrest system;
- e) which attachment elements of the full body harness shall be used in a fall arrest or in a work positioning system;
- f) on how to ensure the compatibility of any components to be used in conjunction with the full body harness, e.g. by reference to other European Standards;
- g) that consideration should be given to the necessary minimum clearance below the feet of the user in order to avoid collision with the structure or ground in a fall from a height and that specific advice will be given with the sub-system, e. g. energy absorber or fall arrester;
- h) the materials from which full body harness is made;
- i) on limitations of the materials in the product or hazards which may affect its performance, e.g. temperature, the effect of sharp edges, chemical reagents, electrical conductivity, cutting, abrasion, UV degradation, other climatic conditions;
- j) that before and during use, consideration should be given as to how any rescue could be safely and efficiently carried out;
- k) that the product should only be used by a trained and/or otherwise competent person or the user should be under the direct supervision of such a person;
- l) on how to clean the product, including disinfection, without adverse effect;
- m) if information exists, the expected lifespan of the product (obsolescence) or how this may be determined;
- n) on how to protect the product during transportation;
- o) the model/type identification mark of the full body harness;
- p) on the meaning of any markings on the product;
- q) the number of this European Standard, i.e. EN 361.

8 Packaging

Full body harnesses shall be supplied wrapped, but not necessarily sealed, in material which provides some resistance against the penetration of moisture.

Annex ZA
(informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive 89/686/EEC.

WARNING : Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this European Standard.

The following clauses of this European Standard are likely to support requirements of Directive 89/686/EEC, Annex II :

EU-Directive 89/686/EEC, Annex II	clauses of this standard
1.1 Design principles	4.1 and 4.2
1.3.2 Lightness and strength	4.3
1.4 Information supplied by the manufacturer	7
2.1 PPE incorporating adjustment systems	4.2 and 7
2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	6
3.1.2.2 Prevention of falls from height	4 to 8

Compliance with the clauses of this European Standard provides one means of conforming to the specific essential requirements of the Directive concerned and associated EFTA regulations.

Bibliography

EN 1497, *Rescue equipment - Rescue harnesses.*

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