BRITISH STANDARD

BS EN
1498 : 1996

Rescue equipment — Rescue loops

The European Standard EN 1498 : 1996 has the status of a British Standard

ICS 13.340.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee PH/5, Industrial safety belts and harnesses, upon which the following bodies were represented:

Arboricultural Safety Council
Association of Consulting Scientists
British Constructional Steelwork Association Ltd.
British Electrical Systems Association (BEAMA Ltd.)
British Forging Industry Association
British Narrow Fabrics Association
British Telecommunications plc
Construction Fixings Association
Cordage Manufacturers Institute
Department of Trade and Industry (National Engineering Laboratory)
Electricity Association
Health and Safety Executive
Industrial Rope Access Trade Association
National Federation of Master Steeplejacks and Lightning Conductor Engineers
Royal Society for the Prevention of Accidents
Safety Equipment Association
Tes-Bretby Ltd.

This British Standard, having been prepared under the direction of the Health and Environment Sector Board, was published under the authority of the Standards Board and comes into effect on
15 November 1996

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference PH/5
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Contents

National foreword

This British Standard has been prepared by Technical Committee PH/5 and is the English language version of EN 1498 : 1996 *Rescue equipment — Rescue loops*, published by the European Committee for Standardization (CEN).

EN 1498 was produced as a result of international discussions in which the United Kingdom took an active part.

Cross-references

Publication referred to	Corresponding British Standard
EN 362	BS EN 362 : 1993 *Personal protective equipment against falls from a height — Connectors*
EN 363	BS EN 363 : 1993 *Personal protective equipment against falls from a height — Fall arrest systems*
EN 364 : 1992	BS EN 364 : 1993 *Personal protective equipment against falls from a height — Test methods*
EN 365	BS EN 365 : 1993 *Personal protective equipment against falls from a height — General requirements for instructions for use and for marking*

Compliance with a British Standard does not of itself confer immunity from legal obligations.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1498

April 1996

ICS 13.220.10; 13.340.20

Descriptors: personal protective equipment, accident prevention, protection against fall, rescue equipment, webbing, specifications, human factors engineering, mechanical strength, tests, instructions, marking

English version

Rescue equipment — Rescue loops

Equipement de sauvetage — Sangles de sauvetage

Rettungsausrüstung — Rettungsschlaufen

This European Standard was approved by CEN on 1996-03-07. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN 1498 : 1996 E

Foreword

This European Standard has been prepared by CEN/TC 160, Protection against falls from height including working belts, of which the Secretariat 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 October 1996, and conflicting standards shall be withdrawn at the latest by October 1996.

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(s).

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

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

Contents

1 Scope

This standard specifies requirements, test methods, instructions for use and marking for rescue loops. A rescue loop is not a component of personal protective equipment against falls from a height.

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.

EN 362	*Personal protective equipment against falls from a height — Connectors*
EN 363	*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	*Personal protective equipment against falls from a height — General requirements for instructions for use and for marking*
prEN 892-1	*Mountaineering equipment — Ropes — Part 1: Safety requirements, testing, marking*

3 Definitions

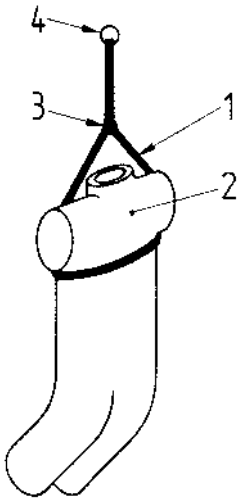
For the purposes of this standard the definitions given in EN 363 apply, together with the following.

3.1 rescue loop

Component of personal protective equipment for rescue purposes consisting of elements designed and constructed so that during the rescue process the rescuee is held and kept in a defined position.

3.2 rescue loop class A

Component of personal protective equipment consisting of elements designed and constructed in such a way that, during the rescue process, the rescuee is held by the straps of the loop passing around the back and under the arms (see figure 1).

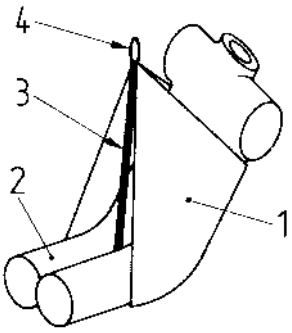


1 Rescue loop
2 Torso dummy
3 Adjustment
4 Attachment point

Figure 1. Example of a rescue loop class A

3.3 rescue loop class B

Component of personal protective equipment consisting of elements designed and constructed in such a way that, during the rescue process, the rescuee is held sitting in the loop (see figure 2). ■



1 Rescue loop
2 Torso dummy
3 Central strap
4 Attachment point

Figure 2. Example of a rescue loop class B

3.4 rescue loop class C

Component of personal protective equipment consisting of elements designed and constructed in such a way that, during the rescue process, the rescuee is held in a position with their head down and with the loop fastened around the ankles (see figure 3).

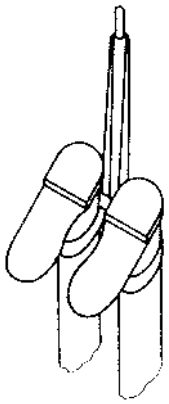


Figure 3. Example of a rescue loop class C

4 Requirements

4.1 Ergonomics

The rescue loop shall be designed so that in the conditions of use for which it is intended and in the foreseeable period of wearing, the rescuee is not essentially impaired. The degree of protection provided shall correspond to the risks.

The rescue loop shall not cause any additional risk and it should offer an acceptable degree of comfort. When using the rescue loop the rescuee shall not be endangered or impaired due to a displacement of the straps.

4.2 Materials and construction

4.2.1 *Webbings and yarns*

Webbings and yarns shall be made of high tenacity filament or multifilament synthetic fibres, suitable for the use intended. The breaking tenacity of the synthetic fibres shall be known to be at least 0,6 N/tex.

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

4.2.2 *Construction*

The width of the body-supporting parts shall be at least 40 mm. It shall be possible to visually inspect every component of a rescue loop.

The rescue loop shall be designed so that, when tested in accordance with **5.3.2.1**, inadvertent release of the rescuee from the rescue loop is prevented.

4.2.3 *Attachment*

The rescue loop shall have at least one attachment point. The eye of the attachment point shall be designed so that a mandrel of a diameter of at least 25 mm can pass through it.

4.2.4 *Connectors*

Connectors shall conform to EN 362.

4.3 Dynamic strength

Two drop tests shall be carried out according to **5.3.2**. The torso dummy or the test mass shall be held and no body-supporting part of the rescue loop shall break or rupture; the elements of the rescue loop shall not become detached.

If the rescue loop has more than one attachment point, the two tests shall be carried out on each attachment point.

NOTE. Additional rescue loops should be supplied for this purpose.

4.4 Static strength

When tested in accordance with **5.4** with a force of 15 kN applied for a period of at least 3 min, no body-supporting part of the rescue loop shall break or rupture; the elements of the rescue loop shall not become detached.

If the rescue loop has more than one attachment point, the tests shall be carried out on each attachment point.

NOTE. Additional rescue loops should be supplied for this purpose.

5 Test methods

5.1 Sampling

At least two test samples, each supplied with an unused sample of mountaineering rope (lanyard) according to prEN 892-1 with a nominal diameter of 11 mm and an approximate length of 4000 mm, shall be provided for the tests.

5.2 Visual inspection

Check that the specifications of **4.2.1** and **4.2.2** are met.

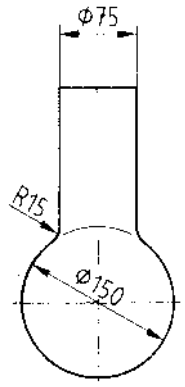
5.3 Dynamic test

5.3.1 *Test apparatus*

The test apparatus for the dynamic test of rescue loops classes A and B shall conform to **4.2**, **4.4**, **4.5** and **4.6** of EN 364 : 1992.

The test apparatus for the test of the rescue loop class C shall conform to figure 4.

This shall be a rigid structure having a hard and smooth surface.



Dimensions in millimetres

Figure 4. Test apparatus for the test of a rescue loop class C

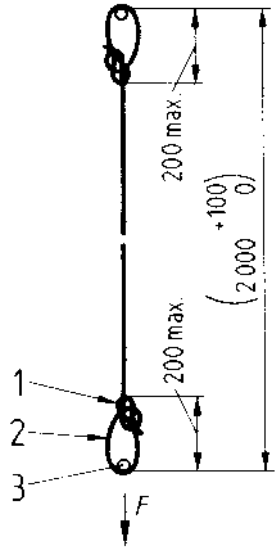
5.3.2 ***Dynamic test procedure***

5.3.2.1 *Dynamic test for rescue loops classes A and B*

Fit the rescue loop to the torso dummy in accordance with the instructions for use. To ensure that the test is carried out correctly, additional fixings may be used to retain the torso dummy during the test. These shall not affect the test results.

Connect one end of the rope to the attachment point of the rescue loop and the other to the anchorage point of the test apparatus.

Prepare the rope so that, under the load of the torso dummy, the length of the rope including the loops to be formed at the two ends is 2000^{+100}_{0} mm (see figure 5).



Dimensions in millimetres
F Force: 1 kN ± 10 N
1 Bowline knot
2 Termination loop
3 Attachment point

Figure 5. Rope for the dynamic test

Terminate the rope in eyes produced by tying bowline knots (see figure 6) and ensure the length of the termination eyes is a maximum of 200 mm.

Suspend the torso dummy by means of the rescue loop, then raise it by 1000^{+50}_{0} mm with a maximum distance of 300 mm from the centre line (see figure 7). Hold it with the quick-release device.

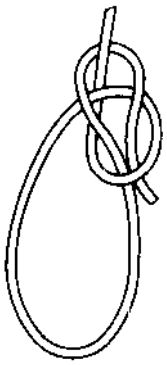


Figure 6. Bowline knot

Operate the quick-release device so as to drop the rescue loop with the torso dummy without initial velocity.

Check that the requirements of **4.2.2** and **4.3** are met.

Carry out the second test using the same rope.

Adjustment of the rescue loop is permitted for subsequent tests.

5.3.2.2 *Dynamic test for rescue loops class C*

Carry out the test described in **5.3.2.1**, but with a 100 kg mass according to EN 364 instead of the torso dummy. For the test arrangement, see figure 8.

Adjustment of the rescue loop is permitted for subsequent tests.

5.4 Static test

5.4.1 ***Test apparatus***

The apparatus for the static test of rescue loops classes A and B shall conform to **4.1**, **4.2** and **4.3** of EN 364 : 1992.

The test apparatus for the test of the rescue loop class C shall conform to figure 4.

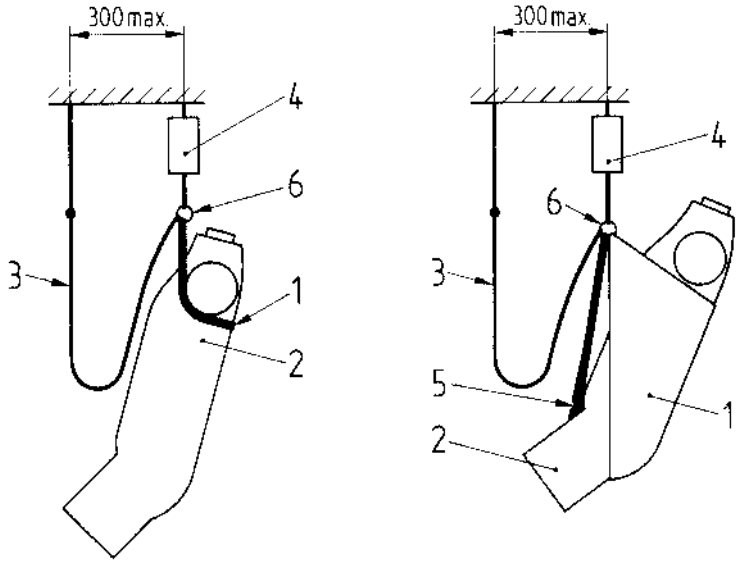
5.4.2 ***Static test procedure for rescue loops classes A and B***

Fit the rescue loop to the torso dummy in accordance with the instructions for use. Install the torso dummy and the rescue loop in the test apparatus and apply the specified static test force between the attachment point of the rescue loop and the lower ring of the torso dummy (see figures 9 and 10).

For the test of rescue loops class B, any cradle material which might be present can be cut in non-loadbearing areas in order to be able to apply the test force to the lower ring of the torso dummy.

Check that the requirements of **4.4** are met.

Adjustment of the rescue loop is permitted for subsequent tests.

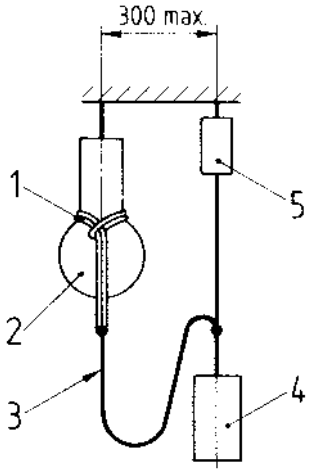


a) Class A b) Class B

Dimensions in millimetres

1 Rescue loop
2 Torso dummy
3 Rope
4 Quick release device
5 Central strap
6 Attachment point

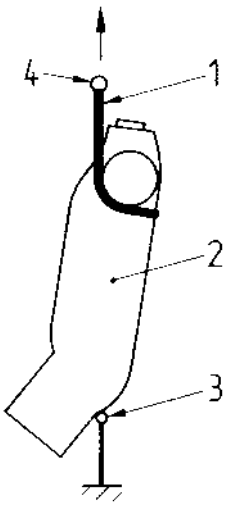
Figure 7. Dynamic test of rescue loops classes A and B



Dimensions in millimetres

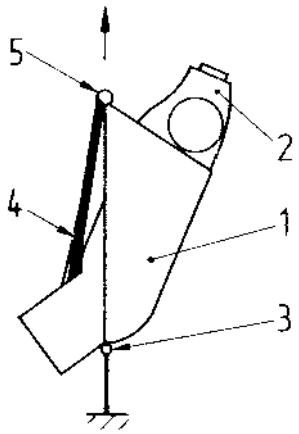
1 Rescue loop
2 Test apparatus
3 Rope
4 Test mass
5 Quick release device

Figure 8. Dynamic test of rescued loops class C



1 Rescue loop
2 Torso dummy
3 Lower ring of the torso dummy
4 Attachment point

Figure 9. Static test of rescue loops class A



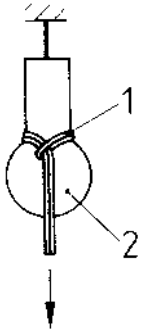
1 Rescue loop
2 Torso dummy
3 Lower ring of the torso dummy
4 Central strap
5 Attachment point

Figure 10. Static test of rescue loops class B

5.4.3 *Static test procedure for rescue loops class C*

Fit the rescue loop around the test apparatus as shown at figure 11 and apply the test force specified in **4.4**. Check that the requirements of **4.4** are met.

Adjustment of the rescue loop is permitted for subsequent tests.



1 Rescue loop
2 Test apparatus

Figure 11. Static test of rescue loops class C

6 Instructions for use and marking

6.1 Instructions for use

The information given in the instructions for use shall conform to EN 365.

In addition, the instructions for use shall contain at least the following information:

a) the synthetic fibre used;

b) the position intended for use;

c) how to assemble or reassemble the elements to prepare a rescue loop ready for use if the rescue loop can be disassembled;

d) limitations of use, for example in an aggressive atmosphere, temperature;

e) how to disinfect the product if contaminated;

f) the obsolescence deadline or period of obsolescence of the rescue loop or certain of its components;

g) a warning if chemical substances can damage the materials used;

h) the meaning of markings on the product.

6.2 Marking

The marking shall conform to EN 365 and shall contain at least the following information:

a) type identification;

b) class of the rescue loop;

c) the last two digits of the year of manufacture, e.g. 95 for 1995;

d) the manufacturer's or supplier's name, trade mark or other means of identification;

e) the manufacturer's batch number or serial number;

f) the number of this European Standard, i.e. EN 1498;

g) the information 'For rescue purposes only'.

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 standard.

The clauses of this standard as detailed in table ZA.1 are likely to support requirements of Directive 89/686/EEC:

Table ZA.1: Correspondence between this European Standard and Directive 89/686/EEC

EU Directive 89/686/EEC, Annex II	**Clauses of this standard**
1.1 Design principles	clause **4**
1.2 Innocuousness of PPE	**4.1** and **4.2**
1.3 Comfort and efficiency	clause **4**
1.4 Information supplied by the manufacturer	clause **6**
2.1 PPE incorporating adjustment systems	clause **4**
2.4 PPE subject to ageing	**4.2** and clause **6**
2.7 PPE intended for emergency use or rapid installation and/or removal	**4.1** and **4.2**
2.9 PPE incorporating components which can be adjusted or removed by the user	**4.2**
2.10 PPE for connection to another, external complementary device	**4.2** and clause **6**
3.1 Protection against mechanical impact	**4.3**

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

List of references

See national foreword.

BSI — British Standards Institution

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