SLOVENSKI STANDARD
SIST EN 1496:2006

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Osebna oprema za varovanje pred padci - Reševalne dvigovalne naprave

Personal fall protection equipment - Rescue lifting devices

Persönliche Absturzschutzausrüstungen - Rettungshubgeräte

Equipement de protection personnel contre les chutes - Dispositifs de sauvetage par élévation

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13.340.60	Zaġļ ita pred padci in zdrsi	Protection against falling and slipping
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Personal fall protection equipment - Rescue lifting devices

Equipement de protection personnel contre les chutes - Dispositifs de sauvetage par élévation

Persönliche Absturzschutzausrüstungen - Rettungshubgeräte

This European Standard was approved by CEN on 22 September 2006.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 1496:2006) has been prepared by Technical Committee CEN/TC 160 “Protection against falls from 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of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

Annex A provides details of significant technical changes between this European Standard and the previous edition: EN 1496:1996.

This document supersedes EN 1496:1996.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies requirements, test methods, marking and information supplied by the manufacturer for rescue lifting devices. Rescue lifting devices conforming to this European Standard are used as components or sub-systems of rescue systems.

NOTE Rescue lifting devices in accordance with this European Standard may be combined with other components or sub-systems, e.g. descender devices for rescue (EN 341), retractable type fall arresters (EN 360).

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 362, *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, *Personal protective equipment against falls from a height — General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging*

EN 1891:1998, *Personal protective equipment for the prevention of falls from a height — Low stretch kernmantel ropes*

EN ISO 1140, *Fibre ropes — Polyamide — 3-, 4- and 8-strand ropes (ISO 1140:2004)*

EN ISO 1141, *Fibre ropes — Polyester — 3-, 4- and 8-strand ropes (ISO 1141:2004)*

ISO 2232, *Round drawn wire for general purpose non-alloy steel wire ropes and for large diameter steel wire ropes — Specifications*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 363:2002 and the following apply.

3.1
rescue lifting device class A
component or sub-system of a rescue system, by which a person is lifted by a rescuer or lifts himself from a lower to a higher place

3.2
rescue lifting device class B
rescue lifting device class A with an additional hand-operated lowering function intended for lowering a person over a distance limited to 2 m

NOTE The limited lowering function is provided because in some circumstances it may be necessary to lower a person a short distance during a rescue lifting operation, e.g. to avoid an obstruction. For a rescue by descent, a descender device conforming to EN 341 should be used.

3.3
rescue system
personal fall protection system by which a person can rescue themselves or others, in such a way that a fall is prevented

3.4
personal fall protection system
assembly of components for protection against falls from a height at work, including at least a body holding device connected to a reliable anchorNOTE Excludes systems for professional and private sports activities.

3.5
maximum rated load (for the rescue lifting device)
maximum mass of the person(s), including tools and equipment, as specified by the manufacturer for the rescue lifting device

NOTE Maximum rated load is expressed in kilograms.

3.6
braking force
maximum force F_{max} measured during the braking period of the dynamic performance test

NOTE Maximum force F_{max} is expressed in kilo newtons.

4 Requirements

4.1 General

4.1.1 A rescue lifting device integrated into a personal fall protection system other than a rescue system shall meet all the requirements of this European Standard when in the rescue mode.

4.1.2 If the rescue lifting device is permanently fitted or intended to be fitted to a tripod or similar anchor device according to EN 795, the whole unit, i.e. the rescue lifting device and the anchor device combined, shall meet the requirements of this European Standard.

4.2 Ergonomics

When tested in accordance with 5.5 with a mass equivalent to the maximum rated load, but at least 100 kg, the operating force for lifting the test mass shall not exceed 250 N.

4.3 Materials and construction

4.3.1 General

Materials used in the rescue lifting device that may come into contact with the skin of a user shall not be known to cause irritating or sensitization effects during intended use.

When checked in accordance with 5.4, the rescue lifting device shall have no sharp edges and burrs that may cause injury to the user.

4.3.2 Lines

Lines shall be made from textile rope or webbing or from steel wire rope.

4.3.3 Ropes and webbings

Fibre ropes of a non-sheathed core construction shall conform to EN ISO 1140 or EN ISO 1141.

Fibre ropes of kernmantel construction shall conform to EN 1891:1998, type A.

Wire ropes shall conform to ISO 2232.

Webbings and yarns shall be made of filament or multifilament synthetic fibres, suitable for the use intended. 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 rope or webbing and their quality shall be comparable to those of the rope or webbing. They shall, however, be of a contrasting shade in order to facilitate visual inspection.

4.3.4 Connectors

Connectors shall conform to EN 362.

4.4 Function for class A rescue lifting devices

When tested in accordance with 5.9.1, the test mass shall be arrested within a vertical distance of 100 mm.

4.5 Dynamic performance and function for class B rescue lifting devices

When tested in accordance with 5.6 with a test mass equivalent to the maximum rated load, but at least 100 kg, the test mass shall be held and the braking force F_{max} shall not exceed 6 kN.

When tested in accordance with 5.9.2, the lifting and lowering feature shall still function without failure and the test mass shall be arrested within a vertical distance of 100 mm.

4.6 Static strength

When tested in accordance with 5.7 with a test force equivalent to 10 times the maximum rated load, but at least 12 kN, the rescue lifting device shall withstand the test force applied for 3 min without tearing or rupture.

4.7 Corrosion resistance

After the test in accordance with 5.8, metal parts shall show no evidence of corrosion that would affect the function of the rescue lifting device (white scaling or tarnishing is acceptable if the function is not impaired).

NOTE Conformity with this requirement does not imply suitability for use in a marine environment.

4.8 Marking and information

Marking of the rescue lifting device shall be in accordance with Clause 6.

Information shall be supplied with the rescue lifting device in accordance with Clause 7.

5 Test methods

5.1 Sampling

At least two test samples shall be provided for the tests.

5.2 Test masses

Three test masses are required:

— test mass A: equivalent to the maximum rated load, but at least 100 kg;

— test mass B: equivalent to 1,5 times the maximum rated load, but at least 150 kg;

— test mass C: 30 kg.

The tolerance on the test masses is $(^{+2}_{0})$ %.

5.3 Conditioning to wet

The apparatus for conditioning shall conform to EN 364:1992, 4.8.3.

Maintain the rescue lifting device at (20 ± 2) °C for 24 h. Fully extract the line and arrange the rescue lifting device vertically in a tank and spray water within the temperature range of (10 to 30) °C on it for 3 h at a rate of approximately 70 l/h.

Remove the rescue lifting device and commence the test before 90 s has elapsed.

NOTE If the rescue lifting device is integrated into an anchor device, it is sufficient to condition only the rescue lifting device and not the anchor device.

5.4 Examination of design

Confirm by reference to appropriate documentation and by visual and/or tactile examination of the rescue lifting device that it meets the requirements of 4.3.

5.5 Operating force test

Fit the rescue lifting device to an anchor point in accordance with the information supplied by the manufacturer.

Withdraw the line by at least 1 000 mm from the rescue lifting device and attach test mass A to the end termination in the line.

Where relevant, engage the rescue mechanism in accordance with the information supplied by the manufacturer.

Hold the test mass by means of the controlling feature.

Apply a force of a maximum of 250 N to the handle of the controlling feature in such a way that it operates as intended.

Check whether the force lifts the test mass.

5.6 Dynamic performance test for class B rescue lifting devices

5.6.1 Apparatus

The test apparatus shall conform to EN 364:1992, 4.4, 4.5 and 4.6.

5.6.2 Procedure

Attach the rescue lifting device in the intended position of the rescue lifting device to the anchor point of the test apparatus.

If the rescue lifting device is intended to be fitted to a tripod or similar anchor device, then test the whole unit.

Withdraw the line by (4 000 $^{+50}_{0}$) mm from the rescue lifting device and attach test mass A to the end termination of the line, incorporating a force measurement instrument to measure the braking force.