SLOVENSKI STANDARD
SIST EN 353-2:1996

01-februar-1996

Osebna varovalna oprema za zaščito pred padci z višine - Varovalne naprave na gibljivih vodilih

Personal protective equipment against falls from a height - Guided type fall arresters on a flexible anchorage line

Persönliche Schutzausrüstung gegen Absturz - Mitlaufende Auffanggeräte an beweglicher Führung

Equipement de protection individuelle contre les chutes de hauteur - Antichutes mobiles sur support d'assurage flexible

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English version

Personal protective equipment against falls from a height - Guided type fall arresters on a flexible anchorage line

Equipement de protection individuelle contre les chutes de hauteur - Antichutes mobiles sur support d'assurage flexibl

Persönliche Schutzausrüstung gegen Absturz - Mitlaufende Auffanggeräte an beweglicher Führung

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CEN

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

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Contents list

Foreword

This European Standard was prepared by the Technical Committee CEN/TC 160 "Protection against falls from a height including working belts", of which the secretariat is held by DIN.

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

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of an identical text or by endorsement, at the latest by June 1993, and conflicting national standards shall be withdrawn at the latest by June 1993.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, 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, United Kingdom.

1 Scope

This standard specifies the requirements, test methods, instructions for use and marking for guided type fall arresters on a flexible anchorage line secured to an upper anchorage point. Guided type fall arresters according to this standard are used in fall arrest systems specified in EN 363 in conjunction with full body harnesses specified in EN 361. Other types of fall arresters are specified in EN 360 and in EN 353-1. Energy absorbers are specified in EN 355.

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 353-1	Personal protective equipment against falls from a height - Guided type fall arresters on a rigid anchorage line
EN 354:1992	Personal protective equipment against falls from a height - Lanyards
EN 355	Personal protective equipment against falls from a height - Energy absorbers
EN 360	Personal protective equipment against falls from a height - Retractable type fall arresters
EN 361	Personal protective equipment against falls from a height - Full body harnesses
EN 363:1992	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

3 Definitions

For the purpose of this standard the following definitions apply.

3.1 Guided type fall arrester on a flexible anchorage line

"A sub-system consisting of a flexible anchorage line, a self-locking guided type fall arrester which is attached to the flexible anchorage line and a lanyard which is attached to the guided type fall arrester. An energy dissipating element may be incorporated in the guided type fall arrester, in the lanyard or in the anchorage line." [EN 363]

3.2 Guided type fall arrester

"A device with a self-locking function and a guide facility. The guided type fall arrester travels along an anchorage line, accompanies the user without requiring manual adjustment during upward or downward changes of position and locks automatically on the anchorage line when a fall occurs." [EN 363]

3.3 Flexible anchorage line

"A connecting element specified for a sub-system with a guided type fall arrester. A flexible anchorage line may be a synthetic fibre rope or a wire rope and is secured to an upper anchorage point." [EN 363]

3.4 Energy absorber

"A component of a fall arrest system. An energy absorber guarantees the full ability for the safe arresting of a fall from a height in all cases of recommended application." [EN 363]

3.5 Energy dissipating element

"An element of a connecting sub-system for fall arrest purposes. An energy dissipating element may be incorporated in a fall arrester, in a lanyard or in an anchorage line." [EN 363]

3.6 Lanyard

"A connecting element or component of a system. A lanyard may be of synthetic fibre rope, wire rope, webbing or chain." [EN 363]

3.7 Length of a lanyard

"The length L in metres from one load bearing point to the other load bearing point measured in an unloaded, but taut condition of the lanyard." [EN 354]

3.8 Braking force

"The maximum force F_{max} in kilonewtons measured at the anchorage point or the anchorage line during the braking period of the dynamic performance test." [EN 363]

3.9 Arrest distance

"The vertical distance H in metres measured at the mobile load bearing point of the connecting sub-system from the initial position (onset of the free fall) to the final position (equilibrium after the arrest), excluding the displacements of the full body harness and its attachment element." [EN 363]

4 Requirements

4.1 Design and ergonomics

The general requirements for the design and ergonomics are specified in 5.1 of EN 363:1992.

4.2 Materials and construction

A flexible anchorage line shall be a synthetic fibre rope or a wire rope. The material of a flexible anchorage line shall comply with 4.2.2 and 4.2.3 of EN 354:1992.

Flexible anchorage lines shall be secured to an upper anchorage point and shall be either fitted with an end stop or be capable of being fitted with an end stop to prevent the guided type fall arrester from running off the anchorage line unintended.

Guided type fall arresters shall not rely solely on inertia sensing. If a guided type fall arrester has a manual locking feature, the lower end of the flexible anchorage line shall be secured, e. g. by an attached lower termination or an attachment weight.

Flexible anchorage wire ropes shall have an attached lower termination or an attachment weight in every case.

A lanyard may be a synthetic fibre rope, a webbing, a wire rope or a chain. The material of a lanyard shall comply with 4.2.2, 4.2.3 and 4.2.4 of EN 354:1992. The length of a lanyard including energy dissipating element shall not exceed 1,0 m. Both ends of the lanyard shall be suitably terminated.

An energy absorber for a sub-system with a guided type fall arrester shall comply with EN 355.

Connectors for a sub-system with a guided type fall arrester shall comply with EN 362.

4.3 Locking

4.3.1 Locking after conditioning

When conditioned as described in 5.1.2.1 and tested as described in 5.1.2.3 with a test mass of 5 kg the guided type fall arrester shall in each case lock and remain locked until released.

4.3.2 Locking after optional conditioning

Only if the instructions for use of the guided type fall arrester (see clause 6) claims a feature concerning the use under specific conditions (see clause 5.1.2.2), the locking function of the fall arrester shall be tested as appropriate to the claims of the instructions for use.

When conditioned as described in 5.1.2.2 and tested as described in 5.1.2.3 with a test mass of 5 kg, the guided type fall arrester shall in each case lock and remain locked until released.

4.4 Static strength

When tested as described in 5.2 textile anchorage lines shall sustain a force of at least 22 kN and anchorage wire ropes shall sustain a force of at least 15 kN.

4.5 Dynamic performance

When tested as described in 5.3 with a rigid steel mass of 100 kg, the braking force F_{max} shall not exceed 6,0 kN and the arrest distance H shall not exceed 3,0 m.

4.6 Dynamic strength

When tested as described in 5.4 with a rigid steel mass of 150 kg the guided type fall arrester shall not release the mass.

4.7 Corrosion resistance

After tested as described in 5.5 the elements of the guided type fall arrester shall be examined. Where necessary to gain visual access to the internal elements, dismantle the device. The test is classed as a failure if any corrosion is evident that could affect the function of the device.
(White scaling or tarnishing is acceptable.)

5 Test methods

5.1 Locking test after conditioning

5.1.1 Apparatus

5.1.1.1 Apparatus for conditioning

The conditioning apparatus shall comply with 4.8 of EN 364:1992.

5.1.1.2 Apparatus for the locking test

The locking test apparatus consists of an anchorage point and a test mass of 5 kg.

5.1.2 Method

5.1.2.1 Conditioning

The conditioning to heat, to cold and to wet is described in 5.11 of EN 364:1992.

5.1.2.2 Optional conditioning

The conditioning to dust and to oil is optional and described in 5.11 of EN 364:1992.

5.1.2.3 Locking test

The locking test shall be conducted as described in 5.11.7.1 of EN 364:1992.