



SLOVENSKI STANDARD

SIST EN 353-1:2002

01-november-2002

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SIST EN 353-1:1996

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Personal protective equipment against falls from a height - Part 1: Guided type fall arresters including a rigid anchor line

Persönliche Schutzausrüstungen gegen Absturz - Teil 1: Steigschutzeinrichtungen einschließlich fester Führung

Equipement de protection individuelle contre les chutes de hauteur - Partie 1: Antichutes mobiles incluant un support d'assurage rigide

Ta slovenski standard je istoveten z: EN 353-1:2002

ICS:

13.340.60	Zaščitna oprema za zaščito pred padci in drsenjem	Protection against falling and slipping
13.340.99	Druga varovalna oprema	Other protective equipment

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English version

Personal protective equipment against falls from a height - Part 1: Guided type fall arresters including a rigid anchor line

Équipement de protection individuelle contre les chutes de hauteur - Partie 1: Antichutes mobiles incluant un support d'assurance rigide

Persönliche Schutzausrüstungen gegen Absturz - Mitlaufende Auffanggeräte einschließlich fester Führung

This European Standard was approved by CEN on 12 March 2002.

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 Management Centre 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 Management Centre has the same status as the official versions.

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

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

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Foreword

This document EN 353-1:2002 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 353-1:1992. 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.

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1 Scope

This European Standard specifies the requirements, test methods, marking, information supplied by the manufacturer and packaging for guided type fall arresters including a rigid anchor line usually attached to or integrated in fixed ladders or rungs adequately adjusted to suitable structures. Guided type fall arresters including a rigid anchor line conforming to this European Standard are sub-systems constituting one of the fall arrest systems covered by EN 363, when combined with a full body harness specified in EN 361 including a front attachment point located appropriately in relation to the fall arrester. Other types of fall arresters are specified in EN 353-2 or in EN 360. 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 (including amendments).

EN 354:2002, *Personal protective equipment against falls from a height – Lanyards.*

EN 355:2002, *Personal protective equipment against falls from a height - Energy absorbers.*

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

3 Terms and definitions

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

3.1

guided type fall arrester including a rigid anchor line

sub-system consisting of a rigid anchor line, a self-locking guided type fall arrester which is attached to the rigid anchor line and a connector or a connector-terminated lanyard. An energy dissipating function may be installed between the fall arrester and the anchor line or an energy absorber may be incorporated in the lanyard or in the anchor line [EN 363]

3.2

guided type fall arrester

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

3.3

rigid anchor line

connecting element specified for a sub-system with a guided type fall arrester. A rigid anchor line may be a rail or a wire rope and is intended for securing to a structure in such a way that lateral movements of the line are limited [EN 363]

3.4**energy absorber**

element or a component of a fall arrest system, which is designed to dissipate the kinetic energy developed during a fall from a height [EN 363]

3.5**lanyard**

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

3.6**attachment/detachment point**

point on the anchor line where the guided type fall arrester can be fitted or detached [EN 363]

3.7**braking force**

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

3.8**arrest distance**

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]

3.9**horizontal distance**

horizontal distance A in metres measured between the front side of the anchor line and the load bearing point of the connector intended to be attached to the full body harness [EN 363]

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

4.2 Materials and construction

A rigid anchor line shall be a rail or a wire rope. The material of a rigid anchor wire rope shall conform to 4.2.3 of EN 354:2002 and its minimum diameter shall be 8 mm or of a value giving the equivalent safety.

In order to limit lateral movements, the rigid anchor line shall be secured to a structure at recommended intervals. If the rigid anchor line is a wire rope, it shall be secured to a structure and the wire rope shall be tightened.

The anchor line shall be so designed that it permits movement of the guided type fall arrester in the specified directions only and that it prevents any unintentional separation of the guided type fall arrester from the anchor line.

All attachment/detachment points of the rigid anchor line 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 anchor line unintended.

A guided type fall arrester shall be equipped with a connector or a connector-terminated lanyard. If the fall arrester is only equipped with a connector, it may be permanently attached to the fall arrester or be detachable from the fall arrester. If the fall arrester is equipped with a lanyard, one end of the lanyard shall be permanently attached to the fall arrester and the other end of the lanyard shall be terminated with a connector. The horizontal distance A shall be specified by the manufacturer and be reported in the information supplied by the manufacturer (see 7 a). A lanyard may be made from synthetic fibre rope, webbing, wire rope or chain. The material of a lanyard shall conform to 4.2.2, 4.2.3 or 4.2.4 of EN 354:2002.

A guided type fall arrester may be equipped with an opening device. If the guided type fall arrester is equipped with an opening device, it shall be so designed that it can only be detached or attached by at least two consecutive deliberate manual actions.

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

Energy absorbers integrated in the lanyard shall conform to EN 355, but need not be tested in accordance with 5.2 of EN 355:2002.

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

4.3 Locking

4.3.1 Locking after conditioning

When the guided fall arrester is 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

If the information supplied by the manufacturer of the guided type fall arrester (see clause 7) claims a feature concerning the use under specific conditions (see 5.1.2.2), the locking function of the fall arrester shall be tested accordingly

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, the rigid anchor line with the attached guided type fall arrester and the lanyard shall sustain a force of at least 15 kN.

4.5 Dynamic performance

When tested as described in 5.3 with a test mass of 100 kg, the braking force F_{\max} shall not exceed 6 kN and the arrest distance H shall not exceed 1 m.

4.6 Corrosion resistance

After the test described in 5.4 has been carried out, the elements of the guided type fall arrester including a rigid anchor line shall be examined. Where necessary to gain visual access to the internal elements, the device shall be dismantled. 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.)

4.7 Marking and information

Marking of the guided type fall arrester including a rigid anchor line shall be in accordance with clause 6.

Information shall be supplied with the guided type fall arrester including a rigid anchor in accordance with clause 7.

5 Test methods

5.1 Locking test after conditioning

5.1.1 Apparatus

5.1.1.1 Apparatus for conditioning

The conditioning apparatus shall conform to 4.8 of EN 364:1992.

5.1.1.2 Apparatus for the locking test

The locking test apparatus consists of a rigid structure 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 5.11.6.1 of EN 364:1992.

5.2 Static strength test

5.2.1 Apparatus

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

5.2.2 Method

The static strength test shall be conducted as described in 5.6.4 of EN 364:1992.

5.3 Dynamic performance test

5.3.1 Apparatus

The dynamic performance test apparatus shall conform to 5.6.1 of EN 364:1992.

5.3.2 Method

The dynamic performance test shall be conducted as described in 5.6.2 of EN 364:1992.

5.4 Corrosion test

The corrosion test shall be conducted as described in 5.13 of EN 364:1992 for a minimum period of 24 h.

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