



**SLOVENSKI STANDARD**  
**SIST EN 353-1:1996**

**01-februar-1996**

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**Osebna varovalna oprema za zaščito pred padci z višine - Varovalne naprave na togo sidranih vodilih**

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

Persönliche Schutzausrüstung gegen Absturz - Steigschutzeinrichtungen mit fester Führung

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

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**Ta slovenski standard je istoveten z: EN 353-1:1992**

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**ICS:**

13.340.60      Zaščita pred padci in zdrsi      Protection against falling and slipping

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**en**

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EUROPEAN STANDARD

EN 353-1:1992

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1992

UDC 614.895.1:62-783.4:620.1:62-777

Descriptors: Work safety, personal protective equipment, accident prevention, protection against fall, safety devices, definitions, specifications, mechanical strength, corrosion resistance, tests

English version

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This European Standard was approved by CEN on 1992-11-30. 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.

The European Standards exist 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.

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## CEN

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

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

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### 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).

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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 rigid anchorage line usually attached to or integrated in climbing ladders or climbing iron tracks adequately adjusted to suitable structures. 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 353-2. 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 353-2    | Personal protective equipment against falls from a height - Guided type fall arresters on a flexible 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 362      | Personal protective equipment against falls from a height - Connectors  |
| 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 rigid anchorage line

"A sub-system consisting of a rigid anchorage line, a self-locking guided type fall arrester which is attached to the rigid 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 fall arrester 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 Rigid anchorage line

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

#### 3.4 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]

#### 3.5 Lanyard

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

#### 3.6 Attachment/detachment point

"A point on the anchorage line where the guided type fall arrester can be fitted or detached." [EN 363]

#### 3.7 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]

#### 3.8 Arrest distance

"The vertical distance  $H$  in metre 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 rigid anchorage line shall be a rail or a wire rope. The material of a rigid anchorage wire rope shall comply with 4.2.3 of EN 354:1992 and its minimum diameter shall be 8 mm or of a value giving the equivalent safety.

In order to limit lateral movements the rigid anchorage line shall be secured to a structure at recommended intervals or both ends of an anchorage wire rope shall be secured to a structure and the wire rope shall be tightened.

The anchorage 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 anchorage line.

All attachment/detachment points of the rigid anchorage 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 anchorage line unintentionally.

The 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. Both ends of the lanyard shall be suitably terminated. The lanyard may be integral with the guided type fall arrester, and the 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.

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

## 4.3 Locking

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### 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 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 the rigid anchorage 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 6,0 kN and the arrest distance H shall not exceed 1,0 m.

#### 4.6 Corrosion resistance

After tested as described in 5.4 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 a rigid structure and a test mass of 5 kg.

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##### 5.1.2 Method

##### 5.1.2.1 Conditioning

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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.

#### 5.2 Static strength test

##### 5.2.1 Apparatus

The static strength test apparatus shall comply with 4.1 of EN 364:1992.

##### 5.2.2 Method

The static strength test shall be conducted as described in 5.5.6 of EN 364:1992.