



SLOVENSKI STANDARD SIST EN 358:2000

01-september-2000

BUXca Yý U
SIST EN 358:1996

CgYVbUj Ufcj UbUcdfYa UnUbUa YghjYj `df]`XYi `]b`nUý]lc`dfYX`dUXW]n`j]y]bY!
DUgcj]nUbUa YghjYj `df]`XYi ždcn]W]g_]`fU_cj]]b`nUb_Y

Personal protective equipment for work positioning and prevention of falls from a height - Belts for work positioning and restraint and work positioning lanyards

Persönliche Schutzausrüstung für Haltefunktionen und zur Verhinderung von Abstürzen - Haltegurte und Verbindungsmittel für Haltegurte

Equipement de protection individuelle de maintien au travail et de prévention des chutes de hauteur - Ceintures de maintien au travail et de retenue et langes de maintien au travail

Ta slovenski standard je istoveten z: EN 358:1999

ICS:

13.340.60 Zæ ää | ^å Á ä&ä Á ä! • ä Protection against falling and slipping

SIST EN 358:2000 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 358:2000

<https://standards.iteh.ai/catalog/standards/sist/81f26437-e7c8-42aa-b81b-0e5ba3461afa/sist-en-358-2000>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 358

December 1999

ICS 13.340.99

Supersedes EN 358:1992

English version

**Personal protective equipment for work positioning and
prevention of falls from a height - Belts for work positioning and
restraint and work positioning lanyards**

Équipement de protection individuelle de maintien au travail
et de prévention des chutes de hauteur - Ceintures de
maintien au travail et de retenue et longes de maintien au
travail

Persönliche Schutzausrüstung für Haltefunktionen und zur
Verhinderung von Abstürzen - Haltegurte und
Verbindungsmitel für Haltegurte

This European Standard was approved by CEN on 27 October 1999.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 358:2000

<https://standards.iteh.ai/catalog/standards/sist/8126457-e7c8-42aa-b81b-0e5ba3461af/sist-en-358-2000>

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

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

Contens

	Page
Foreword	2
Introduction	3
1 Scope	3
2 Normative references	3
3 Definitions	4
4 Requirements	4
5 Testing	6
6 Information supplied by the manufacturer, marking and packing	9
Annex ZA (informativ) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	11

Foreword

This European Standard 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 supersedes EN 358:1992.

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 2000, and conflicting national standards shall be withdrawn at the latest by June 2000.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 358:2000

<https://standards.iteh.ai/catalog/standards/sist/81f26437-e7c8-42aa-b81b-0e5ba3461afa/sist-en-358-2000>

Introduction

When work undertaken at a height is of short duration, or for technical reasons the provision of a working platform, suitable barriers and other similar safeguards is impracticable, then the prevention from falling from a height whilst performing correctly the related work activity can be achieved by the use of personal protective equipment. Equipment when manufactured according to this standard is designed to either secure the user safely in position at the point of work (work positioning); or, prevent the user from reaching a position where a fall can occur (restraint). It is essential to note that such personal equipment by design does not meet the requirements necessary for the purposes of fall arrest, it may be necessary to supplement it with collective or personal means of protection against falls from a height, and its safe use, in practice, relies upon the effective training and instruction of the user.

1 Scope

This European standard applies to belts and lanyards intended for the purpose of work positioning or restraint. It specifies the requirements, testing, marking and information supplied by the manufacturer.

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 137 : 1993

Respiratory protective devices; self-contained open-circuit compressed air breathing apparatus; requirements, testing, marking

EN 354

Personal protective equipment against falls from a height - Lanyards

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

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 marking

EN 892

Mountaineering equipment - Dynamic mountaineering ropes - Safety requirements and test methods

EN 12277 : 1998

Mountaineering equipment - Harnesses - Safety requirements and test methods

ISO 9227

Corrosion tests in artificial atmospheres - Salt spray test

3 Definitions

For the purposes of this standard the following definitions apply.

3.1 Attachment element

A load bearing element provided for the connection of other components.

3.2 Component

A part of a system at a point of sale by the manufacturer, supplied with packaging, marking and information supplied by the manufacturer. Body supports (including waist belts) and lanyards are examples of components of systems. (see EN 363)

3.3 Element

A part of a component or a sub-system. Ropes, webbing, attachment elements, fittings and anchorage lines are examples of elements.

3.4 Restraint

A technique whereby a person is prevented by means of personal protective equipment from reaching zones where the risk of a fall from a height exists.

3.5 Waist belt

A body support that encircles the body at the waist.

3.6 Work positioning

A technique that enables a person to work supported by personal protective equipment in tension in such a way that a fall is prevented.

3.7 Work positioning lanyard

A component used to connect a waist belt to an anchor point, or to a structure by encircling it, as a means of support.

4 Requirements

4.1 Design and construction

4.1.1 Waist belt

4.1.1.1 A waist belt shall be designed to enable the wearer to perform his work without undue discomfort and remain secure against the hazard of a fall from a height. Essential fastening and adjustment elements shall remain accessible to the wearer and shall operate effectively when manipulated by hand.

4.1.1.2 A waist belt shall be not less than 43 mm wide and shall be capable of adjustment to fit the wearer. The waist belt shall have at least one attachment element intended for the connection of load bearing components. The waist belt shall meet the performance requirements specified in 4.2.

4.1.1.3 The fastening and adjustment elements of a waist belt shall be designed and constructed so that when correctly fastened, involuntary release or opening of the element cannot occur. When fastening or adjustment elements can be secured in more than one manner, then the waist belt shall comply with the performance requirements of this standard when the elements are secured in each available manner.

4.1.1.4 It shall be possible to carry out a visual inspection of the waist belt and all its attachments even when the belt is incorporated into a garment or if it is a component in a full body harness.

4.1.1.5 A waist belt not fitted with a back support and intended for work positioning purposes shall be not less than 80 mm wide.

4.1.1.6 A back support when fitted to a waist belt shall be designed to give physical support to the wearer without inhibiting either arm or leg movements. The minimum length of the back support shall be 50 mm longer than half the circumference of the belt when adjusted to the maximum radial length (waist size) specified by the manufacturer. The minimum width of the back support shall be 100 mm for a length of 200 mm centred on the spine of the wearer and shall be a minimum of 60 mm elsewhere.

4.1.1.7 When a waist belt is equipped with shoulder or leg straps they shall not impair use of the waist belt in any way. No attachment element shall be connected to a shoulder or leg strap.

4.1.1.8 When a waist belt is incorporated into other equipment e.g. a full body harness (see EN 361), then the waist belt shall meet the performance requirements specified in 4.2.

4.1.2 Work positioning lanyard

4.1.2.1 A work positioning lanyard of fixed length shall meet the requirements of EN 354. It shall be intended for a specific purpose which shall be detailed by the manufacturer. The length of such a work positioning lanyard shall be the minimum length to achieve its specified purpose.

4.1.2.2 A work positioning lanyard equipped with a length adjustment element shall be capable of adjustment to the minimum length which enables freedom to work and prevents the wearer from falling when the lanyard is incorporated into a specified work positioning system.

4.1.2.3 Every work positioning lanyard shall be so constructed that involuntary release of the lanyard when connected to a waist belt is prevented. The material of the work positioning lanyard shall be terminated in such a way that a length adjuster when fitted cannot be released from the lanyard involuntarily. When a work positioning lanyard can be assembled in more than one manner then the lanyard shall meet the performance requirements when tested with each method of assembly.

4.1.2.4 A work positioning lanyard equipped with a length adjustment element shall be either:

- a) permanently attached to the waist belt at one end and have a connector compatible with an attachment element fitted to the waist belt at the other end;
- b) detachable, in which case there shall be a connector at each end compatible with the attachment element(s) of the waist belt; or,
- c) detachable (and independent), whereby at least one end of the work positioning lanyard shall be capable of attachment to a suitable anchor point; and, the length adjustment element shall be capable of connection to the waist belt attachment element either directly, or via a detachable lanyard of maximum length 0,5 m.

4.1.2.5 The work positioning lanyards described in 4.1.2.4 a) and b) shall have a maximum length of 2 m. The work positioning lanyard described in 4.1.2.4 c) shall be assigned a length of 2 m for the purpose of testing but shall not have a specified maximum length unless a limit is specified by the manufacturer.

4.1.2.6 It shall be possible to carry out a visual inspection of all the elements incorporated into the work positioning lanyard.

4.1.2.7 A work positioning lanyard shall meet the performance requirements of 4.2 when tested with a waist belt of a type with which it is intended to be used.

4.1.3 Materials

4.1.3.1 Webbing and yarns shall be made from virgin 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.

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

4.1.3.3 When a work positioning lanyard is intended for a special application then the material appropriate for that specification (e. g. chain or wire rope) shall be specified by the manufacturer.

4.1.3.4 The material used in the manufacture of a work positioning lanyard shall be known to have a minimum breaking force of 22 kN.

4.1.4 Connectors

Connectors shall comply with EN 362.

4.1.5 Thermal resilience

Equipment which is claimed to be suitable for use in high temperature environments (e. g. fire-fighting exposure) shall be tested in accordance with 6.3.1.4 of EN 137 : 1993 and shall not continue to burn for more than 5 s after removal from the test flame.

4.2 Performance

4.2.1 Static strength

4.2.1.1 A waist belt shall be subjected to the static strength test described in 5.2.1 and shall withstand a force of 15 kN for 3 min without releasing the cylinder.

4.2.1.2 A waist belt with an integral work positioning lanyard shall be subjected to the static strength test described in 5.2.2 and shall withstand a force of 15 kN for 3 min without releasing the cylinder.

4.2.1.3 A work positioning lanyard with an adjustable element shall be subjected to the static strength test described in 5.2.3 and shall withstand a force of 15 kN for 3 min without fracture.

4.2.2 Dynamic strength

A waist belt and a work positioning lanyard shall be tested in combination as described in 5.3 and shall not allow the dummy to be released.

4.2.3 Corrosion resistance

When tested in accordance with 5.4 each metal part of a waist belt and of a work positioning lanyard shall show no evidence of corrosion which could affect its function.

5 Testing

5.1 Test apparatus

5.1.1 Apparatus for the testing of waist belts and work positioning lanyards shall meet the requirements of 4.1 to 4.7 of EN 364:1992; and, in respect of an alternative dummy (with waist) the model shown in Figure 2 of EN 12277:1998 given a mass of 100 kg shall be acceptable.

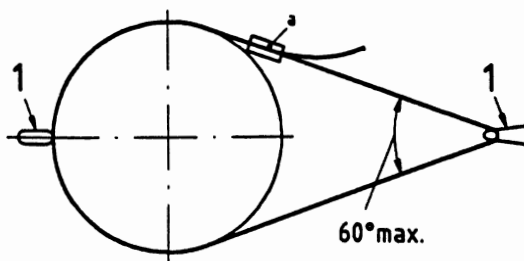
5.1.2 The diameter of the test cylinder specified in 4.3 of EN 364:1992 may be reduced to a minimum of 250 mm to avoid contact between the waist belt buckle and the cylinder.

5.2 Static strength test methods

5.2.1 Waist belt

5.2.1.1 Install the waist belt and test cylinder in the test apparatus as shown in figure 1. Apply the specified test force between the test cylinder and a waist belt attachment element. Maintain the force for 3 min and observe whether the waist belt releases the cylinder.

5.2.1.2 When waist belt attachment elements differ in design, or manner of connection to the belt, then the test shall be repeated for each different type of attachment. A new waist belt shall be used for each test.



1 Attachment element

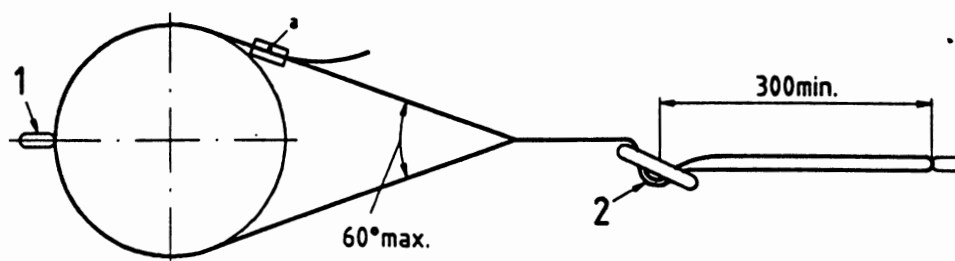
a) The buckle shall not contact the cylinder

Figure 1: Static strength test for a waist belt

5.2.2 Waist belt with integral work positioning lanyard

Install the waist belt with integral work positioning lanyard and test cylinder in the test apparatus as shown in figure 2. Ensure that the length adjustment element is a minimum of 300 mm from the free end of the lanyard and mark its position. Apply a force of 5 kN for a period of 3 min between the test cylinder and the connector at the free end of the work positioning lanyard. Record any movement (slippage) of the lanyard material through the adjustment element. Any movement of the material (slippage) through the adjustment element shall not exceed 50 mm. Release the load and immediately move the adjustment element of the work positioning lanyard to the end stop of the lanyard. Apply the specified test force (15 kN) between the test cylinder and the connector at the free end of the work positioning lanyard. Maintain the force for 3 min and observe whether the waist belt or the work positioning lanyard releases the cylinder.

Dimensions in millimetres



iTeh STANDARD PREVIEW
(standards.iteh.ai)

1 Attachment element

2 Length adjustment element

a) The buckle shall not contact the cylinder

[SIST EN 358:2000](https://standards.iteh.ai/catalog/standards/sist/81f26437-e7c8-42aa-b81b-0e5ba3461afa/sist-en-358-2000)

<https://standards.iteh.ai/catalog/standards/sist/81f26437-e7c8-42aa-b81b-0e5ba3461afa/sist-en-358-2000>

Figure 2: Static strength test for a waist belt with integral work positioning lanyard