SLOVENSKI STANDARD
SIST EN 16434:2014

01-april-2014

Notranja senčila - Zaščita pred nevarnostjo zadušitve - Zahteve in preskusne metode za varnostne naprave

Internal blinds - Protection from strangulation hazards - Requirements and test methods for safety devices

Innere Abschlüsse - Schutz vor Strangulationsgefahren - Anforderungen und Prüfverfahren für Sicherheitseinrichtungen

Stores intérieurs - Protection contre les risques de strangulation - Exigences et Méthodes d'essai pour les dispositifs de sécurité

Ta slovenski standard je istoveten z: **EN 16434:2014**

ICS:

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Internal blinds - Protection from strangulation hazards - Requirements and test methods for safety devices

Stores intérieurs - Protection contre les risques de strangulation - Exigences et méthodes d'essai pour les dispositifs de sécurité

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 16434:2014) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by August 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document is part of a series of standards dealing with blinds and shutters for buildings as defined in EN 12216.

It is the intention that safety devices used in EN 13120 conform to EN 16434 for component testing and EN 16433 for functionality.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies requirements and test methods for safety devices to be used for protection from strangulation in internal blinds as specified in EN 13120 and insect screens as specified in EN 13561.

These devices might be fitted to internal blinds and insect screens at the time of manufacture or for retrofitting.

This European Standard applies to any design of device including the following:

— tensioning devices;

— breakaway devices;

— accumulation devices;

— non tangling devices;

— inner cord stops.

Although at the time this standard has been published, no product standard exists for draperies, requirements and test methods specified in the present standard may be applied to safety devices used in such products.

For clarification purpose, the term “internal blinds” used in the present standard should mean “internal blinds and insect screens”.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12216, *Shutters, external blinds, internal blinds - Terminology, glossary and definitions*

EN 13120, *Internal blinds - Performance requirements including safety*

EN 13561, *External blinds - Performance requirements including safety*

EN 14201, *Blinds and shutters - Resistance to repeated operations (mechanical endurance) - Methods of testing*

EN 71-1, *Safety of toys - Part 1: Mechanical and physical properties*

EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2)*

EN ISO 4892-3, *Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12216, EN 13561 and EN 13120 apply.

4 General

In the testing of safety devices, all related parts associated with the protection from strangulation shall be included.

For example, a breakaway device for an operating ball-chain should cover the ball-chain and the connector if the connector is dependent on the ball diameter. If an inner cord breakaway device is dependent on the type of fabric used in the internal blind then the fabric should also be considered as a part of the safety device.

The number of samples tested shall be representative of the production run. Testing shall be repeated during the production to ensure that performances of devices are maintained. Testing shall be repeated whenever a change occurs in the design, in the composition, in the raw material or in the supplier of the raw material, or in the method of production.

NOTE Guidance on sampling procedures can be found in ISO 2859-1.

Although weights are used in the figures illustrating test methods, any other mechanical, hydraulic or pneumatic equipment may be used. All weights and forces shall be applied with a tolerance of ± 1 %.

Unless specified otherwise, all tests defined in this standard shall be performed at 23 °C ± 5 °C.

Annex A presents a summary of the tests to be carried out on safety devices.

In the context of this standard, the term “cord(s)” used shall mean “cord(s), chain(s), ball-chain(s), tape(s) and similar”.

5 Artificial ageing

5.1 Exposure to UV

Before testing the safety devices, they shall be subjected to the cycle N°6 according to EN ISO 4892-2 or the cycle N°5 according to EN ISO 4892-3 for 500 h.

5.2 Mechanical endurance

The mechanical endurance test is intended to reproduce the operating cycles of internal blinds.

Before testing the safety devices, they shall be submitted to the following endurance test: a mechanical endurance test shall be carried out either according to EN 14201 on a representative internal blind or using a mechanical test equipment reproducing the load conditions of the representative internal blind. 5 000 cycles of extension/retraction shall be considered. The internal blind considered for the test shall be the maximum size for which the safety device is intended.

5.3 Effect of temperature

Before testing the safety devices, they shall be submitted to the following temperature conditions:

— Low temperature: the safety devices shall be submitted to conditioning at an air temperature of 5 °C ± 3 °C for a minimum of 4 h.

— High temperature: the safety devices shall be submitted to conditioning at an air temperature of 60 °C ± 3 °C for a minimum of 4 h.

The relevant tests of Clauses 6 to 11 shall then start at 23 °C ± 5 °C within 15 min.

6 Tensioning device

6.1 General

This clause applies to safety devices intended to maintain continuous cord(s) forming a loop under tension and secured to a fixed surface (e.g. window frame, wall).

The test shall be carried out on the smallest and the largest diameter of cord(s) for which the tensioning device is designed.

The test shall be carried out on sample(s) as defined in Clause 4:

— in their original condition,

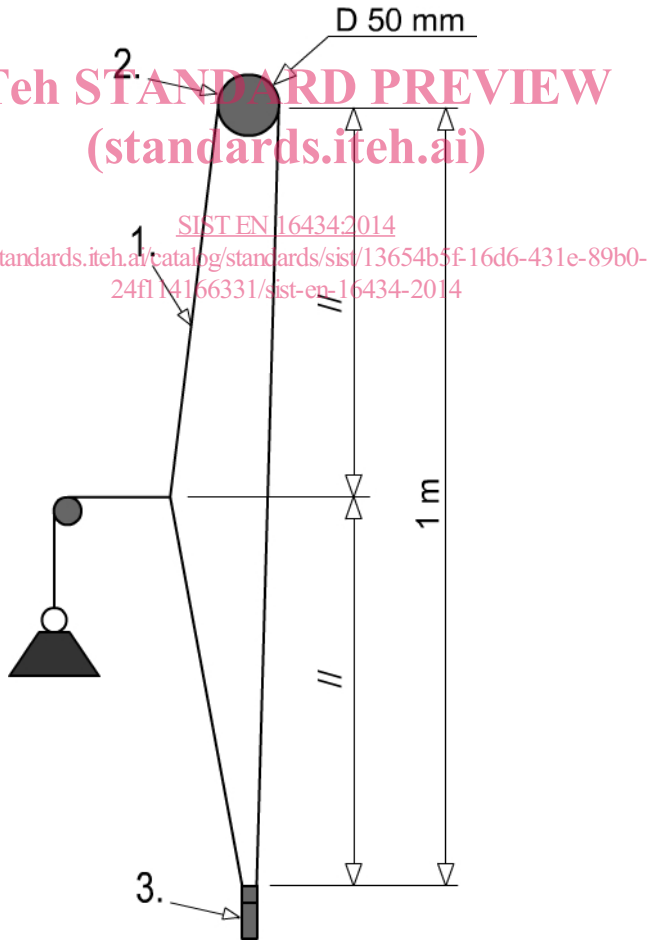
— that have been exposed to UV as specified in 5.1,

— that have been subjected to the mechanical endurance test as specified in 5.2,

— that have been subjected to the effect of temperature as specified in 5.3 (at low temperature and at high temperature).

Where a tensioning device is designed to accept more than one cord, each cord shall be tested separately.

It shall be verified that the fixed retaining device maintaining the cord(s) under tension shall not crack or fracture under the application of a horizontal load applied in the middle of the cord. In addition, it shall be verified that the cord is retained within the device when the device is fixed 10 mm higher than its intended position. The control mechanism shall be made of a pulley of 50 mm diameter. The length of the pull cord shall be 1 m (see Figure 1).



Key

1 pull cord(s)
2 pulley
3 retaining device

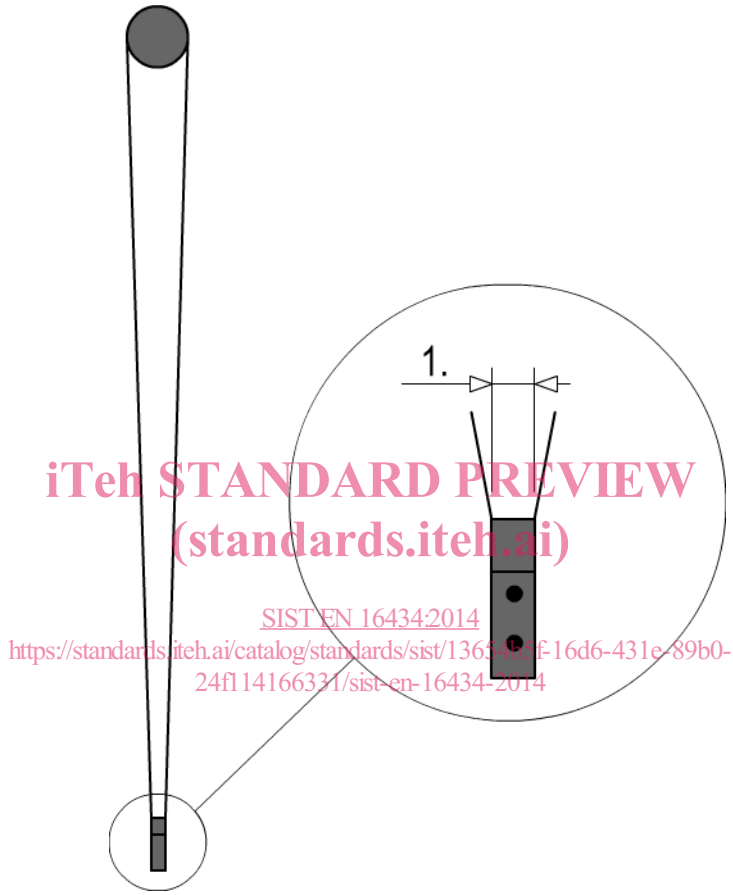
Figure 1 — Principle of the test of tensioning device

6.2 Test methods

6.2.1 Resistance of the retaining device

The tensioning device shall be installed according to the installation instructions of the manufacturer. The retaining device shall be installed at the maximum distance possible from the pulley (original position).

The distance between the two strands of the loop shall be measured at the point of exit from the tensioning device (see Figure 2).



Key

1 distance between the two strands

Figure 2 — Measurement of the distance between the two strands

A horizontal force shall be applied in the plane and at mid-point of the height of the loop (see Figure 1) in a progressive way over a period of maximum 5 s until the load defined in 6.3 is applied to one cord. The load shall be then maintained for 10 s.

The test shall be carried out with the load defined in 6.3.

The test shall be repeated with the force being applied in the direction perpendicular to the plane of the cord.

6.2.2 Retention of cords

The retaining device shall be installed at 10 mm above its original position (see 6.2.1). The cord shall then be pulled with the force defined in 6.3 in all possible directions.

6.3 Requirements

The distance between the two strands of the loop shall be less than 50 mm at the point of exit from the tensioning device.

When tested according to 6.2.1, no part of the fixed tensioning device shall crack or fracture under the application of a load of 60 N to the pull cord(s). The fixed tensioning device shall continue to function as intended.

When tested according to 6.2.2, the cord shall remain in the retaining device when pulled with a force of 60 N in all possible directions.

7 Breakaway device

7.1 General

This clause applies to device(s) intended to connect:

— Case N°1: two ends of the same cord,

— Case N°2: several cords together at any point below the headrail, or

— Case N°3: a cord to a curtain,

and to break away under the application of a load.

As these devices are made of minimum two parts that separate under a specific load, all these parts shall be considered during the tests. As a consequence, these devices shall be considered as a whole and cannot be used separately.

This test shall be carried out on sample(s) as defined in Clause 4:

— in their original condition,

— that have been exposed to UV as specified in 5.1,

— that have been subjected to the following mechanical endurance test:

  The breakaway element shall be engaged and disengaged 20 times at a maximum of 3 min intervals, to ensure that the reengagement of the element is still possible. Engagement and disengagement may be carried out manually.

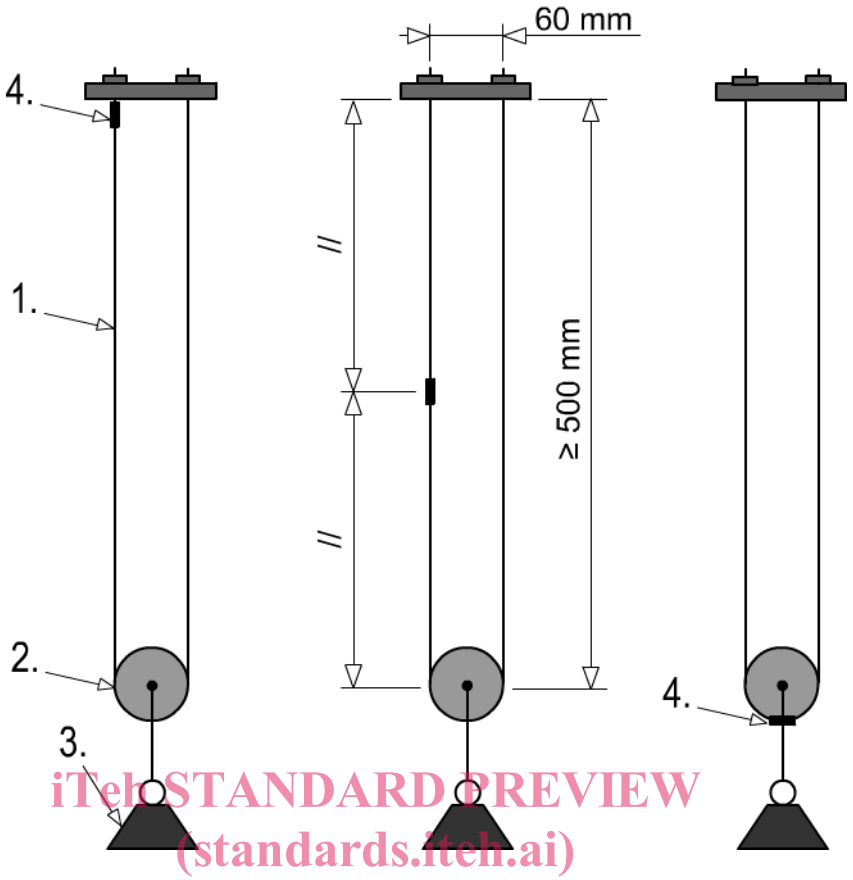
— that have been subjected to the effect of temperature as specified in 5.3 (at low temperature and at high temperature).

7.2 Test method

The safety device shall be installed according to the installation instructions of the manufacturer.

In the case N°1 of 7.1, the two ends of the pull cord shall be permanently secured to the test rig 60 mm apart. The length of the loop shall be at least 500 mm.

The test shall be carried out on the breakaway device, so that each breaking point is successively located at the highest possible position, at the lowest position (at the bottom of the loop) and in the middle of the loop (see Figure 3).



Key

1 looped pull cord
2 test cylinder
3 load
4 breakaway device

Figure 3 — Illustration of the test of a breakaway device on a looped cord

In the case N°2 of 7.1, the test shall be carried out with the breakaway device being positioned at least at 500 mm from the test rig, all cords being secured at the same starting point (see Figure 4). In case more than two cords are connected together, all possible loop combinations shall be tested.