
Notranja senčila - Zaščita pred nevarnostjo zadušitve - Preskusne metode

Internal blinds - Protection from strangulation hazards - Test methods

Innere Abschlüsse - Schutz vor Strangulationsgefahren - Prüfverfahren

Stores intérieurs - Protection contre les risques de strangulation - Méthodes d'essai

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91.060.50

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Doors and windows

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EUROPEAN STANDARD

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English Version

Internal blinds - Protection from strangulation hazards - Test methods

Stores intérieurs - Protection contre les risques de strangulation - Méthodes d'essai

Innere Abschlüsse - Schutz vor Strangulationsgefahren - Prüfverfahren

This European Standard was approved by CEN on 26 October 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 16433:2014) 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of an identical text or by endorsement, at the latest by August 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.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.

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EN 16433:2014 (E)

1 Scope

This European Standard specifies test methods for the verification of the requirements relating to the protection from strangulation.

This European Standard applies to all internal blinds as specified in EN 13120, insect screens as specified in EN 13561 and to blinds in sealed glazed units.

These products may be operated manually, with or without compensating springs, or by means of electric motors (power operated products).

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

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 and awnings - Performance requirements including safety*

3 Terms and definitions

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

3.1

head probe

test probe representing the head of a child

Note 1 to entry: See Figure 2.

3.2

accessibility probe

test probe representing a finger of a child

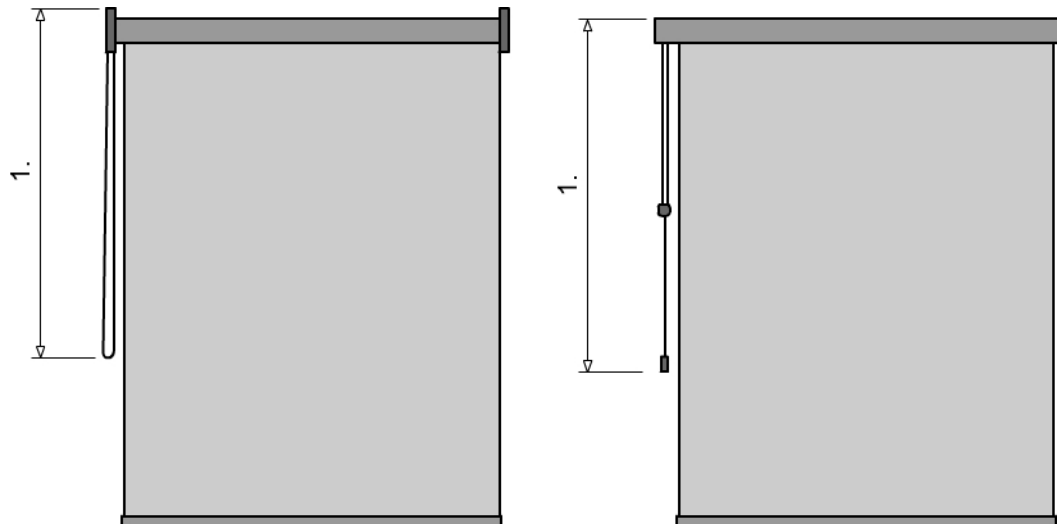
Note 1 to entry: See Figure 3.

3.3

length of pull cord(s), chain(s), ball-chain(s), tape(s) and similar

distance from the highest point of the internal blind to the bottom of the loop of a cord, chain, ball-chain, tape and similar

Note 1 to entry: See Figure 1.

**Key**

- 1 length of pull cord(s), chain(s), ball-chain(s), tape(s) and similar

Figure 1 — Illustration of the length of the pull cord(s), chain(s), ball-chain(s), tape(s) and similar

4 General

All tests defined in this standard shall be performed at $23\text{ °C} \pm 5\text{ °C}$. All dimensions, masses and forces shall be considered with a maximum tolerance of $\pm 1\%$.

Although all figures show free-hanging loads to apply forces, other methods of achieving the same effect may be used. Unless otherwise specified, a pulley of 20 mm diameter shall be used to apply the loads.

Annex A presents a flowchart summarizing tests to be carried out on internal blinds.

The internal blinds shall be installed according to the manufacturer specification so that the installation, i.e. the test rig, the fixing, etc., has no influence on the results of tests.

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

The head probe shall have the dimensions and design specified in Figure 2. It shall be made of a rigid material and shall have a smooth finish.

NOTE This probe is taken from ANSI/WCMA A100.1–2010 and is equivalent to the small head probe defined in CEN/TR 13387:2004 (Table 3.3B) for children aged from 9 to 12 months.

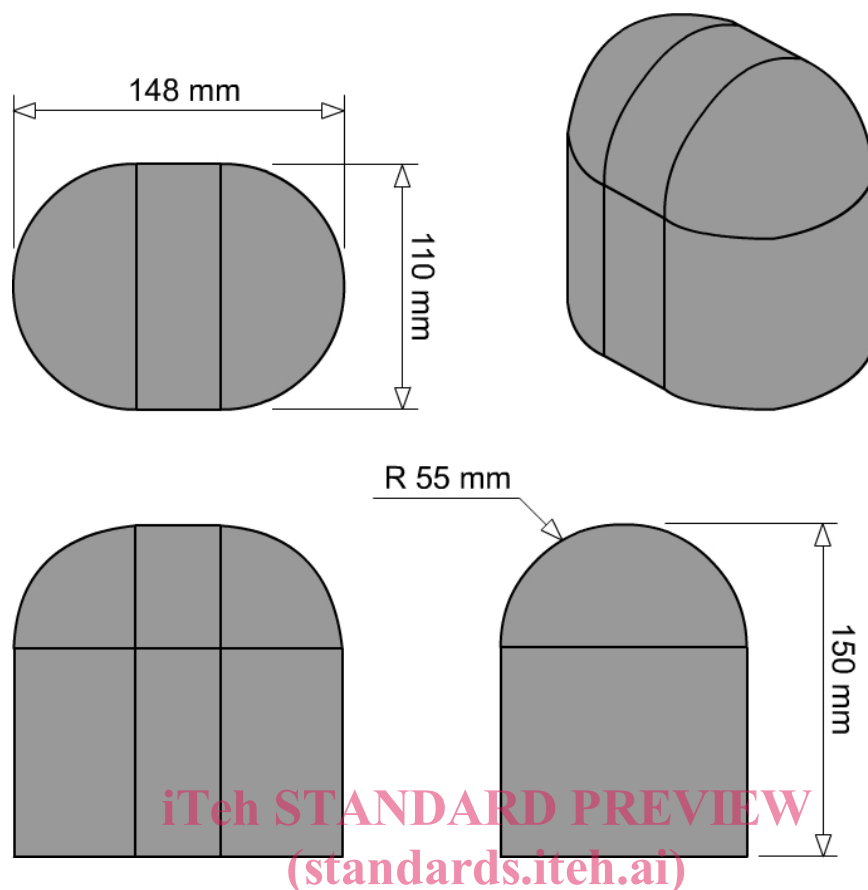


Figure 2 — Head probe dimensions

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The accessibility probe shall be of the dimensions and design specified in Figure 3.

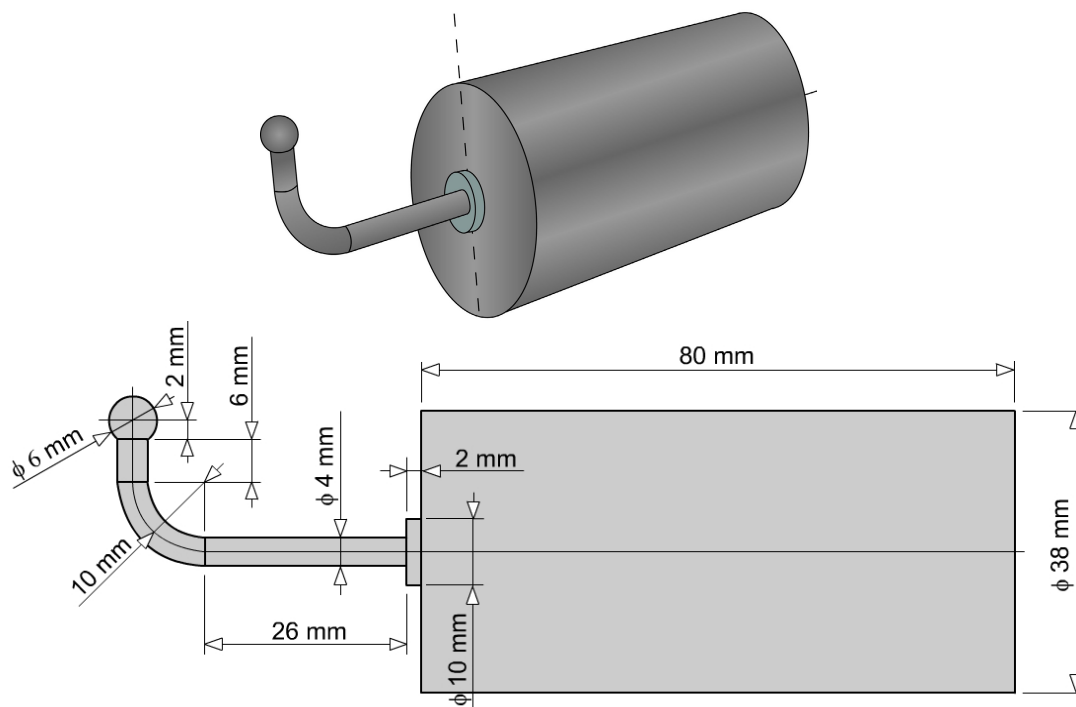


Figure 3 — Accessibility probe

5 Test sample

A test sample shall be representative of a family of products which may cover a variety of dimensions or weight of internal blinds.

In the context of this standard, a family of products is defined with regard to the utilization of common safety device(s) and any design aspect relating to protection from strangulation.

Within a family, the test sample shall be chosen so that the following conditions are fulfilled:

- Tensioning systems: this test shall be carried out on an internal blind with the maximum length of the operating cord(s).
- Breakaway systems: the tests shall be carried out on an internal blind taking into account the maximum number of pull cord(s).
- Accumulation systems: the tests shall be carried out on an internal blind taking into account the maximum length and number of pull cord(s) when the curtain is retracted.
- Inner cord(s): the tests shall be carried out on an internal blind taking into account the maximum distance between two consecutive points of attachment / retention.

Within a family of products, there is no variation in the design of the internal blind that would affect the tangling test.

6 Breakaway system

6.1 General

For the tests defined in 6.2 a test cylinder of 60 mm diameter made of a rigid material shall be inserted into the loop. The total mass specified in EN 13120 shall be gradually applied downwards. This mass shall include the mass of the cylinder. "Gradually" means there shall be no dynamic effect on the cord.

NOTE The test cylinder is intended to represent the neck of a child.

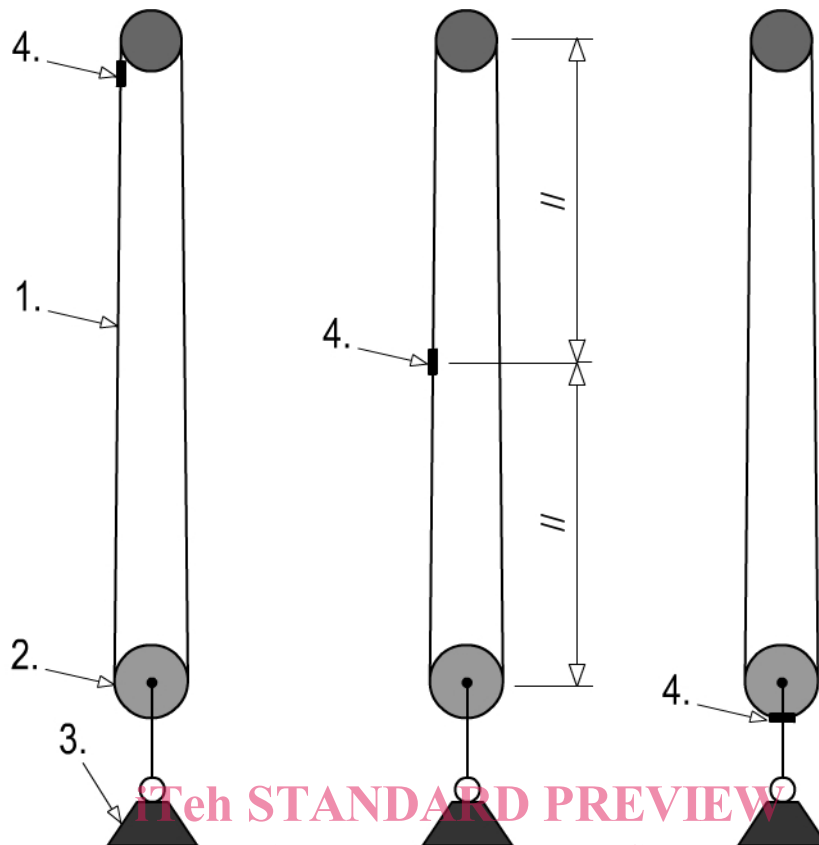
6.2 Test method

6.2.1 Operating system consisting of a pull cord(s) forming a hazardous loop

The length of the pull cord(s) shall be measured.

The test shall be carried out on the breakaway system so that a breakaway device 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 4). After a successful breakaway test, the affected device shall be replaced.

If several breakaway devices are used, they all shall be tested in the positions mentioned above.

**Key**

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

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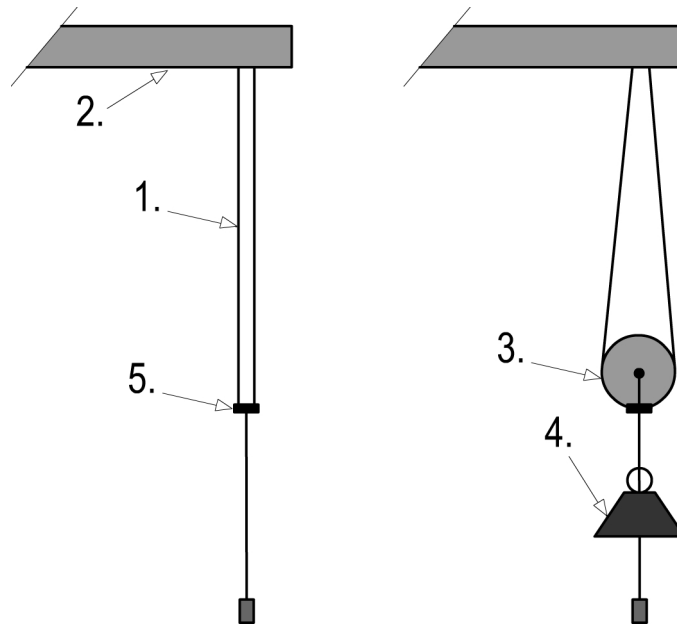
Figure 4 — Illustration of the test of a breakaway system on a looped cord (example of a single breakaway device)

If the performance of the breakaway system is independent of the position of any specific component (e.g. a breakaway device), the test shall be carried out with the loop in any position.

6.2.2 Operating system consisting of free hanging pull cord(s) connected together

The length of the pull cord(s) shall be measured.

The internal blind shall be placed in the fully retracted position (see Figure 5). If more than two cords are connected together, all possible loop combinations shall be tested.

**Key**

- 1 looped pull cord
- 2 headrail
- 3 test cylinder
- 4 load
- 5 breakaway system

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Figure 5 — Illustration of the test of a breakaway system on hanging pull cords connected together (example of two cords)

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6.2.3 Inner cord(s) forming a hazardous loop

The test shall be carried out on the penultimate and the last panel with the internal blind in the fully extended position (see Figure 6).