SLOVENSKI STANDARD
SIST EN 16121:2014+A1:2018

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Nadomešča:
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Shranjevalno pohištvo za javno uporabo - Zahteve za varnost, trdnost, trajnost in stabilnost (vključno z dopolnilom A1)

Non-domestic storage furniture - Requirements for safety, strength, durability and stability

Behältnismöbel für den Nicht-Wohnbereich - Anforderungen an die Sicherheit, Festigkeit, Dauerhaltbarkeit und Standsicherheit

Meubles de rangement à usage collectif - Exigences pour la sécurité, la résistance, la durabilité et la stabilité

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EUROPEAN STANDARD

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EN 16121:2013+A1

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Non-domestic storage furniture - Requirements for safety, strength, durability and stability

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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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European foreword

This document (EN 16121:2013+A1:2017) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

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This document includes Amendment 1 approved by CEN on 27 June 2017.

This document supersedes EN 16121:2013.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1〉 〈A1▐.

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1 Scope

This European Standard specifies requirements for the safety, strength, durability and stability for all types of non-domestic storage furniture.

It does not apply to domestic storage, office storage, industrial storage, kitchen, catering equipment, retail storage [A1) *deleted text* (A1] and industrial storage lockers.

Requirements for strength and durability do not apply to the structure of the building for example the strength of wall hanging cabinets includes only the cabinets and the parts used for attachment. The wall and the wall attachments are not included.

It does not include requirements for the resistance to ageing, degradation and flammability.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-1:2011, *Safety of toys — Part 1: Mechanical and physical properties*

EN 716-2:2008+A1:2013, *Furniture — Children's cots and folding cots for domestic use — Part 2: Test methods*

EN 12150-1:2000, *Glass in building — Thermally toughened soda lime silicate safety glass — Part 1: Definition and description*

EN 12600:2002, *Glass in building — Pendulum test - Impact test method and classification for flat glass*

EN 14072:2003, *Glass in furniture — Test methods*

EN 16122:2012, *Domestic and non-domestic storage furniture — Test methods for the determination of strength, durability and stability*

3 Terms and definitions

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

3.1
accessible parts
parts to which access can easily be gained by the user when in its intended configuration of use and for which the probability of unintentional user contact is high

Note 1 to entry: This includes, but is not limited to:

— the exposed edges and corners of storage units to which the user has access when the doors, drawers and extension elements are closed,

— the corners and edges of handles.

3.2
parts accessible during setting up and folding
parts to which access can only be gained when setting up and folding the furniture

3.3
shear and squeeze points
such points exist if the distance between two accessible parts moving relative to each other can be less than 25 mm or more than 8 mm in any position during movement

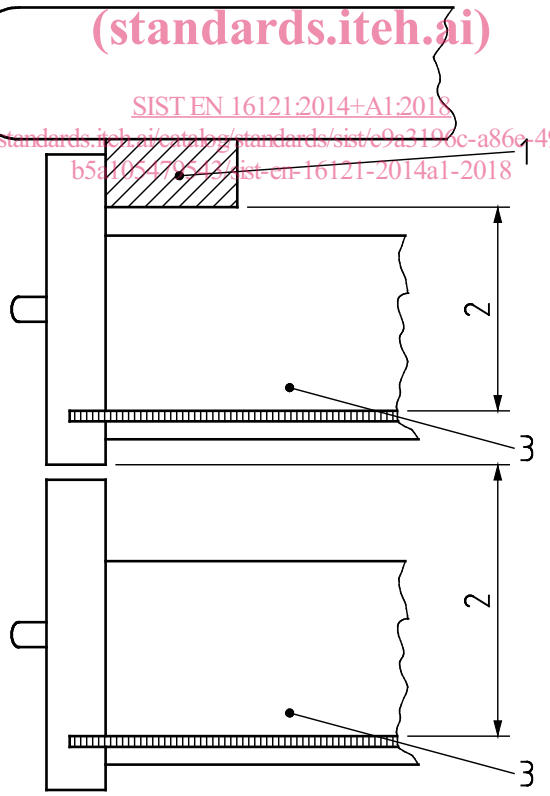
Note 1 to entry: For the definition of shear and squeeze points for furniture intended for use in schools and kindergartens, see A.2.2.

3.4
unit
complete item of furniture including the structure and all components such as drawers, doors and other storage features

3.5
total mass
mass (kg) of the unit, or component plus the load defined in Table 2

3.6
clear height
unobstructed height above the top of the bottom surface

Note 1 to entry: The top of the extension element bottom and the lower edge of the extension element above, or the structure of the unit (see Figure 1).



Key
1 structure of the unit
2 clear height *H*
3 extension element

Figure 1 — Clear height

3.7
levelling device
adjustable device intended to keep the item of furniture perpendicular to the floor

Note 1 to entry: Adjustable feet or similar.

3.8
tray
storage element that is designed, under normal use, to be removed from the storage unit and used independently

3.9
potential energy
Nm
multiplication of the total mass (kg) of the unit (or the part), gravity (m/s^2) and the height (m) above the floor to the centre of gravity

Note 1 to entry: For the purpose of this standard gravity can be considered to be 10 m/s^2.

4 Test sequence and tolerances

4.1 Individual units

When a single unit is supplied for test all the safety tests (5) shall be carried out on the same sample and in the order in which they are listed in this standard. Tests for strength and durability (6) may be carried out on a second sample.

4.2 Range of units

For a range of units featuring similar construction and sharing hardware, or single units with features utilising identical hardware and fixings (e.g. a unit with different size drawers), selected tests shall be carried out on the worst case units/components as detailed in Annex B.

The tests shall be carried out in the order in which they are listed in this standard.

If one unit or component within a range of products does not satisfy the requirements of this standard then compliance for the full range cannot be claimed.

4.3 Tolerances

Unless otherwise stated, the following tolerances are applicable:

— Forces: ± 5 % of the nominal force;

Forces may be replaced by masses. The relationship 10 N = 1 kg may be used.

— Velocities: ± 5 % of the nominal velocity;

— Masses: ± 1 % of the nominal mass;

— Dimensions: ± 1 mm of the nominal dimension;

— Angles: ± 2° of the nominal angle.

NOTE For the purposes of uncertainty measurement, test results are not considered to be adversely affected when the above tolerances are met.

5 Safety requirements

5.1 Principles of safety requirements

5.1.1 General

Safety requirements are based upon the knowledge that storage furniture and its parts are likely to cause injury only when they are heavy and fall through a significant distance. This is possible if floor standing units overbalance, wall or screen mounted units become detached, or heavy parts become detached from units.

Therefore, the tests contained in Table 4 are only considered to affect safety when:

— the height of the centre of gravity of the unit, or any part, is > 650 mm above the floor and the total mass is > 10 kg,

or

— when the potential energy (3.9) of the unit, or any part, is > 65 Nm and the height of the centre of gravity of the unit, or any part, is ≤ 650 mm.

5.1.2 Determination of centre of gravity

The centre of gravity of a component or unit shall be taken as the geometric centre of that unit, except in the case of extension elements, where the geometric centre of the usable volume shall be used.

The height of the centre of gravity above the floor shall be measured for storage furniture or their components when installed according to the manufacturer's instructions. Levelling devices shall be set at their middle position.

Height adjustable components shall be placed in their highest position.

All wall or top hanging units, or components thereof, are considered to have their centre of gravity more than 650 mm above the floor.

5.1.3 Determination of total mass

The total mass is the mass of the component or unit plus the mass supported by it.

Unless the component is conspicuously and durably marked by the manufacturer with a maximum load, the mass of the contents shall be determined according to Table 1, which specifies mass per unit area for shelves and the mass per unit volume for extension elements, baskets and trays, etc.

The volume of fixed baskets and trays shall be taken as the volume contained below their top edge.

The volume of extension elements shall be taken as the area of its bottom multiplied by the clear height (3.6).

Table 1 — Load to determine total mass and load applied to all components other than those undergoing test, excluding stability tests

Part	Unit	Load
Horizontal surfaces, tops, shelves, door baskets, etc.	kg/dm^2	1,5
Extension elements, trays and baskets	kg/dm^3	0,2
Suspended pocket files	kg/dm [a]	4
Clothes rails	kg/dm	4

[a] Measured perpendicular to the plane of the pocket files.

5.2 General safety requirements

The storage units shall be so designed as to minimise the risk of injury to the user.

All parts of the storage unit with which the user comes into contact, during intended use, shall be so designed that physical injury and damage are avoided. This requirement is met when:

a) the accessible parts are rounded or chamfered, and all other edges accessible during intended use are free from burrs and sharp edges;

b) feet of tubular components shall be capped or otherwise closed;

c) open ends of tubular components, accessible during intended use, shall be capped or otherwise closed.

Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.

It shall not be possible for any load bearing part of the storage unit to come loose unintentionally.

All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.

If it can cause injury, all roll fronts and doors sliding vertically including those constructed from hinged elements shall not move by themselves from any position higher than 200 mm measured from the closed position.

In order to avoid pinching points for feet, the safe height for vertically moving units shall be at least 100 mm from the floor.

Subject to the conditions contained within the general safety principles (5.1.1), all extension elements and trays shall not become detached from the unit when subjected to one horizontal pull force of 200 N applied to the handle of the loaded extension element/tray. The extension element/tray shall be loaded in accordance with Table 1, unless the component is conspicuously and durably marked by the manufacturer with a maximum load. In this case the component shall be loaded with the stated maximum load.

5.3 Sheer and squeeze points

5.3.1 Shear and squeeze points when setting up and folding

Unless 5.3.2 or 5.3.3 are applicable, shear and squeeze points that are created only during setting up and folding are acceptable, because the user can be assumed to be in control of his/her movements and to be able to cease applying the force immediately upon experiencing pain.

5.3.2 Shear and squeeze points under influence of powered mechanism

With the exception of the operation of doors, flaps and extension elements, including their hardware, there shall be no shear and squeeze points created by parts of the storage unit operated by powered mechanisms, i.e. springs, gas lifts and motorised systems.

5.3.3 Shear and squeeze points during use

With the exception of operation of doors, flaps and extension elements, including their hardware, there shall be no shear and squeeze points created by forces applied during normal use (see Table 2 and Table 3).