

ILNAS

Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 16121:2023

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

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

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

12/2023



National Foreword

This European Standard EN 16121:2023 was adopted as Luxembourgish Standard ILNAS-EN 16121:2023.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

English Version

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

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

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

This European Standard was approved by CEN on 27 November 2023.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Test sequence and tolerances	8
4.1 Individual units	8
4.2 Range of units	8
4.3 Tolerances	8
5 Safety requirements	8
5.1 Principles of safety requirements	8
5.1.1 General	8
5.1.2 Determination of centre of gravity	9
5.1.3 Determination of total mass	9
5.2 General safety requirements	9
5.3 Holes in tubular/rigid components	10
5.4 Shear and compression points	10
5.4.1 Shear and compression points when setting up and folding	10
5.4.2 Shear and compression points under influence of powered mechanisms	10
5.4.3 Shear and compression points during use	10
5.5 Hinged horizontal lids	11
5.6 Vertical glass components	11
5.7 Stability	11
5.8 Structural safety	13
5.8.1 Structural safety tests	13
5.8.2 Structural safety requirements	15
6 Strength and durability	15
6.1 General	15
6.2 Strength and durability requirements	17
7 Information for use	17
8 Test report	17
Annex A (normative) Test methods for finger entrapment and shear and compression	19
A.1 Finger entrapment	19
A.1.1 Test equipment	19
A.1.2 Test method	20
A.2 Shear and compression	23
A.2.1 Test equipment	23
A.2.2 Test method - Shear and compression points created under the influence of powered mechanisms	23
A.2.3 Test method — Shear and compression points created during normal use	24

Annex B (normative) Requirements for primary schools, kindergartens and similar applications	25
B.1 General	25
B.2 Requirements	25
B.2.1 Shear and compression points	25
B.2.2 Principles of safety requirements	25
B.2.3 General safety requirements	25
B.2.4 Glass	25
B.2.5 Stability	25
B.2.6 Strength and durability – drop test for trays	25
B.3 Additional requirements for furniture for kindergartens	26
B.3.1 Finger entrapment	26
B.3.2 Shear and compression points under the influence of powered mechanisms	26
B.3.3 Shear and compression points during use	26
Annex C (normative) Selecting product from a range of furniture - Range of units	27
Annex D (informative) Guidance of test severity in relation to application for non-domestic storage furniture	28
Annex E (informative) Suggested loads for tests not specified in this document	29
E.1 Suggested loads	29
E.1.1 General	29
E.1.2 Stability	29
E.1.3 Strength and durability	29

European foreword

This document (EN 16121:2023) 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 June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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

This document supersedes EN 16121:2013+A1:2017 and EN 14073-2:2004.

In comparison with the previous version EN 16121:2013+A1:2017 of edition EN 16121:2013 and of edition EN 14073-2:2004, the following technical modifications have been made:

- update on the requirements for finger entrapment reflecting CEN/TR 17202:2018 including an annex containing test methods;
- normative references have been updated;
- requirements for glass have been improved;
- finger entrapment/shear squeeze requirements have been corrected and made applicable to kindergarten only;
- office and laboratory storage have been added to the list of applications;
- the fields of application in relation to the test severity were amended;
- test load added in Annex E.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

1 Scope

This document specifies requirements for the safety, strength, and durability for all types of non-domestic storage furniture including office storage furniture.

It does not apply to domestic storage, industrial storage, kitchen, catering equipment, retail storage, 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.

This document contains five annexes:

- Annex A (normative) Test methods for finger entrapment and shear and compression;
- Annex B (normative) Requirements for schools, kindergartens and similar applications;
- Annex C (normative) Selecting product from a range of furniture;
- Annex D (informative) Guidance of test severity in relation to application for non-domestic storage furniture;
- Annex E (informative) Suggested loads for tests not specified in this document.

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 71-1:2014+A1:2018, *Safety of toys — Part 1: Mechanical and physical properties*

EN 716-2:2017, *Furniture — Children's cots and folding cots for domestic use — Part 2: Test methods*

EN 12150-1:2015+A1:2019, *Glass in building — Thermally toughened soda lime silicate safety glass — Part 1: Definition and description*

EN 12600, *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.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>:

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, including any parts that are less than 1 000 mm above any surface on which a child could stand, but with the exception of doors, flaps and extension elements including their hardware

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 unit

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

3.4 clear height

unobstructed height above the top of the bottom surface

EXAMPLE 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).