



SLOVENSKI STANDARD SIST EN 1727:2001

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Domestic furniture - Storage furniture - Safety requirements and test methods

Wohnmöbel - Schränke und Regale - Sicherheitstechnische Anforderungen und Prüfverfahren

Mobilier domestique - Meubles de rangement - Exigences de sécurité et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 1727:1998**

ICS:

97.140 Pohištvo Furniture

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English version

Domestic furniture - Storage furniture - Safety requirements and test methods

Mobilier domestique - Meubles de rangement - Exigences de sécurité et méthodes d'essai

Wohnmöbel - Schränke und Regale - Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 13 February 1998.

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

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

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 207 "Furniture", the secretariat of which is held by IBN.

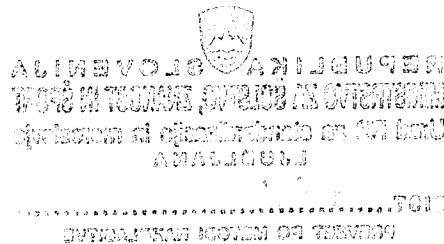
This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 1998, and conflicting national standards shall be withdrawn at the latest by September 1998.

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.

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Introduction

This European standard has been prepared in order to provide assurance that domestic storage furniture complying with the requirements are reasonably safe.

1 Scope

This European standard specifies safety requirements and test methods for all types of domestic storage furniture excluding kitchen furniture (see EN 1153) and special function storage furniture, e.g. for use as a changing unit.

Safety depending on the structure of the building is not included, e.g. the strength of wall hanging cabinets includes only the cabinet and its parts. The wall and the wall attachment are not included.

It is intended to prevent serious injury through normal functional use, as well as misuse that might reasonably be expected to occur.

It should be understood that the test results fulfilling the requirements do not ensure that structural failure will not eventually occur as a result of habitual misuse or after an excessively long period of service.

NOTE: A European Standard "Glass in furniture – Test methods" is under preparation.

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.

ISO 48

Rubbers, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD)

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EN 1153

Kitchen furniture – Safety requirements and test methods for built-in and free standing kitchen cabinets and work tops

3 Definitions

For the purpose of this standard the following definitions apply:

3.1 Free standing unit

A unit not attached or not intended to be attached to the structure of the building.

3.2 Wall mounted unit

A unit supported entirely by one or more walls of the building.

3.3 Top mounted unit

A unit supported by the ceiling.

3.4 Storage area/volume

Spaces in furniture for storage, e.g. in drawers and on shelves, bottoms and tops.

4 General test conditions

4.1 Preliminary preparation

Before any of the tests are commenced, the item shall be old enough to ensure that it has developed its full strength. At least four weeks in normal indoor conditions shall have elapsed between manufacturing (or assembly) and testing in the case of glued joints in timber and the like.

The furniture shall be tested as delivered. If of knock-down type, it shall be assembled according to instructions supplied with the furniture. If the furniture can be assembled or combined in different ways, the most adverse combination shall be used for each test. The same is valid for units that can be combined with other units or components.

The test shall be carried out in indoor conditions, but if during a test the atmosphere temperature is outside the range of 15 °C to 25 °C, the maximum and/or minimum temperature shall be recorded in the test report.

Tighten any assembly fittings before testing. Further retightening shall not take place unless it is specifically required by the manufacturer.

The tests refer to furniture parts with conventional function. Combination of tests may be necessary to cover the properties of multi-function components, e.g. a shelf that can be pulled out on runners shall be tested for strength of shelf supports as well as for strength as a drawer.

4.2 Test equipment

The forces in the static load tests shall be applied sufficiently slowly to ensure that negligible dynamic force is applied.

Unless otherwise specified, the tests may be applied by any suitable device because results are not dependent upon the apparatus.

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4.3 Tolerances

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Unless otherwise stated the following tolerances are applicable:

forces: $\pm 5 \%$
velocities: $\pm 5 \%$
masses: $\pm 0,5 \%$
dimensions: $\pm 1,0 \text{ mm}$.
angles: $\pm 2^\circ$

4.3.1 Positioning

The accuracy for the position of loading pads (5.4) shall be $\pm 5 \text{ mm}$.

4.4 Sequence of testing

The tests shall be carried out in the sequence laid down in this standard.

4.5 Prevention of movement during test

If the unit tends to overbalance during the tests 6.5 to 6.12 load the unit until this tendency stops.

If the unit tends to slide during the tests 6.5 to 6.12 and 6.14 the unit shall be restrained by stops (5.3).

4.6 Loading

During all tests all components intended for storage purposes shall be uniformly loaded according to table 1, except where otherwise specified.

5 Test apparatus

5.1 Floor surface

A rigid, horizontal and flat surface.

5.2 Wall surface

A rigid, vertical and flat surface.

5.3 Stops

Devices to prevent the unit from sliding but not tilting not higher than 12 mm except in cases where the design of the unit necessitates the use of higher stops, in which case the lowest that will prevent the item from sliding shall be used.

5.4 Loading pad

A rigid cylindrical object, 100 mm in diameter (or 50 mm to be used in limited space), having a flat face with 12 mm radius on the edge.

5.5 Apparatus for slam open of drawers

An example for a suitable apparatus as well as calibration instructions are shown in annex A.

5.6 Dead loads

Masses which do not reinforce the structure or redistribute the stresses.

If bags with lead shots, etc. are used, the bags shall be divided into small compartments to prevent the contents from moving during the test.

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5.7 Glass marbles

The marbles shall be between 10 mm and 15 mm in diameter. The marbles shall be used during the test described in 6.15. They shall be in a flexible bag large enough to allow them to move during the test.

5.8 Impact plate

A 1,7 kg impact plate, with a steel plate of 200 mm × 109 mm × 10 mm faced with a 3 mm thick layer of rubber with a hardness of (85 ± 10) IRHD according to ISO 48.

6 Safety requirements and test methods

6.1 Principles of safety requirements

The following safety requirements are based upon the knowledge that domestic storage furniture and its components are likely to cause serious injury only when they are heavy and fall through a significant distance.

Therefore, with the exception of stability of free standing units (6.14), the test methods specified are only applicable to units and components whose centre of gravity is:

at or above 900 mm from the floor and whose total mass (according to 6.3) equals or exceeds 10 kg;
or

at or above 350 mm and whose total mass (according to 6.3) equals or exceeds 35 kg.

The requirements and test methods for stability (6.14) apply only to storage units where the multiplication of the height of the center of gravity (6.2) and the total mass (6.3) exceeds 60 Nm.

6.2 Determination of the centre of gravity

The centre of gravity of a component or unit shall be taken as the geometric centre of the usable volume of drawers and unit and as the geometric centre of doors, flaps and shelves.

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

Height adjustable components of cupboards shall be placed in their highest position.

All wall or top-mounted units or components there of are considered to have their centre of gravity more than 900 mm above the floor, unless specific restrictions are specified by the manufacturer.

6.3 Determination of total mass

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

Unless conspicuously and durably marked by the manufacturer with a maximum allowable contents load, the mass of the contents shall be determined according to table 1, which specifies load per unit area for shelves and the load per unit volume for drawers and baskets.

The volume of baskets shall be taken as the volume contained below its top edge.

The volume of drawers shall be taken as the area of the drawer bottom multiplied by the clear height.

The clear height is the distance between the top of the drawer bottom and the lower edge of the drawer front of the drawer above, or the structure of the unit.

Table 1: Loads

All horizontal storage areas including shelves, bottoms, tops and flaps	0,65 kg/dm ²
Baskets with internal height ≤ 100 mm. All other baskets	0,5 kg/dm ³ 0,2 kg/dm ³
Drawers with ≤ 110 mm clear height. All other drawers	0,35 kg/dm ³ 0,2 kg/dm ³
Hanging rails	4 kg/100 mm
Suspended filing pockets	2,5 kg/100 mm

6.4 Constructional safety requirements

Components or parts of the furniture with which the user may come into contact during normal use shall have no burrs and/or sharp edges, nor shall there be any open-ended tubes.

All movable parts accessible during normal use shall have safety distances in any position during movement of ≤ 8 mm or ≥ 25 mm. This applies to any two elements moving relatively to each other, with the exception of doors (incl. hinges), flaps (incl. hinges) and extension elements, (incl. runners) but including handles.

All drawers whose total mass (according to 6.3) exceeds 10 kg but where safety tests are not required (see 6.1) shall have effective open stops, i.e. they shall resist being pulled out of the carcass once by a horizontal force of 200 N applied to the handle of the loaded drawer, or they shall be supplied with product information to this effect.

6.5 Shelves

Shelves more than 900 mm above the floor shall be secured against falling out.

If the shelf is not restrained by a physical stop this requirement is fulfilled when a horizontal force applied to the middle of the front edge required to initiate movement of the unloaded shelf is more than 50 % of the weight of the unloaded shelf.

No unloaded shelf shall tip when a downwards vertical force of 100 N is applied to any point 25 mm in from the front edge.

6.6 Shelf supports

All supports of the shelf shall be tested.

For units with an indeterminate number of shelves, unless otherwise specified, divide the internal height of the article in millimetres by 300 and take the nearer integer. This number minus 1 shall then be the number of shelves to be tested.

For the shelf being tested, distribute the load uniformly, except at approximately 220 mm from one support, where the impact plate (5.8) shall be tipped over 10 times at a point as close to the support as possible (see figure 1). The striking surface shall be that faced with rubber.

After the test the shelf supports and/or the shelf/carcase shall show no fracture or other damage that can affect the safety.



Dimensions in millimetres

Figure 1: Strength test of shelf supports

6.7 Pivoted doors

This test applies to all doors hinged to the carcass on one vertical side (incl. folding doors).

Load the door as shown in figure 2 with a load of 30 kg.

Swing the door 10 full cycles (back and forth) from a position 45° from fully closed to a position 10° from fully opened, up to a maximum of 135°.

Opening and closing can be done by hand using 3 s to 5 s for opening and 3 s to 5 s for closing.

After the test the door shall remain attached to the unit.