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Shranjevalne enote za domačo uporabo in kuhinje ter delovne plošče – Varnostne zahteve in preskusne metode

Domestic and kitchen storage units and worktops - Safety requirements and test methods

Wohn- und Küchenmöbel - Schränke, Regale und Arbeitsplatten - Sicherheitstechnische Anforderungen und Prüfverfahren

Meubles d'habitation et de cuisine - Eléments de rangement et plans de travail - Exigences de sécurité et méthodes d'essai

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Domestic and kitchen storage units and worktops - Safety requirements and test methods

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Foreword

This European Standard (EN 14749:2005) 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of an identical text or by endorsement, at the latest by February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

This European Standard supersedes EN 1153:1995 and EN 1727:1998.

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

Introduction

This European Standard is a merger of the previous EN 1727, “Domestic furniture — Storage furniture — Safety requirements and test methods”, and EN 1153, “Kitchen furniture — Safety requirements and test methods for built-in and free standing kitchen cabinets and worktops”.

It has been prepared in order to provide assurance that kitchen cabinets and worktops and domestic storage furniture complying with the requirements are reasonably safe.

It should be noted that the assessment of ageing and degradation of materials and the effects caused by heating from appliances are not included, nor is fire safety.

It is the intention of this European Standard to prevent serious injury through normal use, as well as foreseeable misuse. It cannot ensure that structural failure will not eventually occur as a result of habitual misuse.

The co-ordinating sizes for kitchen furniture (including worktops) kitchen appliances, sinks and decorative panels are covered by EN 1116, “Kitchen furniture — Co-ordinating sizes for kitchen furniture and kitchen appliances”.

1 Scope

This European Standard specifies safety requirements and test methods for the structure of all types of kitchen and bathroom storage units and domestic storage furniture that are fully assembled and ready for use, including kitchen and bathroom worktops and movable and non-movable parts and parts made of glass.

This European Standard applies to the storage function only. If the furniture has additional functions, it is essential that it also meets the requirements of the appropriate European safety standard for that function.

It does not apply to units covered by EN 71-1:1998/A7:2002 nor to catering equipment.

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 attachments are not included.

The stability tests for storage furniture (6.6) include an allowance for sloping or uneven floors and the effect of soft carpets.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12150-1:2000, *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*

ISO 7619-2, *Rubber, vulcanized or thermoplastic - Determination of indentation hardness -- Part 2: IRHD pocket meter method*

3 Terms and definitions

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

3.1
free standing unit
unit not intended to be attached to a load bearing structure

3.2
built-in unit
unit intended to be attached to the structure of the building, directly or via other units

3.3
wall-hanging unit
unit intended to be entirely supported by a vertical structure, e.g. wall, panel or screen

3.4
storage area/- volume
spaces in furniture for storage, e.g. in extension elements and on shelves, bottoms and tops

3.5
extension element
component that can be pulled out and pushed in, e.g. baskets, drawers or suspended pocket files

3.6
locking mechanism
mechanism that limits access to the interior of a unit or a storage element. It requires a key or a combination in order to activate it or to make it possible to activate it

4 General test conditions

4.1 Preliminary preparation

The unit/component shall be tested as delivered. At least one week in normal indoor conditions shall have elapsed between manufacturing (or assembly) and testing.

The unit/component shall be assembled and/or configured according to the instructions supplied with it. The most adverse configuration shall be used for each test. For testing a range of related models, only worst case(s) need to be tested. If mounting or assembly instructions are not supplied, the mounting or assembly method shall be recorded in the test report. Fittings shall be tightened before testing and shall not be re-tightened unless specifically required by the manufacturer. If the configuration must be changed to produce the worst-case conditions, the need to re-tighten the fittings shall be recorded in the test report.

Combination of tests may be necessary to cover the properties of multifunction components; e.g. a receding door shall be tested as a sliding door and as a pivoted door.

The tests shall be carried out in indoor ambient conditions at a temperature between 15 °C and 25 °C. If during a test the temperature is outside of the range of 15 °C to 25 °C, the maximum and/or minimum temperature shall be recorded in the test report.

4.2 Test equipment

All tests specified for a particular component shall be carried out on the same sample.

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

The equipment shall be capable of following the deformation of the unit/component during testing, so that the loads are always applied at the specified points and in the specified directions.

The loading pad shall be capable of pivoting in relation to the direction of the applied force. The pivot point shall be as close as practically possible to the loading surface.

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

The forces may be replaced by masses. The relationship of 10 N = 1 kg shall be used.

4.3 Tolerances

Unless otherwise stated, the following tolerances are applicable:

Forces: ± 5% of the nominal force;

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.

The accuracy for the positioning of loading pads shall be ± 5 mm.

4.4 Sequence of testing

The tests shall be carried out in the same sequence as the clauses are numbered in this European Standard.

4.5 Prevention of movement during test

If a free-standing unit tends to overbalance during the tests in 6.3, load the unit until this tendency stops.

If a free-standing unit tends to slide during the tests according to 6.3, 6.5 and 6.6, 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.

For the stability tests (6.6): a rigid and flat surface with a slope of (10 ± 0,5) mm/m.

5.2 Wall surface

A rigid, vertical and flat surface.

5.3 Stops

To prevent the article from sliding but not tilting the stops shall be 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 height that will prevent the item from moving shall be used.

5.4 Loading pad

A rigid object with a flat surface, 100 mm in diameter (or 50 mm to be used in limited space), with a 12 mm front edge radius.

5.5 Apparatus for slam shut/open of extension elements

Apparatus as well as calibration instructions are given in Annex A.

5.6 Masses

Masses shall be designed so that they do not reinforce the structure or re-distribute the stresses.

5.7 Glass marbles

Marbles, made of solid glass, shall be between 10 mm and 15 mm in diameter. They shall be in a flexible bag large enough to allow them to move in the bag during the test.

5.8 Steel impact plate

A 1,7 kg steel impact plate 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 7619-2.

5.9 Loads for filing pockets

Suspended filing pockets shall be loaded with paper or an equivalent alternative.

6 Safety requirements and test methods

6.1 General safety requirements

Components or parts 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 elements moving relatively to each other, with the exception of doors, flaps and extension elements including their hardware. The safety distances also apply to the distance between handles/handgrips and other parts.

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

All extension elements whose total mass (according to 6.2.3) exceeds 10 kg but where safety tests are not required (see 6.2) shall have effective open stops, i.e. they shall resist being pulled out of the unit once by a horizontal force of 200 applied to the handle of the loaded extension element, or they shall be supplied with product information to this effect.

Any external, vertical glass component ≥ 0,1 m² in area, where the smallest dimension is greater than or equal to 200 mm and any part of which is less than 900 mm above the floor, shall not break when tested according to EN 14072, or shall break as specified in EN 14072:2003, Clause 7, C.2 or C.3.

In order to prevent children's heads and necks from being entrapped by lids of storage units, all storage units or storage areas within storage furniture, which are closed by a horizontal lid that is 1 000 mm or less from the floor and weighs 0,25 kg or more shall be fitted with a means of preventing closure under a force less than 8 N, e.g. a self locking stay or a friction stay. In the case of friction stays, product information shall be given for the correct adjustment of the closing friction.

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.

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 if this can cause any injury.

6.2 Principles of safety requirements

6.2.1 General

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

Therefore, with the exception of vertical glass components (6.5) and stability (6.6), the test methods and requirements specified in 6.3 are only applicable to loaded units and components whose centre of gravity is:

— at or above 900 mm from the floor and whose total mass (according to 6.2.3) equals or exceeds 10 kg; or

— at or above 350 mm and whose total mass (according to 6.2.3) equals or exceeds 35 kg.

The requirements and test methods for the stability (6.6) apply only to storage units, where the height to the top of the unit exceeds 600 mm, and when the multiplication of the height of the centre of gravity in m (6.2.2) and the total mass in kg (6.2.3) exceeds the value 6.

6.2.2 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 cupboards or their components when installed according to the manufacturer's instructions. Adjustable feet 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 900 mm above the floor.

6.2.3 Determination of total mass

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

Unless 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 load per unit area for shelves and the load per unit volume for extension elements and baskets.

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

The volume of extension elements shall be taken as the area of its bottom multiplied by the clear height. The clear height is the distance between 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).

Table 1 — Loads

Component	Load
All horizontal storage areas, including shelves, bottoms, tops and flaps	0,65 kg/dm^2
Extension elements and fixed baskets	0,2 kg/dm^3
Clothes rails	4 kg/dm
Suspended filing pockets	2,5 kg/dm[a]

[a] Measured perpendicular to the plane of the filing pockets.