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SIST EN 14073-3:2004

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ICS 97.140

English version

Office furniture - Storage furniture - Part 3: Test methods for the determination of stability and strength of the structure

Mobilier de bureau - Meubles de rangement - Partie 3 :
Méthodes d'essai pour la détermination de la stabilité et de
la résistance de la structure

Büromöbel - Büroschränke - Teil 3: Prüfverfahren zur
Bestimmung der Standsicherheit und der Festigkeit der
Konstruktion

This European Standard was approved by CEN on 27 May 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

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Foreword

This document (EN 14073-3:2004) 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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

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.

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1 Scope

This document specifies test methods for the determination of strength of the structure of free standing or screen and wall hanging office storage furniture as well as stability of free standing units.

This document is applicable to mobile furniture, with the exception of the test described in 5.2 which is replaced by the test described in 6.7 of EN 14074:2004.

This document does not apply to high density mechanized filing systems, rotary filing systems, or plan files.

The tests are intended to simulate overbalancing forces and structural loads, which may occur during normal functional use, as well as misuse that might reasonably be expected to occur.

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.

Safety requirements can be found in EN 14073-2.

Assessment of ageing is not included.

2 Normative references

The following referenced documents are indispensable for the application 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 14074:2004 *Office furniture – Tables and desks and storage furniture - Test methods for the determination of strength and durability of moving parts*

ISO 7619:2004 *Rubber - Determination of indentation hardness by means of pocket hardness meters.*

3 General test conditions

3.1 Preliminary preparation

The tests specified in this standard are designed to be applied to an item of furniture that is fully assembled and ready for use.

Before any of the tests are commenced, the item shall be old enough to ensure that it has developed its full strength.

The furniture shall be tested as delivered. Ready to Assemble furniture shall be assembled according to the instructions supplied with it. If the furniture can be assembled or combined in different ways, the most adverse combination shall be used for each test. This is also applicable to units that can be combined with other units or components.

Wall or screen mounted units shall be installed according to the manufacturer's instructions.

The tests shall be carried out in indoor ambient conditions but, if during a test, the atmosphere temperature is outside the range 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.

3.2 Test equipment

The forces in static load tests shall be applied sufficiently slowly to ensure that the influence of dynamic load is negligible. Unless otherwise stated, the static loads shall be maintained for (10 ± 2) s.

The test equipment shall be capable of following the deformations that may occur during the tests.

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

3.3 Tolerances

Unless otherwise stated:

- all forces shall have an accuracy of ± 5 % of the nominal force;
- all dimensions an accuracy of $\pm 1,0$ mm of the nominal dimension;
- all masses to an accuracy of $\pm 0,5$ % of the nominal mass;

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

The relationship $10\text{N} = 1\text{kg}$ may be used.

3.4 Sequence of testing

Unless otherwise specified, all tests shall be carried out on the same unit and in the sequence laid down in this standard.

For a multi shelf unit, all shelf tests shall be carried out on the same shelf.

4 Test apparatus

4.1 Floor surface

A rigid, horizontal and flat surface.

4.2 Wall surface

A rigid, vertical and flat surface.

4.3 Stops

Devices to prevent the unit from sliding, no 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.

4.4 Masses

Masses shall not reinforce the structure or re-distribute the stresses.

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

Loads shall be evenly distributed unless otherwise specified.

Suspended pocket files shall be loaded with typing paper or a suitable representation of it and where applicable pocket files shall be oriented in the most adverse direction.

4.5 Impact plates

Two steel impact plates, each one faced with a 3mm thick layer of rubber with hardness of (85 ± 10) IRHD according to ISO 7619:2004 :

- a 2,5 kg impact plate, 200 mm x 160 mm x 10 mm, when the height above the shelf is ≥ 300 mm.
- a 1,7 kg impact plate, 200 mm x 109 mm x 10 mm, when the height above the shelf is < 300 mm.

4.6 Loading pad

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

5 Test methods

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5.1 Determination of loading on storage parts

All parts intended for storage purposes shall be uniformly loaded according to Table 1 unless otherwise specified by the manufacturer.

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The volume of drawers shall be calculated from the area of the drawer bottom multiplied by the clear height.

The clear height is the distance between the top surface 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 on Storage Components

Shelves	kg/dm ²	1,5
Clothes rails	kg/dm	5,0
Extension elements	kg/dm ³	0,5
Suspended pocket files	kg/dm ^{a)}	4,0
a) Measured perpendicular to the suspended pocket files		

5.2 Strength of unit

This test is not applicable to screen and wall hanging units or other built-in units attached to the building. Mobile furniture shall be tested according to 6.7 of EN 14074:2004.

Place the unit on the floor surface (4.1) with stops (4.3) located as in figure 1.

Unless otherwise specified by the manufacturer, load all parts that can be used for storage purposes, according to Table 1 (top surfaces shall be loaded as shelves). Close extension elements, flaps, roll fronts and doors.

Apply a horizontal static force of 350 N, 10 times at point A in figure 1, on the vertical centreline of the structure of the unit, 50 mm from the highest point at that position but not higher than 1600 mm from the floor.

NOTE: If the loading point is not on a structural member, a bridging bar should be used.

If the unit tends to overturn in one direction, lower the point of application of that force until tilting is just prevented in that direction only. Record the height.

The test may be carried out in a one stage cycle A, C, B, D or in a two stage cycle A, B followed by C, D.

Inspect the unit before and after the test.