

Hardware for furniture — Strength and durability of hinges and their components — Hinges pivoting on a vertical axis

ICS 91.190

National foreword

This British Standard is the UK implementation of EN 15570:2008.

The UK participation in its preparation was entrusted by Technical Committee FW/0, Furniture, to Subcommittee FW/0/1, Common test methods.

A list of organizations represented on this committee can be obtained on request to its secretary.

UK committee FW/0/1 would like to draw the attention of users to the fact that storage furniture fitted with hardware that satisfies the requirements of this standard will not automatically satisfy the requirements of standards specifying requirements for the safety, strength and durability of moving parts of storage furniture. These currently include: EN 14074, EN 14727, EN 14749, ISO 7170, BS 6222-2 and BS 4875-7.

Therefore, it is the opinion of the UK committee that EN 15570 should be used as a guide to the selection of hardware and that there is no real benefit in specifying EN 15570 in addition to a finished product standard.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Möbelbeschläge - Festigkeit und Dauerhaltbarkeit von Scharnieren und deren Komponenten - Scharniere mit vertikaler Drehachse

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 General test conditions	6
4.1 Preliminary preparation	6
4.2 Test equipment	6
4.3 Application of forces	6
4.4 Tolerances	6
4.5 Sequence of testing	7
4.6 Inspection and assessment of results	7
5 Test apparatus	7
5.1 Masses	7
5.2 Test frame	7
5.3 Particle board properties	9
6 Test procedures and requirements.....	9
6.1 General.....	9
6.2 Overload tests	9
6.2.1 Vertical static overload	9
6.2.2 Horizontal static overload	10
6.3 Functional tests	11
6.3.1 General.....	11
6.3.2 Operating forces	11
6.3.3 1 st vertical static load test	13
6.3.4 1 st horizontal static load	13
6.3.5 Slam shut	13
6.3.6 Determination of reference point for the door sagging	14
6.3.7 Durability	15
6.3.8 Deflection (sagging) test	16
6.3.9 2 nd vertical static load	17
6.3.10 2 nd horizontal static load	17
6.4 Corrosion resistance	17
7 Test report	17
Annex A (normative) Product information system	19
A.1 General.....	19
A.2 Field of application	19
A.3 The mass and size of the door	19
A.4 Adjustment systems and spring and damper mechanisms.....	19
A.5 Corrosion test	19
Annex B (normative) Test parameters	20
Bibliography	23

Foreword

This document (EN 15570:2008) 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 November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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

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

Introduction

The aim of this European Standard is to provide furniture manufacturers, designers and developers with comparable information regarding the performance of all types of hinges pivoting on a vertical axis and their components.

1 Scope

This European Standard specifies test methods and requirements for the strength and durability of all types of hinges pivoting on a vertical axis and their components for all fields of application.

The tests consist of the application of loads, forces and velocities simulating normal functional use, as well as misuse, that might reasonably be expected to occur.

With the exception of the corrosion test in Clause 6.4, the tests are designed to evaluate properties without regard to materials, design/construction or manufacturing processes.

The strength and durability tests only relate to the hinges and the parts used for the attachment, e.g. mounting plates and screws.

The strength and durability tests are carried out in a test frame with specified properties. The test results can only be used as a guide to the performance of a piece of furniture.

The test results are only valid for the hinges tested. These results may be used to represent the performance of production models provided that the tested model is representative of the production model.

With the exception of corrosion, ageing and the influence of heat and humidity are not included.

Annex A (normative): Requirements for product information.

Annex B (normative): Loads and cycles.

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 320:1993, *Fibreboards - Determination of resistance to axial withdrawal of screws*

EN 323:1993, *Wood-based panels - Determination of density*

EN ISO 6270-2, *Paints and varnishes - Determination of resistance to humidity - Part 2: Procedure for exposing test specimens in condensation-water atmospheres (ISO 6270-2:2005)*

3 Terms and definitions

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

3.1

catch device

device that keeps or pulls a door in place, but does not require a second action in order to release it, e.g. a magnetic catch or a self-closing or self-opening mechanism

3.2

damper

mechanism which stops the movement of a door gently

4 General test conditions

4.1 Preliminary preparation

The hinges shall be assembled/mounted/adjusted according to the instructions supplied with it.

If mounting, assembly or adjustment instructions are not supplied, the most adverse configuration shall be used and 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 in the manufacturer's instructions. If the configuration must be changed to produce the worst-case conditions, this shall be recorded in the test report.

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.

Hinges which include structural hardware parts made of hygroscopic plastic materials, e.g. polyamide, shall be conditioned at (23 ± 5) °C and at a relative humidity of (50 ± 5) % for 7 days before testing.

NOTE For accelerating the conditioning process, EN ISO 1110:1997 [1] may be used.

In the case of designs not addressed in the test procedures, the tests shall be carried out as far as possible as described, and deviations from the test procedure recorded in the test report.

Before beginning testing, visually inspect the hinges and components thoroughly. Record any defects to eliminate any assumption that they have been caused by the tests. Carry out measurements if specified.

4.2 Test equipment

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

The equipment shall not inhibit deflection of the test door, i.e. it shall be able to move so that it will allow the deflection of the test door during testing.

4.3 Application of forces

The forces in the static load tests shall be applied sufficiently slowly to ensure that negligible dynamic force is applied. Unless otherwise specified, each force shall be maintained for not less than 10 s and not more than 15 s.

The forces in durability tests shall be applied at a rate to ensure that excessive heating does not occur.

The forces may be replaced by masses. The relation 10 N = 1 kg shall be used for this purpose.

4.4 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;