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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12720:2009+A1

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English Version

Furniture - Assessment of surface resistance to cold liquids

Meubles - Évaluation de la résistance de la surface aux
liquides froids

Möbel - Bewertung der Beständigkeit von Oberflächen
gegen kalte Flüssigkeiten

This European Standard was approved by CEN on 3 January 2009 and includes Amendment 1 approved by CEN on 3 September 2013.

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.

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

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Foreword

This document (EN 12720:2009+A1:2013) 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of an identical text or by endorsement, at the latest by April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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.

This document includes Amendment 1 approved by CEN on 2013-09-03.

This document supersedes A1 EN 12720:2009 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

Informative A1 Annex B A1 provides details of significant technical changes between this European Standard and the previous edition.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 12720:2009+A1:2013 (E)**1 Scope**

This European standard specifies a method for the assessment of the resistance to cold liquids of all rigid furniture surfaces regardless of materials.

It does not apply to leather and textile surfaces.

The test is intended to be carried out on a part of the finished furniture, but can be carried out on test panels of the same material, finished in an identical manner to the finished product, and of a size sufficient to meet the requirements of the test.

The test shall be carried out on unused surfaces.

The type and number of test liquids (Annex A) and the test periods (Table 1) shall be stated in requirement specifications or shall be agreed upon between purchaser and supplier or interested parties.

Annex A (normative) includes a selection of suitable test liquids. Other liquids can be used if required.

A1 *deleted text* **A1**

2 Normative references

A1 The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. **A1**

EN ISO 105 – E04:1996, *Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration (ISO 105-E04:1994)*

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ISO 1065:1991, *Non-ionic surface-active agents obtained from ethylene oxide and mixed non-ionic surface-active agents – Determination of cloud point*

3 Terms and definitions

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

3.1**test panel**

panel including the test surface

NOTE It may be cut from a finished item of furniture or it may be a separate panel produced in the same manner as the finished item of furniture.

3.2**test surface**

part of the test panel

3.3**test area**

part of the test surface under the glass Petri dish (5.2)

4 Principle

Discs saturated with the test liquids are placed on the test surface and covered by a glass Petri dish. After a specified test period, the discs are removed and the test surface is left for 16 h to 24 h. Thereafter, the test surface is cleaned and examined for damages such as discolouration, change in gloss, change in colour, blistering and swelling. The test result is stated in a numerical rating code.

5 Apparatus and materials

5.1 Discs

Discs with a diameter of (25 ± 2) mm, of soft filter paper with a grammage of 400 g/m² to 500 g/m², without colouring agent and glue.

5.2 Glass Petri dish

Glass Petri dish with ground edges and without lips, external diameter (40 ± 2) mm, and height (25 ± 2) mm.

5.3 Tweezers

5.4 Absorbent paper or tissue

5.5 Cleaning cloth iTeh STANDARD PREVIEW

White soft absorbent cloth.

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5.6 Diffuse light source SIST EN 12720:2009+A1:2014

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Light source providing evenly diffused light giving an illumination on the test surface of (1200 ± 400) lx. This may either be diffused daylight or be diffused artificial daylight.

NOTE The daylight should be unaffected by surrounding trees, etc. When artificial daylight is used it is recommended that it should have a correlated colour temperature of (6500 ± 50) K and an R_a greater than 92, by using a colour matching booth in accordance with EN ISO 3668:2001. [1]

5.7 Test liquid

Examples of the test liquids are given in Annex A (normative).

5.8 Deionized or distilled water

5.9 Cleansing solution

Solution containing 15 ml/l of the cleansing agent (5.10) in water (5.8). The solution shall be discarded after one day.

5.10 Cleansing agent

Cleansing agent of the following composition:

- a) 12,5% (m/m) of a sodium primary C₁₀ to C₁₄ polymer alkyl aryl sulphonate,

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- b) 12,5% (*m/m*) polyethoxylated derivatives of primary or secondary C₈ to C₁₆ alcohols with 5 to 15 ethoxylated groups having a cloud point of 25 °C to 75 °C in 1% (*m/m*) aqueous solution (determination of cloud point is described in ISO 1065:1991),
- c) 5,0% (*m/m*) ethanol,
- d) 70% (*m/m*) water (5.8).

The cleansing agent shall be stored in a glass bottle in a cool dark place and shall be used within one year of the day of preparation.

6 Preparation and conditioning**6.1 Conditioning**

Conditioning of test surface shall begin at least one week before testing and shall be carried out in air at a temperature of (23 ± 2) °C and relative humidity of (50 ± 5) %.

The conditioning time shall be stated in the test report.

6.2 Test surface

The test surface shall be substantially flat and of a size sufficient to meet the requirements of Clause 7 regarding the separation of the discs (5.1).

7 Test procedure**7.1 Testing**

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Immediately after conditioning, the test shall be carried out in a test atmosphere of (23 ± 2) °C.

The test surface shall be placed horizontally. It shall be tested with the chosen test liquids at points which shall be not less than 60 mm apart, from centre to centre, and if possible, with centres not less than 40 mm from any edge of the test surface. If there is any reason to suppose that the properties of the test surface may vary, two tests shall be carried out.

The test surface shall be lightly wiped with a cleaning cloth (5.5) before testing.

Use clean tweezers for each type of liquid.

Immerse a disc (5.1) into the test liquid (5.7) between 30 s and 60 s, lift with the tweezers (5.3) and quickly wipe off the edge of the disc once against the edge of the vessel. Quickly place it on the test surface and immediately cover with an inverted glass Petri dish (5.2). The filter paper shall not be in contact with the edge of the glass Petri dish.

Record the position of each test liquid.

After the test period, remove the glass Petri dish and lift off the disc with the tweezers. Do not remove fibres of paper adhering to the test surface. Soak up any remaining test liquid with the absorbent paper (5.4) without rubbing and leave the test surface undisturbed for 16 h to 24 h in the test atmosphere without covering it. The test surface shall be sufficiently protected against dust without limiting in any way the free access of air.

After the above 16 h to 24 h, wash the test surface by lightly rubbing it with the cleaning cloth (5.5) soaked first in cleansing solution (5.9) and then only water (5.8). Finally wipe the surface lightly with a dry cleaning cloth (5.5).

Leave the test surface undisturbed, without covering it, for 30 min in the test atmosphere.

7.2 Test periods

Test periods shall be selected from the Table 1. The periods have been chosen to simulate the range of times that may elapse before a liquid, applied to the surface of furniture, would be removed.

Table 1 — Test periods

Period	Examples under consideration
10 s	Immediate removal
2 min	Quick removal
10 min	After a short time
1 h	After a meal or similar
6 h	After work or other activity
16 h	As soon as possible next day
24 h	After one day
7 days	After one week
28 days	Long-term action

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8 Examination of the test panel

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Carefully examine the test surface using the light source (5.6), for changes caused by the test liquids, e. g. discoloration, change in gloss and colour, blistering, swelling and other defects. For this purpose illuminate the surface separately and examine from different angles, directions and planes, including angle combinations such that the light is reflected from the test surface and towards the observer's eye. The viewing distance shall be 0,25 m to 1,0 m.

Changes caused by the test liquids shall also be determined by touching the surface.