



# SLOVENSKI STANDARD

## SIST EN 1730:2012

01-december-2012

Nadomešča:  
SIST EN 1730:2001

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**Pohištvo - Mize - Preskusne metode za ugotavljanje stabilnosti, trdnosti in trajnosti**

Furniture - Tables - Test methods for the determination of stability, strength and durability

Möbel - Tische - Prüfverfahren zur Bestimmung der Standsicherheit, Festigkeit und Dauerhaltbarkeit

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Mobilier domestique - Tables - Méthodes d'essai pour la détermination de la résistance, de la durabilité et de la stabilité

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**Ta slovenski standard je istoveten z: EN 1730:2012**

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Pohištvo

Furniture

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English Version

**Furniture - Tables - Test methods for the determination of  
stability, strength and durability**

Ameublement - Tables - Méthodes d'essai pour la  
détermination de la stabilité, de la résistance et de la  
durabilité

Möbel - Tische - Prüfverfahren zur Bestimmung der  
Standesicherheit, Festigkeit und Dauerhaltbarkeit

This European Standard was approved by CEN on 18 August 2012.

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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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 1730:2012) 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of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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 supersedes EN 1730:2000.

The main changes with respect to the previous edition are listed below.

- All test methods for seating used in European Standards for furniture have been collated in one document. The document now contains methods that were previously listed in EN 581-3, *Outdoor furniture*, EN 527-3, *Office Work Tables and Desks* and EN 15372, *Non-domestic tables*.
- A durability test for tables with castors has been added.
- A durability test for height adjustment mechanisms has been added.
- Wherever possible test methods have been simplified and clarified for ease of use.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, 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.

**EN 1730:2012 (E)****1 Scope**

This European Standard specifies test methods for the determination of stability, strength and durability of the structure of all types of tables and desks without regard to use, materials, design/construction or manufacturing process.

This European Standard does not apply to changing units which are covered by other European Standards.

Test methods for the assessment of ageing, degradation, and electrical functions are not included.

This European Standard does not apply to the strength and durability of any storage features that are covered by other European Standards.

This European Standard does not include any requirements. Requirements for different end uses can be found in other Standards.

**2 Normative references**

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.

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*

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**3 Terms and definitions**

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

**3.1****structure**

load bearing parts of furniture such as the frame, top and legs

**3.2****ancillary surface**

surface additional to the main surface intended for occasional use as part of the table top

**3.3****duty cycle**

length of time the height adjustable table's drive system may be operated without impairing its useful life

**3.4****levelling device**

device intended to keep the table top horizontal e.g. adjustable feet or similar

## 4 General test conditions

### 4.1 Preliminary preparation

The furniture shall be tested as delivered. Knock-down furniture shall be assembled according to the instructions supplied with it. If the instructions allow the furniture to be assembled or combined in different ways, the most adverse combination shall be used for each test. Knock-down fittings shall be tightened before testing. Further tightening shall not take place unless specifically required by the manufacturer.

Unless otherwise specified by the manufacturer, the sample for test shall be stored in indoor ambient conditions for at least 24 h immediately prior to testing.

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

The test for deflection of table tops (see 6.7), except those made from metal, glass and stone, shall be carried out at a relative humidity of  $(50 \pm 5)$  % and a temperature of  $(23 \pm 2)$  °C.

### 4.2 Application of forces

The test forces in durability and static load tests shall be applied sufficiently slowly to ensure that negligible dynamic load is applied. The forces in durability tests shall be applied sufficiently slowly to ensure that kinetic heating does not occur.

Unless otherwise stated, static loads shall be maintained for  $(10 \pm 2)$  s. Unless otherwise stated, durability loads shall be maintained for  $(2 \pm 1)$  s.

The forces may be replaced by masses. The relationship  $10 \text{ N} = 1 \text{ kg}$  shall be used.

### 4.3 Tolerances

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Unless otherwise stated, the following tolerances are applicable to the test equipment:

Forces:  $\pm 5$  % of the nominal force;

Velocities:  $\pm 5$  % of the nominal velocity;

Masses:  $\pm 1$  % of the nominal mass;

Dimensions:  $\pm 1$  mm of the nominal dimension;

Angles:  $\pm 2^\circ$  of the nominal angle.

The accuracy for the positioning of loading pads and impact plates shall be  $\pm 5$  mm.

NOTE For the purposes of uncertainty measurement, test results are not considered to be adversely affected when the above tolerances are met.

## 5 Test Equipment and Apparatus

Unless otherwise stated, the tests may be applied by any suitable device because the results are not dependent upon the apparatus, except in the case of impact tests where the apparatus described in 5.2 shall be used.

The equipment shall not inhibit deformation nor cause unnatural deformation of the unit/component, i.e. it shall be able to move so that it can follow the deformation of the unit/component during testing.

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With the exception of the horizontal static, durability and stiffness tests, described in 6.2 and 6.4, all loading pads shall be capable of pivoting in relation to the direction of the applied force and the pivot point shall be as close as practically possible to the load surface.

Loading pads for the horizontal static, durability and stiffness tests, described in 6.2 and 6.4, shall not pivot.

With the exception of the horizontal static, durability and stiffness tests described in 6.2 and 6.4, if a loading pad tends to slide, use a slip resistant material between the loading pad and the surface being tested.

**5.1 Vertical impactor**, as shown in Figure 1 and comprised of the following:

**5.1.1 Circular body**, 200 mm in diameter separated from the striking surface by helical compression springs and free to move relative to it on a line perpendicular to the plane of the central area of the striking surface.

The body and associated parts minus the springs shall have a mass of  $(17 \pm 0,1)$  kg and the whole apparatus, including mass, springs and striking surface, shall have a mass of  $(25 \pm 0,1)$  kg.

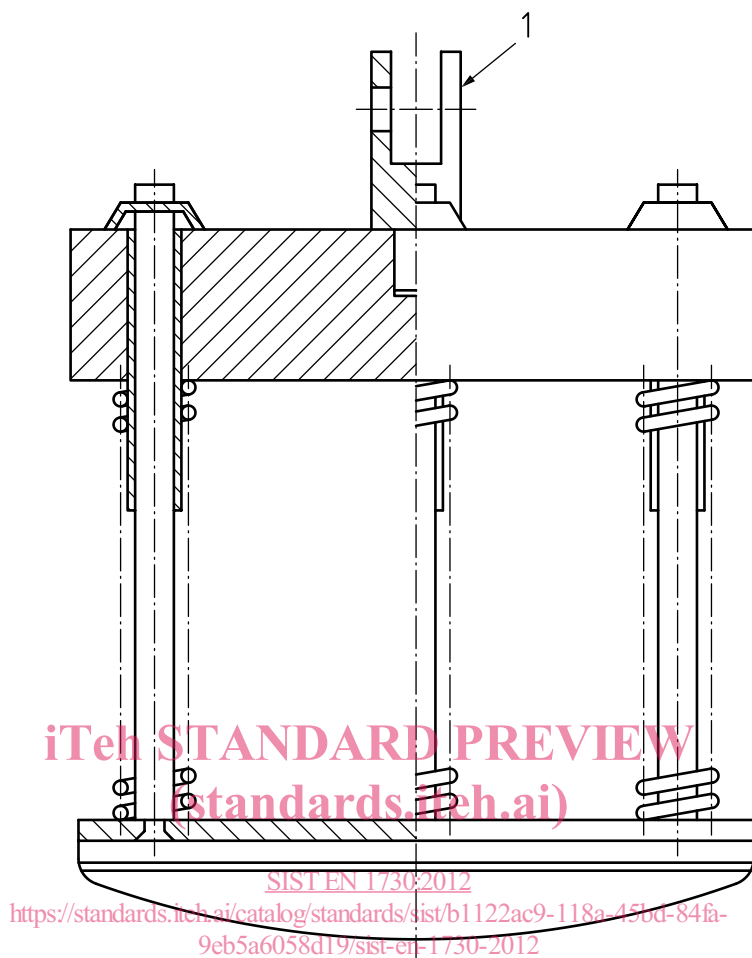
**5.1.2 Springs**, which shall be such that the nominal spring rate of the combined spring system is  $(7 \pm 2)$  N/mm and the total friction resistance of the moving parts is less than 1 N.

The spring system shall be compressed to an initial load of  $(1\ 040 \pm 5)$  N (measured statically) and the amount of spring compression movement available from the initial compression point to the point where the springs become fully closed shall be not less than 60 mm.

**5.1.3 Striking surface**, which shall be a rigid circular object, 200 mm in diameter, the face of which has a convex spherical curvature of 300 mm radius with a 12 mm front edge radius.

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### Key

- 1 joint of lifting device not inhibiting free fall

**Figure 1 — Vertical Impactor**

**5.2 Floor**, horizontal, flat and rigid with a smooth surface.

For the drop test (6.9) the floor shall be faced with a 2 mm thick layer of rubber with a hardness of  $85 \pm 10$  IRHD according to ISO 7619-2.

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**5.3 Stops**, to prevent the article from sliding but not tilting, no higher than 12 mm except in cases where the design of the item necessitates the use of higher stops, in which case the lowest that will prevent the item from moving shall be used.

**5.4 Loading pad**, a rigid cylindrical object, 100 mm in diameter, with a flat, smooth face and a 12 mm edge radius.

**5.5 Foam**, 25 mm thick layer of flexible foam with a bulk density of  $(120 \pm 25) \text{ kg/m}^3$ .

**5.6 Steel test tube**,  $(18 \pm 1,5)$  mm in diameter and  $(1,5 \pm 0,5)$  mm in wall thickness with a length such that a force can be applied at a distance of 2 200 mm above the floor.

**5.7 Test surface for castor durability tests**, horizontal, flat smooth and rigid steel surface.

**5.8 Obstacles for castor durability tests**, steel strips 50 mm wide and 2 mm high with the top edges having a radius of 2 mm, 500 mm apart and parallel on the floor surface and perpendicular to the test direction.

## 6 Test Procedures - Strength and durability

### 6.1 General

Unless otherwise specified, the tests shall be carried out in the configuration most likely to cause failure.

Where the table top can be extended, and the smallest dimension of the unextended table top is less than 300 mm, then the extended configuration shall be considered most likely to cause failure. In this case, the extended configuration is considered to be the main surface.

Levelling devices shall be set as near as possible to 5 mm from the fully open position whilst ensuring the table top is parallel to the floor.

If a test cannot be carried out as specified in this standard, e.g. because a loading pad cannot be used for the application of a force due to the design of a product, the test shall be carried out as far as possible as specified.

Tables supplied with storage features shall be tested with the specified load in the storage item.

### 6.2 Horizontal static load test

Position the table on the test surface, in its normal position of use without extending, or inserting, ancillary surfaces.

Unless otherwise specified, height adjustable tables shall be set to their highest position. Restrain the base of the table by stops placed in all directions at the opposite end to that at which the horizontal test force is first to be applied.

Apply the specified mass to an area of  $(300 \pm 50)$  mm x  $(300 \pm 50)$  mm, or a diameter of  $(300 \pm 50)$  mm, to the approximate centre of the table top.

Apply the specified horizontal force by means of the loading pad (5.4) at the table top level in a direction perpendicular to a line joining the two legs/supports, midway between the legs/supports. See Figures 2a, 2c, 2e, 2g and 2i.

If the table top is not secured to the understructure and the top moves when the specified force is applied, reduce the force sufficiently to just prevent movement. Record the force applied. The applied force shall not be reduced below the minimum specified force.

If the unrestrained base lifts when the specified force is applied, reduce the force sufficiently to just prevent lifting. Record the force applied. The applied force shall not be reduced below the minimum specified force. If unrestrained base lifts at this force, the specified mass applied to the table top shall be increased gradually until this tendency ceases.

Leaving the stops in position, use the same procedure to determine the force to be applied in the opposite direction.

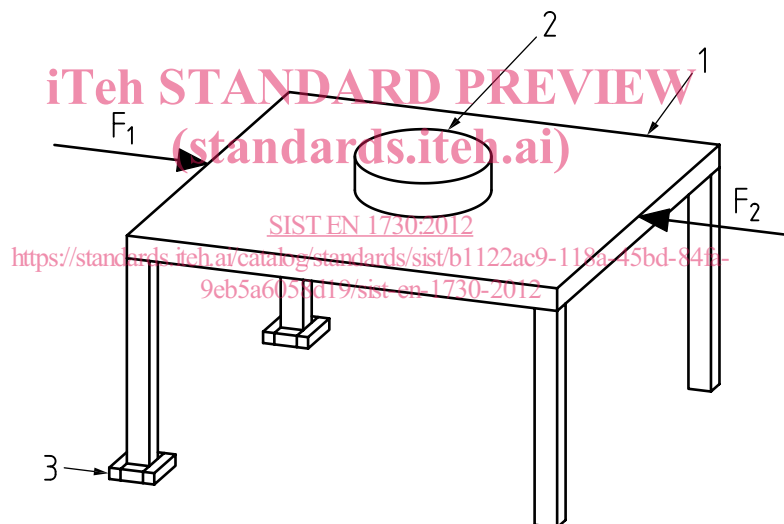
One application of the force in each direction represents one cycle.

Repeat the test method applying the specified horizontal force at the work top level along the line joining the two legs/supports. See Figures 2b, 2d, 2f, 2h and 2j.

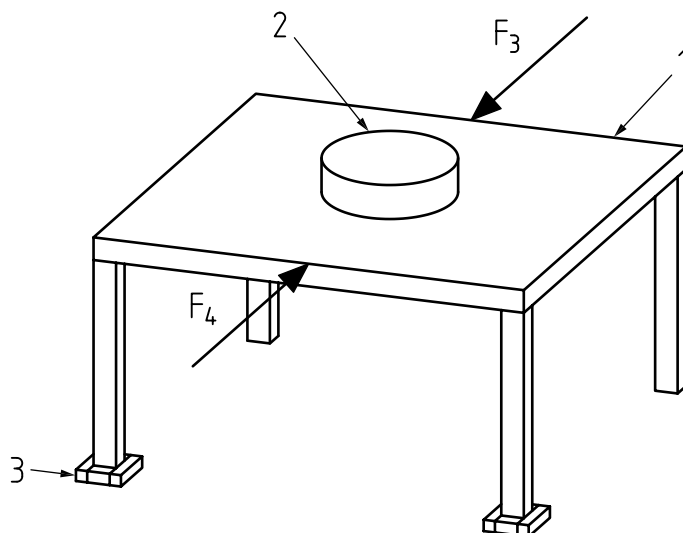
Apply the same force in the opposite direction.

One application of the force in each direction represents one cycle.

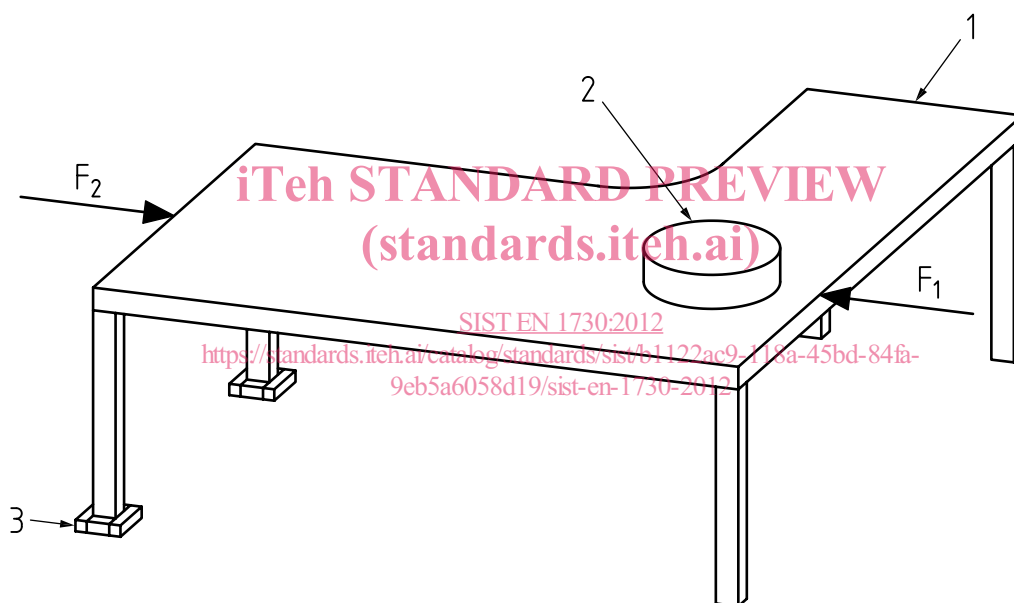
Repeat this procedure until each unique leg design/construction has been tested.



a) Rectangular table – first and second directions



b) Rectangular table – third and fourth directions



c) Irregular shape table - first and second directions