

ILNAS

Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 1729-1:2015

Furniture - Chairs and tables for educational institutions - Part 1: Functional dimensions

Ameublement - Sièges et tables pour
établissements d'enseignement - Partie
1 : Dimensions fonctionnelles

Möbel - Stühle und Tische für
Bildungseinrichtungen - Teil 1:
Funktionsmaße

12/2015

A decorative graphic in the bottom right corner featuring several interlocking gears in shades of blue and yellow. Overlaid on the gears is a vertical column of binary code (0s and 1s) and various mathematical symbols like plus, minus, and multiplication signs.

National Foreword

This European Standard EN 1729-1:2015 was adopted as Luxembourgish Standard ILNAS-EN 1729-1:2015.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

English Version

Furniture - Chairs and tables for educational institutions - Part 1: Functional dimensions

Ameublement - Sièges et tables pour établissements
d'enseignement - Partie 1 : Dimensions fonctionnelles

Möbel - Stühle und Tische für Bildungseinrichtungen -
Teil 1: Funktionsmaße

This European Standard was approved by CEN on 3 October 2015.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

| Contents | Page |
|---|-------------|
| European foreword..... | 3 |
| Introduction | 4 |
| 1 Scope..... | 5 |
| 2 Normative references..... | 5 |
| 3 Terms and definitions | 5 |
| 4 Functional dimensions for chairs and tables..... | 9 |
| 5 Marking..... | 10 |
| 6 Instructions | 10 |
| 7 Approval of range..... | 11 |
| Annex A (normative) Functional dimensions for chairs with slopes between -5° and $+7^{\circ}$ and associated tables | 12 |
| A.1 Functional dimensions and size marks for chairs..... | 12 |
| A.2 Functional dimensions and size marks for tables..... | 19 |
| A.3 Legroom..... | 20 |
| A.4 Requirements for adjustable chairs and tables..... | 20 |
| Annex B (normative) Functional dimensions for high chairs with double-sloped seats and associated tables | 22 |
| B.1 Functional dimensions and size marks for chairs..... | 22 |
| B.2 Functional dimensions and size marks for tables..... | 28 |
| B.3 Legroom..... | 29 |
| B.4 Requirements for adjustable high chairs with double-sloped seats and tables | 30 |
| Annex C (normative) Functional dimensions for standing-height tables..... | 31 |
| Annex D (normative) Functional dimensions for tall chairs with slopes between -5° and $+7^{\circ}$ and associated tables..... | 33 |
| D.1 Functional dimensions and size marks for chairs..... | 33 |
| D.2 Functional dimensions and size marks for tables..... | 39 |
| D.3 Legroom..... | 41 |
| D.4 Requirements for adjustable tall chairs | 42 |
| Annex E (normative) Functional dimensions for stools and associated worksurfaces..... | 43 |
| E.1 Functional dimensions for stools | 43 |
| E.2 Functional dimensions for corresponding worksurface height..... | 45 |
| Annex F (normative) Determination of Point S, buttock zone, seat height, seat angles, seat depth and armrest height..... | 47 |
| F.1 The school chair measuring device (SCMD) | 47 |
| F.2 Using the SCMD | 49 |
| Annex G (informative) Guidance for the calculation of the height of adjustable chairs and tables in Annex A, Annex B and Annex D | 56 |
| Annex H (informative) Guidance for the calculation of the height of chairs and tables in Annex B..... | 57 |
| Annex I (informative) Rationale | 59 |
| Bibliography..... | 70 |

European foreword

This document (EN 1729-1:2015) 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 June 2016 and conflicting national standards shall be withdrawn at the latest by June 2016.

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 1729-1:2006.

Compared to EN 1729-1:2006, the following modifications have been made:

- a) addition of an annex for functional dimensions of tall chairs (Annex D);
- b) addition of an annex for functional dimensions of stools and associated worksurfaces (Annex E);
- c) key dimensions of chairs in Annexes A and D are measured using the school chair measuring device (see Annex F), some of them when the chair is loaded with specified loads;
- d) a rationale for the functional dimensions of chairs and tables is provided (Annex I).

EN 1729 is composed of the following parts:

- *Part 1: Functional dimensions* [the present document];
- *Part 2: Safety requirements and test methods*.

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, 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.

Introduction

This part of EN 1729 is based on the principle that chairs and tables, intended for use in educational institutions for general-purpose education, should be designed to encourage good postures.

This part of EN 1729 takes selected national standards into consideration.

It does not specify design, but only those dimensions which promote good posture for either fixed or adjustable furniture. The dimensional requirements of this European Standard permit various interpretations of design; hence customs, educational practices, technical and financial circumstances of individual countries can be satisfied. It includes a rationale for the determination of functional dimensions.

The minimum dimensions specified are considered as the absolute minimum. They can be exceeded. The maximum dimensions specified are considered as the absolute maximum; smaller dimensions can be used.

EN 1729-2 specifies safety requirements and test methods.

1 Scope

This European Standard specifies functional dimensions and markings for all chairs, stools and tables, for educational institutions, including fixed and adjustable chairs and tables.

It applies to both un-upholstered and upholstered chairs and stools as well as to both non-swivel and swivel chairs. It applies to furniture for use with laptop computers or portable devices.

It does not apply to ranked seating or special purpose workstations.

It does not apply to furniture used by teaching personnel.

Annex A (normative) includes single-sloped chairs and associated tables.

Annex B (normative) includes double-sloped high chairs and associated tables.

Annex C (normative) includes standing-height tables.

Annex D (normative) includes tall chairs and associated tables.

Annex E (normative) includes stools and associated worksurfaces.

Annex F (normative) includes measurement methods.

Annex G (informative) includes guidance on size marks for adjustable chairs and tables.

Annex H (informative) includes guidance on calculating heights of double-sloped chairs and associated tables.

Annex I (informative) includes a rationale for functional dimensions.

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 1729-2, *Furniture - Chairs and tables for educational institutions - Part 2: Safety requirements and test methods*

3 Terms and definitions

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

3.1

median plane

vertical plane running from front to rear through the centre of the seat, dividing the chair into two equal parts

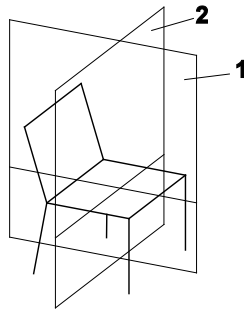
Note 1 to entry: See Figure 1.

3.2

transverse plane

vertical plane perpendicular to the median plane passing through the centre of the seat

Note 1 to entry: See Figure 1.



Key

- 1 median plane
- 2 transverse plane

Figure 1 — Illustration of the median and transverse planes

3.3

most forward point of the backrest (Point S)

most forward point in the specified range of the backrest on the median plane

Note 1 to entry: The specified range of the backrest is shown in Table F.2.

Note 2 to entry: See Figure A.3, Figure B.3 and Figure D.3.

3.4

adjustable furniture

furniture that can be adjusted by the users (pupils), without the need for tools

3.5

multi-size furniture

furniture that is adjustable at installation (not by the users) to change dimensions from one size mark to another

3.6

double-sloped seat

seat intended for sitting using either the front part of the seat (leaning forward) or the rear part of the seat (leaning backward), with the feet resting on a footrest or the floor

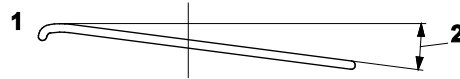
Note 1 to entry: See Figure 5 and Figure B.5.

3.7

inclination of a single-sloped seat and of the front part of a double-sloped seat (α)

angle formed by the front part of the seat and the horizontal

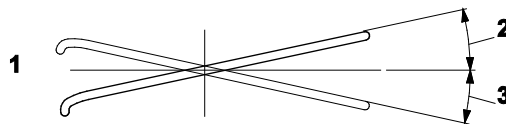
Note 1 to entry: See Figure 2, Figure 3, Figure 4 and Figure 5.

**Key**

- 1 front
- 2 $\alpha < 0^\circ$ (negative for rearward-sloping seats)

Figure 2 — Example of a single-sloped seat with a negative seat angle**Key**

- 1 front
- 2 $\alpha > 0^\circ$ (positive for forward-sloping seats)

Figure 3 — Example of a single-sloped seat with a positive seat angle**Key**

- 1 front
- 2 $\alpha > 0^\circ$
- 3 $\alpha < 0^\circ$

Figure 4 — Examples of a single-sloped tiltable seat