SLOVENSKI STANDARD
oSIST prEN 1729-1:2012

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Pohištvo - Stoli in mize za vzgojno-izobraževalne ustanove - 1. del: Funkcionalne mere

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

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

Meubles - Chaises et tables pour les établissements d'enseignement - Partie 1: Dimensions fonctionnelles

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

Meubles - Chaises et tables pour les établissements d'enseignement - Partie 1: Dimensions fonctionnelles

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

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Foreword

This document (prEN 1729-1:2012) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1729-1:2006.

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 the standard takes selected national standards into consideration.

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

The minimum dimensions specified are considered as the absolute minimum. Consequently, it is recommended to exceed these.

It does not provide dimensional requirements for arm rests, but it does not preclude the use of armrests.

Part 2 of this standard specifies safety requirements and test methods.

1 Scope

This part of EN 1729 specifies functional dimensions and markings for chairs, tables, stools and tall chairs for general educational purposes in educational institutions. It includes fixed height and adjustable furniture as well as standing work height tables for use without chairs.

It applies to all chairs both un-upholstered and upholstered as well as both non-swivel and swivel chairs. It applies to furniture for use with laptop computers or portable devices, but not to special purpose workstations, e.g. laboratories, ranked seating and workshops.

The standard does not apply to furniture used by teaching personnel.

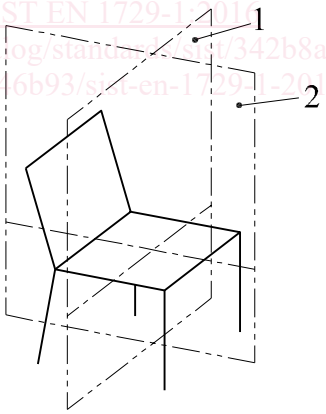
Assessment shall be carried out to Part 1 before testing to EN 1729, Part 2.

2 Terms and definitions

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

2.1
median plane
vertical plane passing through the geometric centre of the seat, dividing the seat from side to side into two equal parts (see Figure 1)

2.2
transverse plan
vertical plane perpendicular to the median plane passing through the geometric centre of the seat, dividing the seat from front to rear (see Figure 1)



Key

1 Transverse plane
2 Median plane

Figure 1 — Illustration of the median and transverse planes

2.3
m point of the backrest (Point S)
most forward point in the specified range of the backrest on the median plane (see Figures A.2 and B.2). For an adjustable, tilting or pivoting backrest, the Point S shall be determined when the backrest is vertical or as near vertical as possible. (see Figures A.3, A.4 and B.3)

2.4
adjustable furniture
furniture that can be adjusted from a seated position by the users (pupils), without the need for tools or excessive force

2.5
multi-size furniture
furniture, which is adjustable at installation (not by the users) to change dimensions from one size mark to another

2.6
double sloped seat
seat intended for seating using either the front part of the seat (leaning forward) or using the rear part of the seat (leaning backward), with the feet resting on a footrest or the floor (see Figures 5 and B.3)

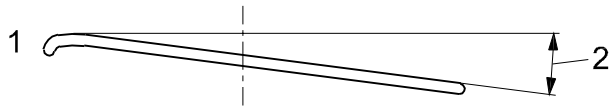
2.7
inclination of a single sloped seat and of the front part of a double sloped seat (α)
angle formed by the front part of the seat and the horizontal. It is measured on the median plane, at the angle between the horizontal and the line passing through the upper part of the front edge and the corresponding point at the rear part of the seat (for single sloped seats) or at the top point of the seat (for double sloped seats) (see Figures 2, 3, 4 and 5)

(α) - is negative for rearwards sloping seats

(α) + is positive for forwards sloping seats

2.8
inclination of the rear part of a double sloped seat (δ)
angle formed by the rear and horizontal part of the seat, determined in the median plane (see Figure 5)

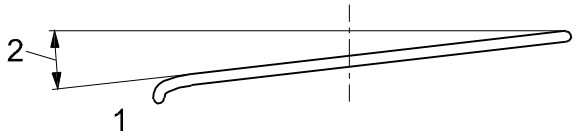
2.9
inclination of the back rest (β)
angle on the median plane between the horizontal and the overall front surface of the back rest above Point S



Key

1 Front
2 α = 0° to -5°

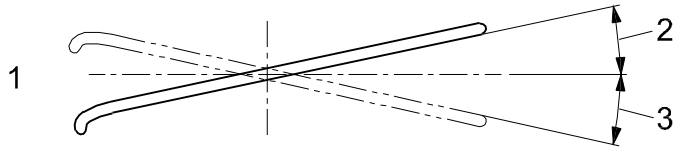
Figure 2 — Example of measuring the angle of a single sloped seat with a negative seat angle



Key

1 Front
2 α = 0° to +5°

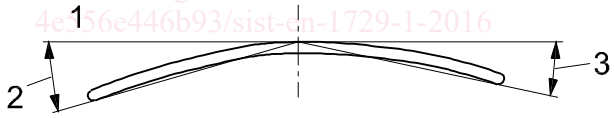
Figure 3 — Example for measuring the angle of a single sloped seat with a positive seat angle



Key

1 Front
2 α = 0° to +5°
3 α = 0° to -10°

Figure 4 — Examples for measuring the angle of a single sloped tiltable seat



Key

1 Front
2 α = 0° to +15°
3 δ = 0° to -10°

Figure 5 — Example for measuring the angle of a double sloped seat (See Annex B)

2.10
stool
seat without backrest or armrests and intended for use for short periods (not intended for continuous work). Any protrusion at the back to the stool below (h_6) shall not be considered to be a backrest

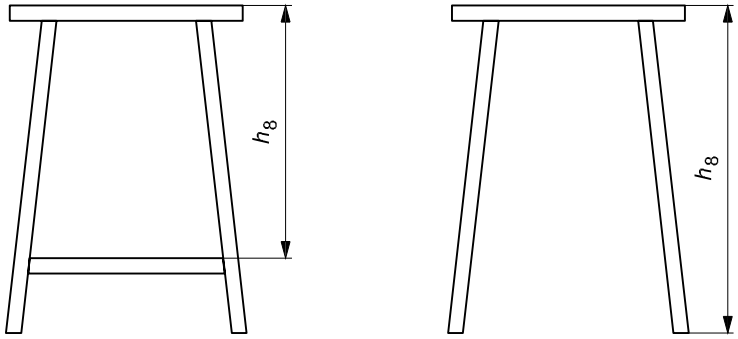
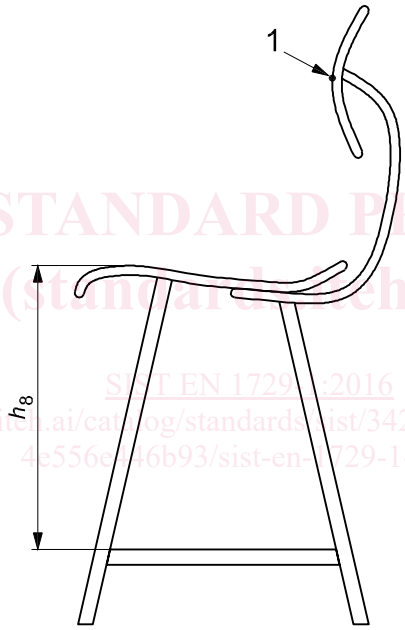


Figure 6 — Stools with and without foot rails

2.11
tall chair
chair higher than the height specified in table A.1 and with a footrest as shown in figure below



Key

1 S-point

Figure 7 — Tall chairs with foot rails

2.12
SCMD
school chair measuring device to be used measuring chair angles and determining S-point and buttock zone. The details of the device is given in Annex H and the method of use is given in Annex G

3 Functional dimensions for chairs and tables

The functional dimensions and corresponding size marks and colour codes for chairs and tables shall be as specified in the normative Annexes A or B. The functional dimensions of standing height tables shall be as specified in normative Annex C. Adjustable and multi-size furniture shall fulfil the requirements specified in Annexes A, B or C.

The stature and popliteal height ranges in Tables A.1, A.2, B.1, B.2 and C.1 do not include any allowance for shoes. All chair and table heights include an allowance for shoes.

4 Marking

The marking of fixed and adjustable chairs and tables shall be legible and indelible and shall include at least the following information:

a) size mark or colour code or both, as specified in Annexes A ,B or C;

b) marking on adjustable furniture of the size marks covered;

c) name and/or trade name and/or mark and address of the manufacturer or his or her authorised representative in full or in abbreviated form, provided the abbreviation enables the manufacturer and/or his or her authorised representative to be identified;

d) date of production by stating at least the year and month of production.

5 Instructions

The instructions shall be submitted with the furniture in the official languages(s) of the country where the furniture is sold. It can be given either affixed to the furniture, on a label, in a leaflet or in the instructions for use. It shall include at least the following:

a) **Size mark reference**: size mark identification shall be referenced to this European standard;

b) **Maintenance instructions**: including information maintenance and cleaning;

c) **Installation instructions for multi-size furniture**: instructions on how to adjust the furniture to fit a specific group of pupils;

d) **Adjustability information**: instructions for the users (pupils) of adjustable furniture shall include information on how to operate the adjustments and information on how to recognise correct settings and therefore a good posture.

e) **Warning concerning the hazard when working with gas lifts**: “Attention: Any repair or service work with gas cylinder shall be carried by trained persons only.”

If the height adjustment is continuous there is no need to show each size mark explicitly. It is sufficient to have a mark showing what size marks it covers and have set of clear instructions on how to adjust the chair to achieve a good posture with drawings. This will apply to tables as well.

NOTE Use of appropriate drawings or pictures should reinforce the information in the instruction leaflets.

Annex A
(normative)

Functional dimensions for chairs with slopes between -5° and +5° and associated tables

A.1 Functional dimensions and size marks for chairs

The dimensions, angles, size marks and colour codes for chairs shall be as given in Table A.1.

The front edge of the seat shall be well rounded in the median plane. The front part of the seat may be curved in the median plane.

The upper and the lower edge of the backrest shall be rounded.

Room for free movement of the buttocks shall be ensured. If the backrest extends below Point S, it shall be angled rearwards such as to maintain the buttock clearance zone as shown in Figure A.2.

The side of the chair or seat shall not be raised to form a ridge higher than 15 mm than the seat surface in the transverse direction of the seat. This shall be measured at the mid point of effective seat depth (t_4).

The determination of the functional dimensions of chairs is specified below. See also Figures A.1 to A.6. If the seat and/or backrest is adjustable or tiltable, the seat shall be set to horizontal or as close as possible and the back rest shall be set to vertical or as close as possible. This shall be measured at seat loading point as shown in EN 1729-2:2012, Clause 5.1 Table 1 Seat and back loading points.

(h_8) The height of the seat is determined on the median plane. It is the vertical distance between the front of the seat and the ground. See Figures A.3 and A.4.

(t_4) The effective depth of seat is determined on the median plane as the horizontal distance between the front edge of the seat and the vertical projection from point S. See Figures A.1 to A.4.

(b_3) The width of the seat is determined as the horizontal distance between vertical lines through the side edges of the seat surface at a distance equal to half of t_4. See Figures A.1 and A.2.

(h_6) The height of the foremost point of the backrest (Point S) is determined on the median plane. It is the vertical distance between the most forward point in the range specified of the backrest and the seat surface. See Figures A.3 and A.4.

(h_7) The height of the backrest is a vertical distance determined on the median plane. Point S must fall within this distance. See Figures A.3 and A.4.

(b_4) The width of the backrest is the greatest horizontal distance between its side edges. See Figure A.1. This shall be measured at point S

(r_2) The horizontal radius of the backrest is determined on the horizontal plane, at the same height as the Point S. See Figure A.1.

(t_5) The depth of the front part of the seat is determined on the median plane. It is the horizontal distance between the front edge of the seat and the apex of the seat. See Figure B.3.

(t_6) The depth of the rear part of the seat is determined on the median plane. It is the horizontal distance between the foremost point of the backrest and the apex of the seat. See Figure B.3.