



**SLOVENSKI STANDARD**  
**oSIST prEN 1335-1:2018**  
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**Pisarniško pohištvo - Pisarniški delovni stoli - 1. del: Mere - Ugotavljanje mer**

Office furniture - Office work chair - Part 1: Dimensions - Determination of dimensions

Büromöbel - Büro-Arbeitsstuhl - Teil 1: Maße - Bestimmung der Maße

Mobilier de bureau - Sièges de travail de bureau - Partie 1: Dimensions - détermination des dimensions

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**DRAFT**  
**prEN 1335-1**

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Will supersede EN 1335-1:2000

English Version

## Office furniture - Office work chair - Part 1: Dimensions - Determination of dimensions

Mobilier de bureau - Sièges de travail de bureau -  
Partie 1: Dimensions - détermination des dimensions

Büromöbel - Büro-Arbeitsstuhl - Teil 1: Maße -  
Bestimmung der Maße

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 207.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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## European foreword

This document (prEN 1335-1:2018) 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.

Compared to EN 1335-1:2000, the following changes have been made:

- deletion of A-deviations;
- modifying the test method of measurement to take ISO 24496 into account;
- improvement of some measurements without impacting the products that are already on the market;
- dimensional requirements are no longer in an Annex;
- introduction of a new Annex A which is a rationale.

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## Introduction

### 0.1 General

The working conditions and the protection of office workers with respect to safety and health necessitates – when necessary - that these standards take ergonomic principles and minimum requirements into account. This applies in particular to the design of Visual Display Equipment (VDU) work stations where EU directive (90/270/EEC) has been implemented. These work stations should be designed to allow different users to carry out a variety of work tasks. The design of furniture and the work station should, therefore, take into account both the variety of work tasks and the needs of the users.

The design of work procedures, work stations and furniture should ensure that the user can move his or her body and limbs frequently in order to avoid muscle stress.

### 0.2 Basis of dimensions and reference seating posture

The dimensions in this standard are based on the conflicting requirements of anthropometric measurements, mechanical design, subjective preference and other factors. The aim of this standard is to provide dimensions for the office work chairs which can accommodate up to 90 % (5<sup>th</sup> to 95<sup>th</sup> %ile) of the European population. Due to the wide variation in population heights and other body dimensions, there will be a variation in the percentage of the office population which the dimensions will accommodate in each country. People with body height outside this range may need furniture of different dimensions or adaptations to existing workstations e.g. a footrest. In this standard dimensions for office work chairs are given for three types of chairs (Types A, B and C). A Type A chair has more adjustability with greater range of adjustments than Type B and C chairs and therefore it is more likely to accommodate people who are at the extremities of the distribution. Annex A (Rationale) of this standard gives guidance on which percentile fit is likely to be for different features of the chair for Type A and Type B chairs. For some dimensions for office work chairs such as seat height, dimensions given in this standard may not fulfill 5<sup>th</sup> to 95<sup>th</sup> percentile requirements. It may be possible to offer specific solutions such as offering two gas cylinders which can cover the 5<sup>th</sup> to 95<sup>th</sup> percentile requirements.

In order to be able to specify acceptable dimensional requirements, a theoretical reference seating posture has been adopted. This posture does not, however, automatically correspond to the ideal or optimum seating posture.

The reference seating posture is as follows:

- The sole of the foot placed on the floor;
- The foot forms an angle of approximately 90° with the lower leg;
- The lower leg is approximately vertical;
- The lower leg forms an angle of approximately 90° with the thigh;
- The thigh is almost horizontal;
- The thigh forms an angle of approximately 90° with the trunk;
- The trunk is erect.

**NOTE** In addition to conventional backrests, those with a mesh support can be measured using this standard. However, if they do not have a mechanically moving lumbar device, they are classified as having a fixed height lumbar support for the purposes of this standard.

It is worth noting that some flexible backrests can deform in such a way that they can automatically provide lumbar support, at the heights suitable for the users from small to large, without the need of having mechanically moving lumbar devices behind the backrest. Hence they can be considered to have a lumbar height adjustment. There are a number of different test methods outside of this standard, in a number of countries, which have been developed to verify adjustability of non-mechanical lumbar adjustments.

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## prEN 1335-1:2018 (E)

### 1 Scope

This document applies to office work chairs. It specifies dimensions of three types of chairs as well as test methods for their determination.

Annex A (informative) contains a Rationale for office chair features and comparison between current published dimensions with European anthropometric data.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 24496:2017, *Office furniture — Office chairs — Methods for the determination of dimensions*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **office chair**

piece of seating furniture for one person, with a back rest, with or without arm rests and with or without headrest

Note 1 to entry: The upper part of the chair, which includes the seat, can rotate in the horizontal plane and can be adjusted in height.

Note 2 to entry: There are three types A, B and C.

#### 3.2

##### **types of chairs listed in Table 3**

##### 3.2.1

##### **type A chair**

adjustable work chair with large range of adjustment

##### 3.2.2

##### **type B chair**

adjustable work chair, some features may be fixed

##### 3.2.3

##### **type C chair**

work chair with limited adjustability

#### 3.3

##### **adjustable**

ability for the user to change the functions of the chair without the need of any tool

Note 1 to entry: The following definitions apply only to seat pad, backrest and armrest pads.



**3.3.1****independently adjustable**

where the component/function can change from one position to another independently of other components/functions

Note 1 to entry: It can be continuous, within a range or in steps and may be lockable.

Note 2 to entry: It shall be noted that some functions need to be lockable in order that the chair can fulfil its functions.

EXAMPLE Seat height, seat depth, back rest height, arm rest height and arm rest width.

**3.3.2****dependently adjustable**

applying to chairs, where the adjustment of one component changes the position of another component, e.g. in so-called syncro-chairs, where the adjustment of the seat angle changes the angle of the back rest

Note 1 to entry: It shall be noted that some functions need to be lockable in order that the chair can fulfil its functions.

EXAMPLE Seat height, seat depth, back rest height, arm rest height and arm rest width.

Note 2 to entry: If a chair is dependently adjustable, the product information shall include a statement that to that effect, so that the user will know that it is not independently adjustable.

Note 3 to entry: Chairs with fixed angle between seat and back and swivel/tilting function are considered as being dependently adjustable.

**4 Dimensions**

The dimensions are given in ISO 24496:2017, as listed in Table 1:

**Table 1 — Definition of dimensions according of ISO 24496:2017**

<b>Dimension</b>	<b>Dimension description</b>	<b>ISO 24496:2017, clause reference</b>
<b>f</b>	Lumbar support height Adjustable height of lumbar support / Fixed height of lumbar support	3.16
<b><math>\gamma</math></b>	Angle between seat and back	3.1
<b>e</b>	Seat inclination Seat pad angle adjustable / Seat pad angle fixed minimum	3.25
<b>a</b>	Seat height, min.	3.23
<b>b</b>	Adjustable depth of the seat / Fixed depth of the seat	3.22
<b>h</b>	Backrest height	3.11

Dimension	Dimension description	ISO 24496:2017, clause reference
<b>q (max.)</b>	Maximum distance from the backrest to the front of the armrests	3.6
<b>p</b>	Height of armrests adjustable / Height of armrests not adjustable	3.3
<b>x</b>	Height of adjustable neck rest or head rest Height of fixed neck rest or head rest	3.21
<b>d</b>	Seat pad width	3.27, 3.28
<b>c</b>	Seat pad depth	3.26
<b>j</b>	Backrest width	3.10
<b>k</b>	Radius of backrest - horizontal	3.13
<b>n</b>	Armrest length	3.4
<b>o</b>	Armrest width	3.7
<b>r</b>	Minimum clearance between armrest assembly when armrest are in widest position	3.15
<b>Z</b>	Adjustable clear distance between armrest pads / Fixed clear distance between armrest pads	3.5
<b>s</b>	Offset of the underframe	3.29

## 5 General measurement conditions

### 5.1 General

Caution shall be used to ensure that any chair movement, adjustments and/or applied forces do not dislodge the CMD causing injury to the user or damage to the CMD.

### 5.2 Preliminary preparation

The chair shall be assembled and/or configured according to the instructions supplied with it. If mounting or assembly instructions are not supplied, the mounting or assembly method shall be recorded in the report.

All adjustments shall be operated through their range of adjustments at least one time before measurements are taken.

If a measurement cannot be taken as specified in the procedures due to the design of the product, it shall be carried out as far as possible as described, and deviations from the measurement procedure shall be recorded in the test report.

The test shall be carried out in indoor ambient conditions. 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.

## **6 Test equipment including CMD**

### **6.1 Floor surface**

A rigid, horizontal and flat surface.

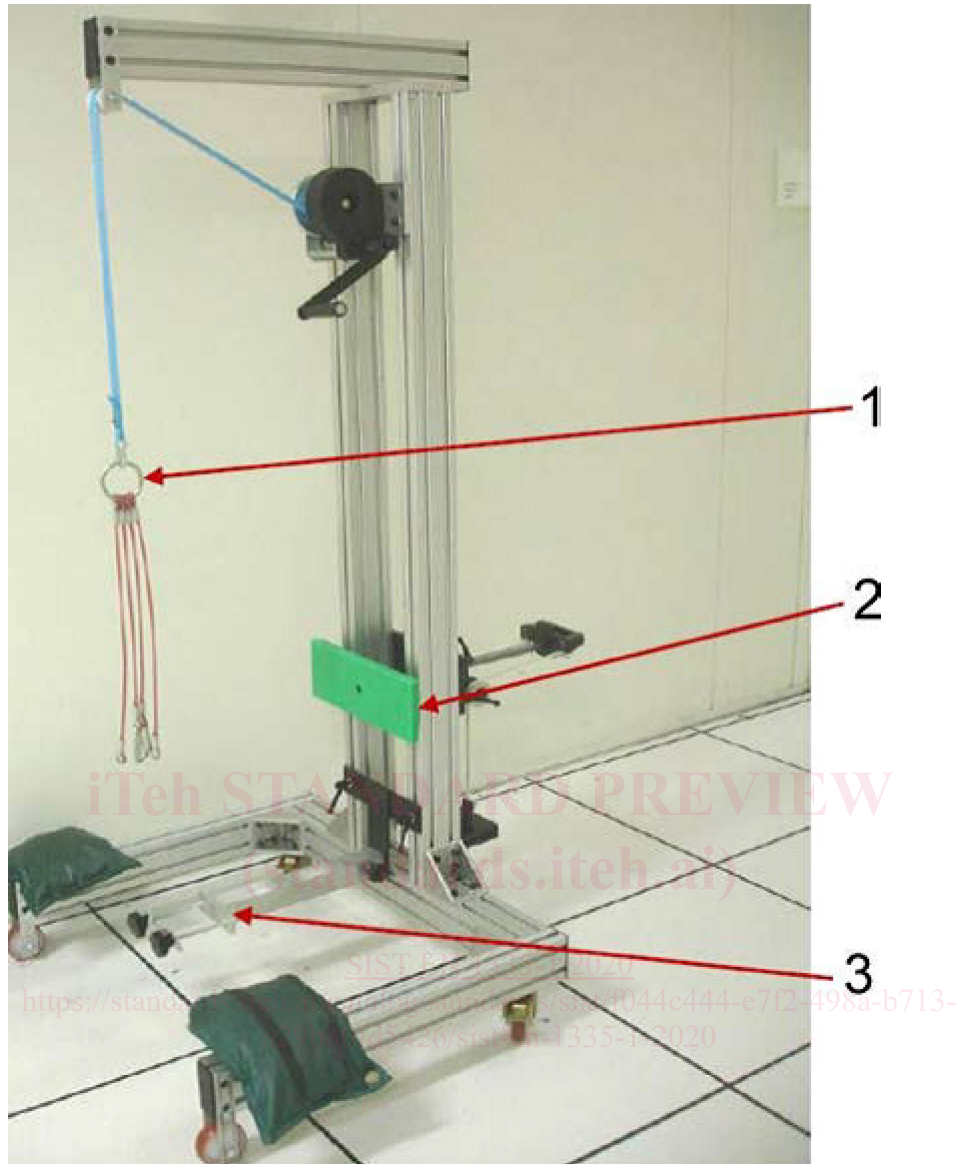
### **6.2 Chair measurement device (CMD) placement fixture**

A fixture which holds the chair in position while applying the horizontal force and lowering the CMD into the chair. This device shall not prevent adjustment of the chair. An example of the device (or devices) is shown in Figure 1 and Figure 2.

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**Key**

- 1 CMD lowering crane
- 2 horizontal force loading device (see ISO 24496:2017, 6.2.2 f))
- 3 chair base restraint mechanism

**Figure 1 — Example of CMD placement fixture without chair**