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**Office furniture — Office work  
chairs — Methods for the  
determination of dimensions**

*Mobilier de bureau — Sièges de travail pour bureau — Méthodes  
pour déterminer les dimensions*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 24496 was prepared by Technical Committee ISO/TC 136, *Furniture*.

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## Introduction

The test methods in this Technical Report are based on the manner in which anthropometric measurements are measured.

Therefore, in order to be able to relate the dimensions of office seating to the anthropometric dimensions, a theoretical reference seating posture has been adopted. This posture does, however, not 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.

Further information on the anthropometric dimensions can be found in ISO 7250 (all parts) and ISO 14738.

This Technical Report is meant to be used in conjunction with requirements documents. Such documents will specify which of the dimensions must be measured. It is possible that not all of the measurements that can be taken by this Technical Report will be specified by the individual requirements document.

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# Office furniture — Office work chairs — Methods for the determination of dimensions

## 1 Scope

This Technical Report specifies methods for the determination of the dimensions of office chairs.

It does not contain dimensional specifications or requirements.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

Not applicable.

## 3 Terms and definitions

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

NOTE They do not describe measurement procedures. Measurement procedures can be found in Clause 6.

### 3.1

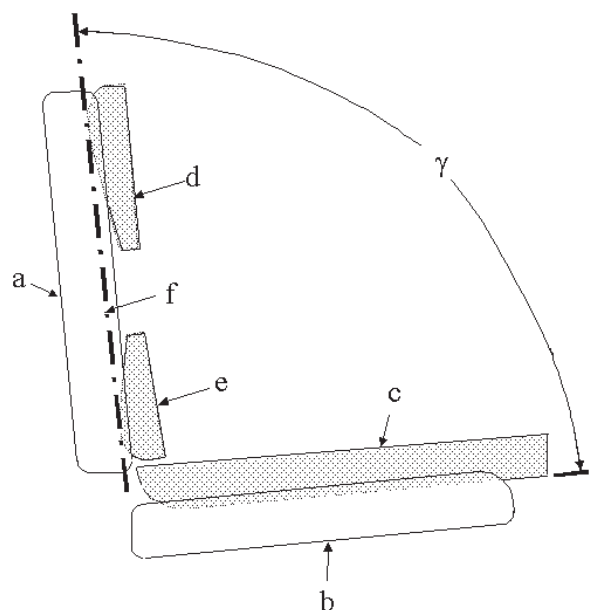
#### angle between backrest and seat

angle  $\gamma$  between the loaded backrest and the loaded seat

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Note 1 to entry: See Figure 1.



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**Key**

- a backrest
- b seat
- c Chair Measuring Device (CMD) buttocks pad [ISO/TR 24496:2012](https://standards.iteh.ai/catalog/standards/sist/1bc512af-2a23-47ba-a7c9-809986960494/iso-tr-24496-2012)
- d CMD thoracic pad <https://standards.iteh.ai/catalog/standards/sist/1bc512af-2a23-47ba-a7c9-809986960494/iso-tr-24496-2012>
- e CMD pelvic pad
- f backrest line
- γ angle between backrest and seat

**Figure 1 — Angle between backrest and seat**

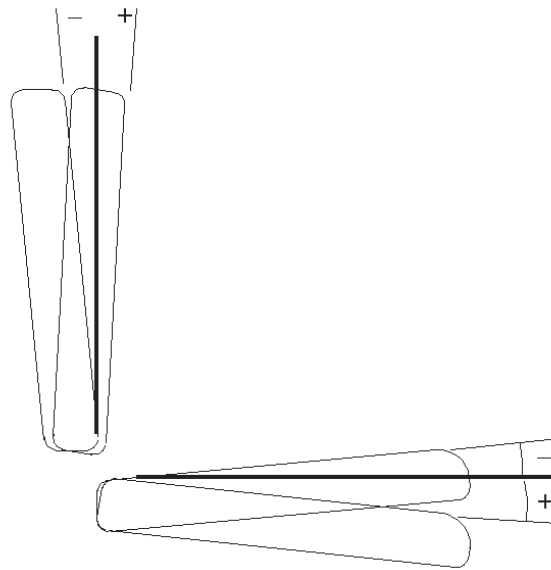
**3.2**

**angle – origin and sign convention**

angle sign convention viewed from the right side of the chair is: clockwise angle rotation is positive (+); counter-clockwise is negative (-)

Note 1 to entry: See Figure 2.





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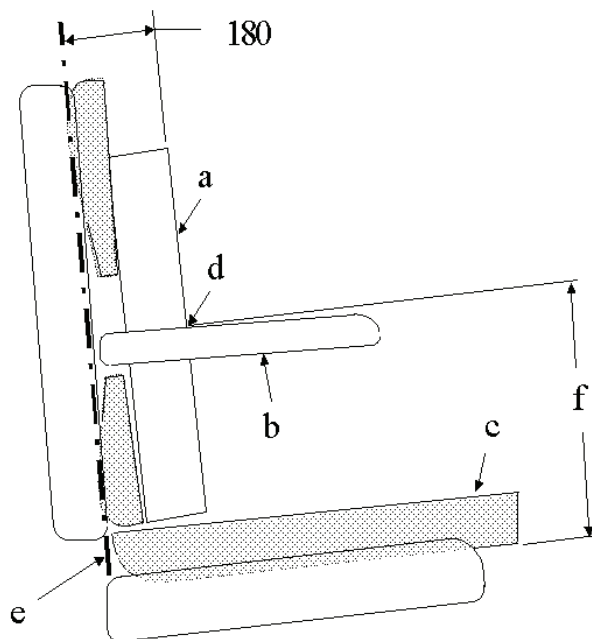
Figure 2 — Angle - origin and sign convention

### 3.3

#### armrest height

distance from the top surface of the armrest to the bottom of the loaded CMD buttocks pad parallel to the backrest line at a distance of 180 mm from the backrest line

Note 1 to entry: See Figure 3.



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**Key**

- a CMD vertical member
- b armrest
- c CMD buttocks pad
- d intersection of projection of vertical member front face and armrest
- e backrest line
- f armrest height

**Figure 3 — Armrest height**

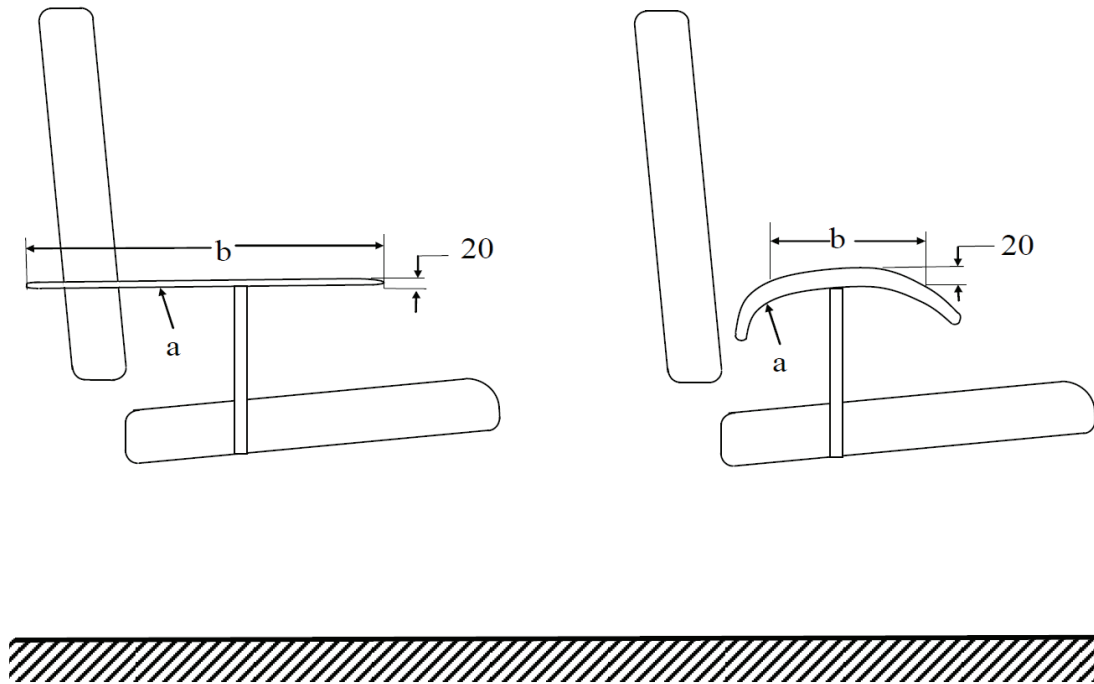
**3.4**

**armrest length**

distance along the armrest within an envelope down from the top of the armrest that is 20 mm deep

Note 1 to entry: See Figure 4.

Dimensions in millimetres

**Key**

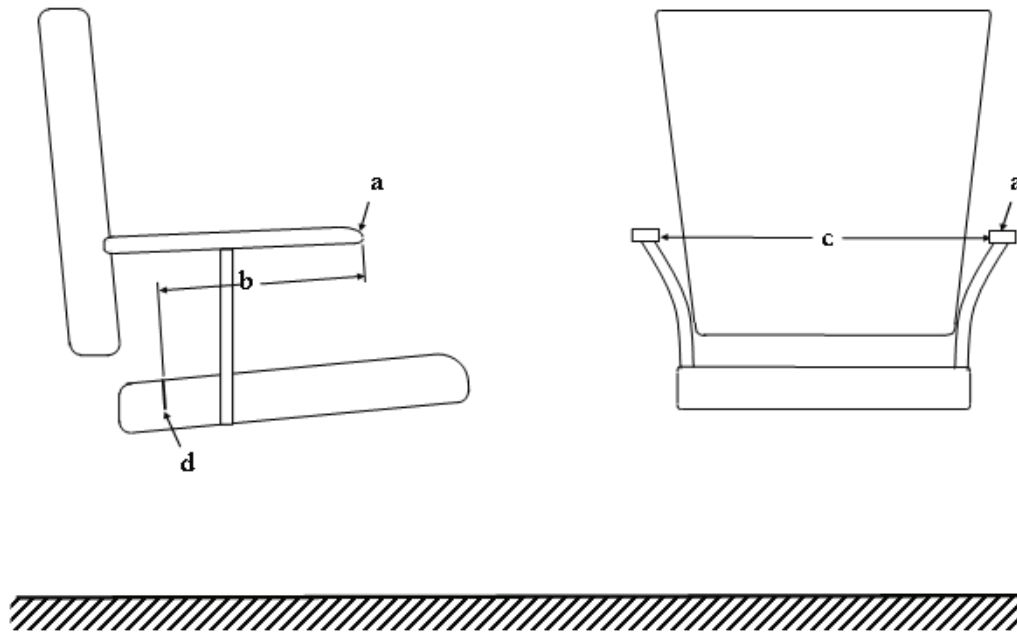
- a armrest
- b armrest length

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**Figure 4 — Armrest length**  
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**3.5****armrest – clear distance between**

smallest horizontal distance between armrest from the rear of the *seat surface width zone* (3.28) forward to the front edge of the seat (see Figure 5) within the measurement zone 5 mm down from the top of the armrest (see Figure 7)



**Key**

- a armrest
- b armrest pad measurement zone
- c clear distance between armrest
- d rear of seat width zone

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<https://standards.iteh.ai/catalog/standards/sist/1bc512af-2a23-47ba-a7c9-809986960494/iso-tr-24496-2012>

**Figure 5 — Armrest – clear distance between**

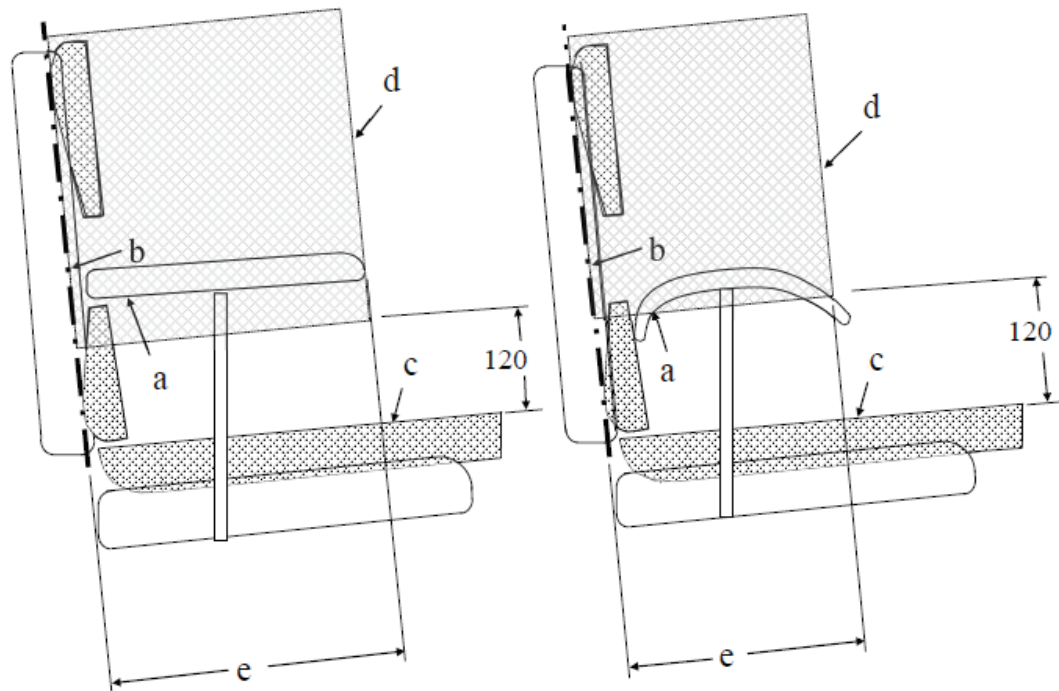
**3.6**

**armrest position – front of**

perpendicular distance from the backrest line to the front of the armrest that is in the measurement zone 120 mm and greater above the top surface of the loaded CMD buttocks pad

Note 1 to entry: See Figure 6.

Dimensions in millimetres



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#### Key

- a armrest
- b backrest line
- c CMD buttocks pad
- d measurement zone
- e front of armrest position

**Figure 6 — Armrest position – front of**

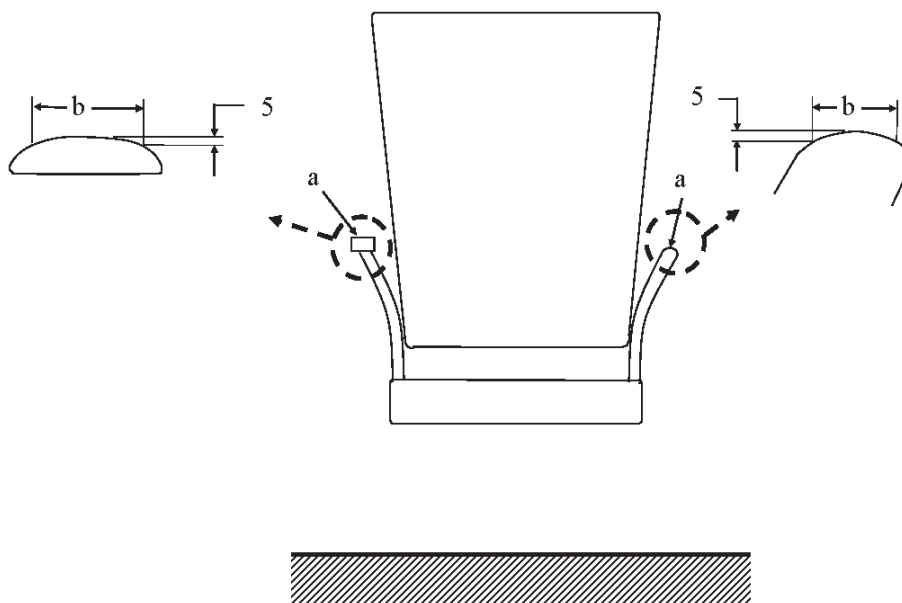
### 3.7

#### armrest width

horizontal distance across the armrest within the measurement zone 5 mm down from the top of the armrest

Note 1 to entry: See Figure 7.

Dimensions in millimetres



**Key**

- a armrest
- b armrest width

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Figure 7 — Armrest width

**3.8**

**back to seat movement ratio**

ratio of change of the backrest angle relative to the change of angle of the seat that occurs when a seat and backrest move concurrently

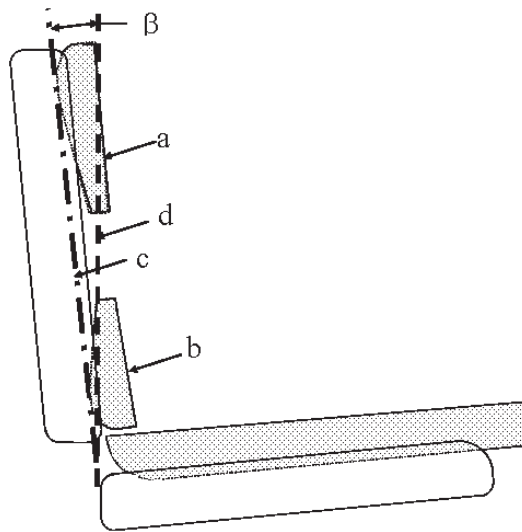
Note 1 to entry: Not applicable to chairs with seat and/or back angles that only move independently.

**3.9**

**backrest angle to vertical**

angle  $\beta$  between vertical and the loaded backrest

Note 1 to entry: See Figure 8.

**Key**

- a CMD thoracic pad
- b CMD pelvic pad
- c backrest line
- d vertical
- $\beta$  backrest angle to vertical

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**Figure 8 — Backrest angle to vertical**

**3.10****backrest width**

smallest horizontal dimension of the backrest within the *lumbar zone* (3.18)

Note 1 to entry: See Figure 9.