



BSI Standards Publication

Ergonomics of human-system interaction

Part 5: Workstation layout and postural requirements

National foreword

This British Standard is the UK implementation of EN ISO 9241-5:2024. It is identical to ISO 9241-5:2024. It supersedes BS EN ISO 9241-5:1999, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/9, Applied ergonomics.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

**Ergonomics of human-system interaction - Part 5:
Workstation layout and postural requirements (ISO 9241-
5:2024)**

Ergonomie de l'interaction homme-système - Partie 5:
Aménagement du poste de travail et exigences
relatives aux postures (ISO 9241-5:2024)

Ergonomie der Mensch-System-Interaktion - Teil 5:
Anforderungen an Arbeitsplatzgestaltung und
Körperhaltung (ISO 9241-5:2024)

This European Standard was approved by CEN on 26 August 2024.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 9241-5:2024) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 "Ergonomics" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 2025, and conflicting national standards shall be withdrawn at the latest by March 2025.

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

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Endorsement notice

The text of ISO 9241-5:2024 has been approved by CEN as EN ISO 9241-5:2024 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 122, *Ergonomics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 9241-5:1998), which has been technically revised.

The main changes are as follows:

- Expansion and correction of [Clause 3](#).
- Additional information added to [Clause 4](#).
- Additional requirements and recommendations given in [Clause 5](#).
- Revision of [Annex A](#).

A list of all parts in the ISO 9241 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of this document is to promote and enhance performance and comfort while minimizing risks to users' safety and health. Users of interactive systems typically adopt a range of postures, such as seated with leaning, upright or reclining torso, standing or a combination of both. Workplaces which accommodate such usage can encourage movement, promote comfort and reduce physical, mental and visual problems.

This document is intended for use by product and workstation designers and implementers.

Ergonomics of human-system interaction —

Part 5: Workstation layout and postural requirements

1 Scope

This document specifies ergonomic guiding principles which apply to the user requirements, design and procurement of workstation equipment for using interactive systems with visual displays.

In particular, the general principles and requirements specified in this document apply to the standards specifying technical design of furniture and equipment constituting the workplace. They are intended for use by product and workstation designers and implementers.

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 9241-11:2018, *Ergonomics of human-system interaction — Part 11: Usability: Definitions and concepts*

ISO 9241-302:2008, *Ergonomics of human-system interaction — Part 302: Terminology for electronic visual displays*

3 Terms and definitions

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

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

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

3.1

angle of view

angle between the line of sight and the line orthogonal to the surface of the display at the point where the line of sight intersects the image surface of the display

[SOURCE: ISO 9241-302:2008, 3.3.5, modified — Definition revised.]

3.2

anthropometric data

data relating to the study and measurement of the physical dimensions of the human body

3.3

armrest

support for the lower arms

3.4

back rest

part of a work chair which provides support for the back

3.5

castor

wheeled component on the bottom of furniture to facilitate appropriate movement on the floor surface

3.6

design reference posture

posture specified for the purpose of workstation design to define relative positions and dimensions

3.7

deviation

alteration from the neutral position

3.8

dynamic posture

body position which changes with relative movements of the limbs or other parts of the human body in relation to one another or with respect to a fixed object (e.g. a workstation)

3.9

extension

movement that increases the angle between two adjacent bones

Note 1 to entry: Dorsal pertains to the back of the hand, and palmar pertains to the palm.

Note 2 to entry: Hand extension is the movement of the hand in the dorsal direction.

Note 3 to entry: Neck extension (cervical extension) is the movement of the head backward.

3.10

flexion

movement that decreases the angle between two adjacent bones

Note 1 to entry: Palmar pertains to the palm of the hand.

Note 2 to entry: Hand flexion is the movement of the hand in the palmar direction.

Note 3 to entry: Neck flexion is the movement of lowering the chin down to the chest.

3.11

gloss

mode of appearance by which reflected highlights of objects are perceived as superimposed on the surface due to the directionally selective properties of that surface

[SOURCE: CIE S 017:2020, 17-24-080]

3.12

gloss unit

measure for quantifying the gloss of a surface

3.13

intended user population

people for whom the design is intended, specified according to relevant characteristics

Note 1 to entry: Relevant characteristics include, for example, the skill level or physical characteristics, such as anthropometric dimensions, of these people. Gender and age can be related to variations in these characteristics. In addition to these intrinsic characteristics, extrinsic factors (e.g. cultural differences) can also be relevant.

3.14

interactive system

combination of hardware and/or software and/or services and/or people that users interact with in order to achieve specific goals

Note 1 to entry: This includes, where appropriate, packaging, user documentation, online and human help, support and training.

[SOURCE: ISO 9241-11:2018, 3.1.5]

3.15

kyphosis

convex curvature of the thoracic spine

3.16

line-of-sight angle

angle between a horizontal line and the visual axis of the eye

Note 1 to entry: The visual axis of the eye is the line connecting the point of fixation and the centre of the pupil.

3.17

lordosis

concave curvature of the spine

3.18

lumbar

region of the back between the thorax and the pelvis

3.19

popliteal

of or pertaining to the back of the knee

3.20

posture

overall position of the body, or body parts in relation to each other, with respect to the workplace and its components

3.21

reference plane

surface designed to support the feet

Note 1 to entry: If not otherwise indicated, the reference plane is the ground. Any other level higher or lower than ground level may be used as a reference plane for the calculation of the height of support surfaces.

3.22

static posture

adoption of a body position which is fixed over time and where there is muscle contraction without motion

3.23

task analysis

analytical process employed to determine the specific behaviours required of people when operating equipment or doing work, including the identification of the information and controls required to accomplish those behaviours or tasks

Note 1 to entry: The task analysis is not a risk assessment of the workplace according to legal requirements.

3.24

workplace

arrangement of resources allocated to one person to complete a task

3.25

workspace

volume of space allocated to one or more persons in the work system to complete a work task

3.26

worksurface

surface on which equipment and task materials are used