

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

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|--|---|
| <p>See Eesti standard EVS-EN ISO 9241-5:2024 sisaldab Euroopa standardi EN ISO 9241-5:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.09.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p> | <p>This Estonian standard EVS-EN ISO 9241-5:2024 consists of the English text of the European standard EN ISO 9241-5:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 04.09.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p> |
|--|---|

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.180, 35.180

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN ISO 9241-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2024

ICS 13.180; 35.180

Supersedes EN ISO 9241-5:1999

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.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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.

This document supersedes EN ISO 9241-5:1999.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

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

Contents

| | Page |
|--|-----------|
| Foreword | iv |
| Introduction | v |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms and definitions | 1 |
| 4 Guiding principles | 4 |
| 4.1 General considerations..... | 4 |
| 4.2 Versatility and flexibility..... | 4 |
| 4.3 Fit..... | 5 |
| 4.4 Postural change..... | 5 |
| 4.5 User information..... | 5 |
| 4.6 Maintainability-adaptability..... | 5 |
| 5 Design requirements and recommendations | 6 |
| 5.1 General..... | 6 |
| 5.2 Postures..... | 6 |
| 5.2.1 Design reference posture(s)..... | 6 |
| 5.2.2 Sitting postures..... | 7 |
| 5.2.3 Standing and sit and stand postures..... | 7 |
| 5.2.4 Intermediate postures between sitting and standing — Semi-standing..... | 7 |
| 5.3 Ease of adjustment..... | 9 |
| 5.4 Support surfaces..... | 10 |
| 5.4.1 General recommendations..... | 10 |
| 5.4.2 Clearances under worksurfaces..... | 10 |
| 5.4.3 Viewing distances and angles of view..... | 11 |
| 5.4.4 Finish of the worksurface..... | 12 |
| 5.4.5 Safety and stability aspects of workstations..... | 13 |
| 5.4.6 Energy loss to contact surfaces..... | 13 |
| 5.5 Work chair..... | 13 |
| 5.5.1 General considerations..... | 13 |
| 5.5.2 Parameters related to fit..... | 13 |
| 5.5.3 Dynamic aspects of seating..... | 14 |
| 5.5.4 Back support..... | 15 |
| 5.5.5 Arm support..... | 15 |
| 5.6 Additional support elements..... | 16 |
| 5.6.1 Document holders..... | 16 |
| 5.6.2 Footrest..... | 16 |
| 5.6.3 Support for the hands, wrists and forearms..... | 17 |
| 5.6.4 Workstations with monitor arm..... | 17 |
| 5.7 Layout of workstations within the workspace..... | 18 |
| 5.7.1 General considerations..... | 18 |
| 5.7.2 Cable management..... | 18 |
| 6 Conformity | 18 |
| 7 Measurement | 19 |
| 7.1 Support surfaces..... | 19 |
| 7.2 Safety and stability aspects of workstations..... | 19 |
| 7.3 Seat height..... | 19 |
| 7.4 Castors..... | 19 |
| 7.5 Layout of workstations within the workspace..... | 19 |
| Annex A (informative) Anthropometric data needed for workstation design and selection | 20 |
| Bibliography | 27 |

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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

This document is a preview generated by EVS

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