Masinate ohutus. Inimkeha mõõtmed. Osa 1: Kogu keha läbimahtumist võimaldavate masinaruumiavade mõõtmete määramise põhimõtted

Safety of machinery - Human body measurements - Part 1: Principles for determining the dimensions required for openings for whole body access into machinery

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 547-1:1999 sisaldab Euroopa standardi EN 547-1:1996 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 547-1:1999 consists of the English text of the European standard EN 547-1:1996. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: See Euroopa standard määrab kindlaks kogu keha läbimahtumist võimaldavate masinaruumiavade mõõtmed vastavalt standardi EN 292-1 määratlusele. Standard esitab mõõtmed, mille kohta kehtivad standardis EN 547-3 antud väärtused. Lisaruumi kohta kehtivate nõuete väärtused on toodud lisas A. Selle standardi peamine rakendusvaldkond on liikumatud seadmed; liikuvate seadmete kohta võivad kehtida spetsiifilised lisanõuded.	**Scope:**

ICS 13.110, 13.180

Võtmesõnad: ergonoomiline masinaehitus, inimkeha, juurdepääsuavad, käigud, mõõtmed, seadmeohutus, töötajad, õnnetuste vältimine

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Descriptors: Human body, work station, dimensions, ergonomics.

English version

Safety of machinery

Human body measurements

Part 1: Principles for determining the dimensions required for openings for whole body access into machinery

Sécurité des machines – Mesures du corps humain – Partie 1: Principes de détermination des dimensions requises pour les ouvertures destinées au passage de l'ensemble du corps dans les machines

Sicherheit von Maschinen – Körpermaße des Menschen – Teil 1: Grundlagen zur Bestimmung von Abmessungen für Ganzkörper-Zugänge an Maschinen-arbeitsplätzen

This European Standard was approved by CEN on 1996-11-15.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 122 'Ergonomics', the Secretariat of which is held by DIN.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the relevant EU Directive.

For relationship with this directive, see Annex ZA.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 1997 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

0 Introduction

This European Standard is one of several ergonomics standards for the safety of machinery. EN 614-1 "Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles" describes the principles designers should adopt in order to take account of ergonomic factors.

This European Standard describes how these principles should be applied to the design of openings which will allow whole body access.

This standard has been prepared to be a harmonized standard in the sense of the Machinery Directive and associated EFTA regulations.

1 Scope

This European Standard specifies the dimensions of openings for whole body access as applied to machinery as defined in EN 292-1. It provides the dimensions to which the values given in EN 547-3 are applicable. Values for additional space requirements are given in annex A. This European Standard has been prepared primarily for non-mobile machinery, there may be additional specific requirements for mobile machinery.

Dimensions for passages are based on the values for either the 95th or the 99th percentiles of the expected user population. Values for the 99th percentile apply to emergency egress routes.

The anthropometric data given in EN 547-3 originate from static measurements of nude persons and do not take into account body movements, clothing, equipment, machinery operating conditions or environmental conditions.

This European Standard shows how to combine the anthropometric data with suitable allowances to take these factors into account.

Situations where people are to be prevented from reaching a hazard are dealt with in EN 294.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology
EN 294	Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs

EN 547-3	Safety of machinery - Human body measurements - Part 3: Anthropometric data
EN 614-1	Safety of machinery – Ergonomic design principles – Part 1: Terminology and general principles

3 General requirements

This European Standard specifies the relevant dimensions of openings with respect to different body positions.

In arriving at values for these dimensions, in addition to the basic anthropometric data it is necessary to add allowances to permit unhindered and safe entry and working, taking into account aspects specific to the operator and to the operating conditions.

In this respect the following criteria are of particular significance:

a) Ease of passage of a person is influenced by:

- the type of clothing, e.g. light or heavy clothing;
- whether tools are being carried, e.g. for maintenance or repair purposes;
- whether additional equipment such as personal protective equipment (including protective clothing), or portable lighting, is being carried or worn;
- the demands of the task, e.g. posture, nature and speed of movement, lines of sight, application of force;
- frequency and duration of task;
- length of passage, e.g. through a relatively thin wall (wall of a vessel) where there is space for movement at the exit or through a channel type passage;
- amount of space available to allow for the dynamic nature of movement to escape from danger;
- the position and size of supports for the body, e.g. foot support, hand holds;

b) environmental conditions (e.g. darkness, heat, noise, moisture);

c) level of risk during the task

The allowances to be made for these items will depend on the particular machinery concerned and its application.

Annex A gives the application on how to apply this European standard in practice.

Annex B gives information on the use of notations for dimensions and anthropometric measurements