

Australian/New Zealand Standard

Safety of machinery

Part 1702: Human body measurements—Principles for determining the dimensions required for openings for whole body access into machinery

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AS/NZS 4024.1702:2014

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-041, General Principles for the Guarding of Machinery. It was approved on behalf of the Council of Standards Australia on 5 June 2014 and on behalf of the Council of Standards New Zealand on 24 April 2014. This Standard was published on 30 June 2014.

The following are represented on Committee SF-041:

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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 4024.1702.

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Part 1702: Human body measurements—Principles for determining the dimensions required for openings for whole body access into machinery

Originated in Australia as part of AS 4024.1(Int)—1992.
Previous edition AS 4024.1702—2006.
Substantially revised and designated as AS/NZS 4024.1702:2014.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-041, General Principles for the Guarding of Machinery, to supersede AS 4024.1702—2006.

It is emphasized that this Standard is part of the AS/(NZS) 4024.1 series and it is imperative that it is used in conjunction with other applicable parts of the series. A complete listing of all current parts of the AS/(NZS) 4024.1 series can be found at the Standards Australia website <www.standards.org.au> and in AS/NZS 4024.1100, *Safety of machinery, Part 1100: Application Guide*.

The objective of this Standard is to specify the dimensions of openings for whole body access as applied to machinery as defined in AS/NZS 4024.1201. It applies primarily for non-mobile machinery; there may be additional specific requirements for mobile machinery. It shows how to combine the anthropometric data with suitable allowances to take into account body movements, clothing, equipment, machinery operating conditions or environmental conditions.

This Standard is identical with, and has been reproduced from EN 547-1:1996, *Safety of machinery—Human body measurements, Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*, and its Amendment 1 (2008). The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 and A1.

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


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- (b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
EN		AS/NZS	
292	Safety of machinery—Basic concepts and general principles for design	4024	Safety of machinery
292-1	Part 1: Basic terminology, metrology	4024.1201	Part 1201: General principles for design—Risk assessment and risk reduction
294	Safety of machinery—Safety distances to prevent danger zones being reached by the upper limbs	4024.1801	Part 1801: Safety distances to prevent danger zones being reached by upper and lower limbs
547	Safety of machinery—Human body measurements		
547-3	Part 3: Anthropometric data	4024.1701	Part 1701: Human body measurements—Basic human body measurements for technological design
614	Safety of machinery—Ergonomic design principles		
14-	Part 1: Terminology and general principles	4024.1401	Part 1401: Ergonomic principles—Design principles—Terminology and general principles

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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AUSTRALIAN/NEW ZEALAND STANDARD

Safety of machinery

Part 1702:

Human body measurements—Principles for determining the dimensions required for openings for whole body access into machinery

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 percentile 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.