

## Australian/New Zealand Standard

### Safety of machinery

### Part 1703: Human body measurements—Principles for determining the dimensions required for access openings

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## **AS/NZS 4024.1703:2014**

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.

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The following are represented on Committee SF-041:

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Australian/New Zealand Standard™

## Safety of machinery

### Part 1703: Human body measurements—Principles for determining the dimensions required for access openings

Originated in Australia as part of AS 4024.1(Int)—1992.  
Previous edition AS 4024.1703—2006.  
Substantially revised and designated as AS/NZS 4024.1703:2014.

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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 4024.1703—2006, *Safety of machinery, Part 1703: Principles for determining the dimensions required for access openings*.

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 access as applied to machinery as defined in AS/NZS 4024.1201. It provides the dimensions to which the values given in AS 4024.1704 are applicable. Values for additional space requirements are given in Annex A. This Standard applies primarily to non-mobile machinery; there may be additional specific requirements for mobile machinery. It shows how to combine 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 547-2:1996, *Safety of machinery—Human body measurements, Part 2: Principles for determining the dimensions required for access openings*, and its Amendment 1 (2008). The start and finish of text introduced or altered by amendment is indicated in the text by the tags  $\boxed{A1}$  and  $\boxed{A1}$ .

As this Standard is reproduced from an International Standard, the following applies:

- (a) In the source text ‘this European Standard’ should read ‘this Australian/New Zealand Standard’.
- (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, general principles for design	4024	Safety of machinery
292-1	Part 1: Basic terminology, methodology	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		
614-1	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.

## CONTENTS

Introduction .....	4
1 Scope .....	4
2 Normative references .....	4
3 General requirements .....	5
4 Access openings .....	5
<b>Annex A (normative) Application of the measurements in practice .....</b>	<b>11</b>
A.0 Introduction .....	11
A.1 Principles for determining additional space .....	11
A.2 Additional space requirements for access openings .....	12
A.2.1 Access opening for the upper body and arms (see 4.1) .....	12
A.2.2 Access opening for the head up to the shoulders for inspection tasks (see 4.2) .....	12
A.2.3 Access opening for both arms (see 4.3) .....	12
A.2.4 Access opening for both lower arms up to elbow (see 4.4) .....	12
A.2.5 Access opening to the side for one arm up to shoulder joint (see 4.5) .....	13
A.2.6 Access opening for a lower arm up to the elbow (see 4.6) .....	13
A.2.7 Access opening for fist (see 4.7) .....	13
A.2.8 Access opening for flat hand to wrist, including thumb (see 4.8) .....	13
A.2.9 Access opening for flat hand (four fingers) to base of thumb (see 4.9) .....	13
A.2.10 Access opening for index finger, restricted by the other fingers (see 4.10) .....	14
A.2.11 Access opening for one foot to ankle bone (see 4.11) .....	14
A.2.12 Access opening for forefoot operated controls (see 4.12) .....	14
<b>Annex B (informative) Position of access openings .....</b>	<b>15</b>
B.1 This Annex gives information on the position of access openings to facilitate access for the intended user population. ....	15
B.2 Provision for adjustability .....	15
B.3 Conditions to be met with in location of access openings .....	15
B.3.1 Access opening for the upper body and arms (see 4.1) .....	16
B.3.2 Access opening for the head as far as the shoulders for inspection tasks (see 4.2) .....	17
B.3.3 Access opening for both arms (either forward or downward) (see 4.3) .....	18
B.3.4 Access opening for both lower arms up to the elbow, either forward or downward (see 4.4) .....	19
B.3.5 Opening for access to the side for one arm up to the shoulder joint (see 4.5) .....	20
B.3.6 Access opening for one lower arm up to the elbow (see 4.6) .....	21
B.3.7 Access opening for fist (see 4.7) .....	22
B.3.8 Access opening for flat hand to wrist, including thumb (see 4.8) .....	22
B.3.9 Access opening for flat hand (four fingers) to base of thumb (see 4.9) .....	22
B.3.10 Access opening for index finger, restricted by the other fingers (see 4.10) .....	22
B.3.11 Access opening for one foot to ankle bone (see 4.11) .....	22
B.3.12 Access opening for forefoot operated controls (see 4.12) .....	22
<b>Annex C (informative) Notations for dimensions and anthropometric body measurements .....</b>	<b>23</b>
<b>Annex ZA (informative) [A1] Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC, amended by 98/79/EC [A1] .....</b>	<b>25</b>
<b>Annex ZB (informative) [A1] Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC [A1] .....</b>	<b>26</b>
<b>Bibliography .....</b>	<b>27</b>

## AUSTRALIAN/NEW ZEALAND STANDARD

**Safety of machinery**

## Part 1703:

## Human body measurements—Principles for determining the dimensions required for access openings

**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 access openings.

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 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 access openings are based on the values for the 95<sup>th</sup> percentile, whereas reach distances are based on the values for the 5<sup>th</sup> percentile, in each case the least favourable body dimension of the expected user population being used as a basis. The same considerations apply to the location of access openings.

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.*