



## Playground equipment and surfacing

### Part 1: General safety requirements and test methods (EN 1176-1:2008, MOD)

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The following are represented on Committee CS-005:

- Australian Industry Group
  - Australian Institute of Landscape Architects
  - Department for Health and Ageing, SA
  - Early Childhood Australia
  - Education and Early Childhood Services Registration and Standards Board
  - Engineers Australia
  - Institute of Public Works Engineering Australia
  - Kidsafe
  - Monash University
  - National Association of Testing Authorities Australia
  - Occupational Therapy Australia
  - Play Australia
  - Play Equipment Importers and Exporters
- 

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard<sup>®</sup>

## Playground equipment and surfacing

### Part 1: General safety requirements and test methods (EN 1176-1:2008, MOD)

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## PREFACE

This Standard was prepared by the Standards Australia Committee CS-005, Playground Equipment, to supersede, AS 4685.1—2004, *Playground equipment, Part 1: General safety requirements and test methods*.

This Standard will apply from the date of publication. However, the Committee has decided that to avoid excessive costs to manufacturers and operators, the superseded Standard, AS 4685.1—2004, will continue as an alternative for a period of one year after the publication date.

Designers and providers must note the importance of providing inclusive play and recreation settings for children and adults with disabilities. In particular, where the design of play equipment and surfaces provides access for users with wheelchairs or mobility aids to elevated surfaces, care must be taken to ensure that the design protects these users from falls through elevated openings. Refer to the AS 1428, *Design for access and mobility* (series) for further guidance regarding inclusive environments.

Designers and providers of playground equipment are strongly urged to reduce the potential for foreseeable misuse of their products. Among other appropriate design measures, unintended access should be actively discouraged through the elimination of unnecessary handholds and footholds, the inclusion of physical barriers, and the use of dimensions and profiles that are intrinsically difficult for children to climb.

Designers and providers of playgrounds are strongly urged to minimize the harmful effects of UV exposure to children and other users by incorporating shade structures and natural shade within the design. The Committee noted that the provision of shade has the additional benefit of reducing the potential for severe skin burns from exposed hot surfaces.

The objective of this Standard is to specify general safety requirements for playground equipment covering materials, design and manufacture.

This Standard is an adoption with national modifications and has been reproduced from EN 1176-1:2008, *Playground equipment and surfacing, Part 1: General safety requirements and test methods*, and has been varied as indicated to take account of Australian conditions. The modifications are specified in Appendix ZZ.

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

- (a) In the source text ‘this part of EN 1176’ should read ‘this Australian 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
1177    Impact attenuating playground surfacing—Determination of critical fall height	4422    Playground surfacing—Specifications, requirements and test method
ISO	AS
1834    Short link chains for lifting purposes—General conditions of acceptance	2321    Short link chains for lifting purposes

EN		AS/NZS	
1991	Actions on structures	1170	Structural design actions
1991-1-2	Part 1-2: General actions—Actions on structures exposed to fire	1170.1	Part 1: Permanent, imposed and other actions
1991-1-3	Part 1-3: General actions—Snow loads	1170.3	Part 3: Snow and ice actions
1991-1-4	Part 1-4: General actions—Wind actions	1170.2	Part 2: Wind actions
EN ISO		AS	
2307	Fibre ropes—Determination of certain physical and mechanical properties	4143	Methods of test for fibre ropes
9554	Fibre ropes—General specifications	4142	Fibre ropes
EN ISO/IEC		AS ISO/IEC	
17025	General requirements for the competence of testing and calibration laboratories	17025	General requirements for the competence of testing and calibration laboratories

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

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

## CONTENTS

1	Scope .....	7
2	Normative references .....	7
3	Terms and definitions .....	8
4	Safety requirements .....	15
4.1	Materials .....	15
4.1.1	General.....	15
4.1.2	Flammability .....	15
4.1.3	Timber and associated products .....	15
4.1.4	Metals.....	16
4.1.5	Synthetics .....	16
4.1.6	Dangerous substances .....	16
4.2	Design and manufacture .....	16
4.2.1	General.....	16
4.2.2	Structural integrity.....	17
4.2.3	Accessibility for adults .....	18
4.2.4	Protection against falling.....	18
4.2.5	Finish of equipment.....	22
4.2.6	Moving parts.....	22
4.2.7	Protection against entrapment.....	22
4.2.8	Protection against injuries during movement and falling .....	27
4.2.9	Means of access .....	38
4.2.10	Connections .....	40
4.2.11	Consumable components .....	40
4.2.12	Ropes .....	40
4.2.13	Chains .....	42
4.2.14	Foundations .....	42
4.2.15	Heavy suspended beams .....	43
5	Test methods and reports.....	44
6	Information to be provided by the manufacturer/supplier .....	45
6.1	Information to be provided by the manufacturer/supplier of playground equipment.....	45
6.1.1	General product information .....	45
6.1.2	Pre-information .....	45
6.1.3	Installation information .....	45
6.1.4	Inspection and maintenance information .....	46
6.2	Information to be provided by the manufacturer or supplier of impact-attenuating surfacing.....	47
6.2.1	Pre-information .....	47
6.2.2	Installation .....	47
6.2.3	Inspection and maintenance .....	47
6.2.4	Identification of impact-attenuating playground surfacing.....	47
7	Marking .....	48
7.1	Equipment identification .....	48
7.2	Basic level mark.....	48
Annex A	(normative) Loads .....	49
A.1	Permanent loads .....	49
A.2	Variable loads.....	49
A.3	Number of users on the equipment .....	54
Annex B	(normative) Method of calculation of structural integrity .....	56
B.1	General principles: Limit state .....	56
B.2	Load combinations for static analysis .....	57

B.3	Worked example of the calculation of user loads (without safety factors).....	58
B.4	Calculation of forces acting on a swing seat .....	61
B.5	Worked examples for forces acting on a swing (without safety factors).....	63
B.6	Calculation of forces acting on the cable of a cableway.....	64
B.7	Worked example for forces acting on a cableway (without safety factors) .....	66
Annex C (normative) Physical testing of structural integrity .....		69
C.1	Pass/fail criteria .....	69
C.2	Test load for equipment.....	69
C.3	Load application .....	70
C.4	Test report.....	70
Annex D (normative) Test methods for entrapment .....		71
D.1	General .....	71
D.2	Head and neck entrapment .....	71
D.3	Entrapment of clothing (Toggle test) .....	77
D.4	Finger entrapment .....	80
Annex E (informative) Overview of possible entrapment situations .....		83
Annex F (informative) A–deviations .....		85
F.1	General .....	85
F.2	France .....	85
F.3	Germany .....	85
Bibliography.....		88

## INTRODUCTION

It is not the purpose of the requirements of this standard to lessen the contribution that playground equipment makes to the child's development and/or play, which is meaningful from an educational point of view.

This standard acknowledges the difficulties of addressing safety issues by age criteria alone because the ability to handle risk is based on the individual users' level of skills and not by age. Also users other than the intended age range will almost certainly make use of the playground equipment.

Risk-taking is an essential feature of play provision and of all environments in which children legitimately spend time playing. Play provision aims to offer children the chance to encounter acceptable risks as part of a stimulating, challenging and controlled learning environment. Play provision should aim at managing the balance between the need to offer risk and the need to keep children safe from serious harm.

The principles of safety management are applicable both to workplaces in general as well as to play provision. However, the balance between safety and benefits is likely to be different in the two environments. In play provision exposure to some degree of risk may be of benefit because it satisfies a basic human need and gives children the chance to learn about risk and consequences in a controlled environment.

Respecting the characteristics of children's play and the way children benefit from playing on the playground with regard to development, children need to learn to cope with risk and this may lead to bumps and bruises and even occasionally a broken limb. The aim of this standard is first and foremost to prevent accidents with a disabling or fatal consequence, and secondly to lessen serious consequences caused by the occasional mishap that inevitably will occur in children's pursuit of expanding their level of competence, be it socially, intellectually or physically.

Refusal of admittance and access as a safety precaution is problematic due to, for example, breach in supervision or help by peers. Requirements of significant importance, such as, for example, head and neck entrapment and protection against inadvertent falls, have been written with this in mind. It is also recognised that there is an increasing need for play provision to be accessible to users with disabilities. This of course requires play areas to provide a balance between safety and the offer of the required level of challenge and stimulation to all possible groups of users. However, for the purposes of protection against head and neck entrapment, this standard does not take into account children with an increased size of the head (e.g. hydrocephalus or Downs Syndrome) or wearing helmets.

## AUSTRALIAN STANDARD

**Playground equipment and surfacing**

## Part 1:

## General safety requirements and test methods (EN 1176-1:2008, MOD)

**1 Scope**

This part of EN 1176 specifies general safety requirements for public playground equipment and surfacing. Additional safety requirements for specific pieces of playground equipment are specified in subsequent parts of this standard.

This part of EN 1176 covers playground equipment for all children. It has been prepared with full recognition of the need for supervision of young children and of less able or less competent children.

The purpose of this part of EN 1176 is to ensure a proper level of safety when playing in, on or around playground equipment, and at the same time to promote activities and features known to benefit children because they provide valuable experiences that will enable them to cope with situations outside the playground.

This part of EN 1176 is applicable to playground equipment intended for individual and collective use by children, but excluding adventure playgrounds. It is also applicable to equipment and units installed as children's playground equipment although they are not manufactured as such, but excludes those items defined as toys in EN 71 and the Toys Safety Directive.

**NOTE** Adventure playgrounds are fenced, secured playgrounds, run and staffed in accordance with the widely accepted principles that encourage children's development and often use self-built equipment.

This part of EN 1176 specifies the requirements that will protect the child from hazards that he or she may be unable to foresee when using the equipment as intended, or in a manner that can be reasonably anticipated.

**2 Normative references**

The following referenced documents are indispensable for the application 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.

EN 335-2:2006, *Durability of wood and wood-based products — Definition of use classes — Part 2: Application to solid wood*

EN 350-2:1994, *Durability of wood and wood-based products — Natural durability of solid wood — Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe*

EN 351-1:2007, *Durability of wood and wood-based products — Preservative-treated solid wood — Part 1: Classification of preservative penetration and retention*

EN 636, *Plywood — Specifications*

EN 1177, *Impact attenuating playground surfacing — Determination of critical fall height*

EN 1991-1-2, *Eurocode 1: Actions on structures — Part 1-2: General actions – Actions on structures exposed to fire*

EN 1991-1-3, *Eurocode 1: Actions on structures — Part 1-3: General actions – Snow loads*

EN 1991-1-4, *Eurocode 1: Actions on structures – Part 1-4: General actions – Wind actions*

EN 13411-3, *Terminations for steel wire ropes – Safety – Part 3: Ferrules and ferrule-securing*

EN 13411-5, *Terminations for steel wire ropes – Safety – Part 5: U-bolt wire rope grips*

EN ISO 2307, *Fibre ropes – Determination of certain physical and mechanical properties (ISO 2307:2005)*

EN ISO 9554, *Fibre ropes – General specifications (ISO 9554:2005)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

ISO 1834, *Short link chain for lifting purposes – General conditions of acceptance*

### 3 Terms and definitions

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

**3.1 playground equipment**  
equipment and structures, including components and constructional elements with, or on which, children can play outdoors or indoors, either individually or in groups, according to their own rules or own reasons for playing which can change at any time

**3.2 climbing equipment**  
playground equipment that only allows the user to move on it or in it by the use of a hand and foot/leg support and requires a minimum of three points of contact with the equipment, one of these being a hand

NOTE During movement it is possible to have only one or two points of contact but this is only during a transition from one rest position to the next.

**3.3 impact area**  
area that can be hit by a user after falling through the falling space

**3.4 playing surface**  
surface of a playground from which the use of the playground equipment commences and which comprises at least the impact area

**3.5 free space**  
space in, on or around the equipment that can be occupied by a user undergoing a movement forced by the equipment (e.g. sliding, swinging, rocking)

**3.6 free height of fall**  
greatest vertical distance from the clearly intended body support to the impact area below

NOTE The intended body support includes those surfaces to which access is encouraged.

**3.7 falling space**  
space in, on or around the equipment that can be passed through by a user falling from an elevated part of the equipment (see Figure 1)

NOTE The falling space commences at the free height of fall.