

Australian Standard<sup>®</sup>

## Playground equipment

### Part 1: General safety requirements and test methods



This Australian Standard® was prepared by Committee CS-005, Playground Equipment. It was approved on behalf of the Council of Standards Australia on 13 September 2004. This Standard was published on 13 October 2004.

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The following are represented on Committee CS-005:

- Australian Council of State School Organisations
  - Australian Early Childhood Association
  - Australian Industry Group
  - Australian Local Government Association
  - Australian Public Risk Insurance Management Association
  - Consumers Federation of Australia
  - Department of Human Services, SA
  - Engineers Australia
  - Office of Fair Trading, NSW Consumer Protection Agency
  - Kidsafe
  - NSW Health Department
  - NSW Office of Child Care
  - Parks and Leisure, Australia
  - Plastics and Chemicals Industries Association
  - Playgrounds & Recreation Association of Victoria
  - Timber Preservers Association of Australia
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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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### Part 1: General safety requirements and test methods

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## PREFACE

This Standard was prepared by Standards Australia Committee CS-005, Playground Equipment, to supersede AS 1924.1—1981, *Playground equipment for parks, schools and domestic use*, Part 1: *General requirements*, and AS 1924.2—1981, *Playground equipment for parks, schools and domestic use*, Part 2: *Design and construction—Safety aspects* (in part).

*This Standard incorporates Amendment No. 1 (October 2006) and Amendment No. 2 (April 2008). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This Standard is Part 1 of the following series:

AS

- |        |   |
|--------|---|
| 4685   | Playground equipment  |
| 4685.1 | Part 1: General safety requirements and test methods (this Standard)          |
| 4685.2 | Part 2: Particular safety requirements and test methods for swings            |
| 4685.3 | Part 3: Particular safety requirements and test methods for slides            |
| 4685.4 | Part 4: Particular safety requirements and test methods for runways           |
| 4685.5 | Part 5: Particular safety requirements and test methods for carousels         |
| 4685.6 | Part 6: Particular safety requirements and test methods for rocking equipment |

This Standard is based on, but not equivalent to, EN 1176-1:2003, *Playground equipment*, Part 1: *General safety requirements and test methods*, which was prepared by CEN/TC 136 Sports Playground and Recreational Equipment. Variations from EN 1176-1:1998 reflect local requirements or practice.

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

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 Standards, AS 1924.1 and AS 1924.2, will continue as an alternative for a period of one year after the publication date.

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## FOREWORD

Supervision to the degree that prevents or controls potentially harmful interactions between children and playground equipment is neither possible nor practical; injury prevention strategies are necessary.

Children's susceptibility to injury, and the nature of their injuries differ from those of adults. Children interact with playground equipment in a way that reflects normal child behaviour, which will vary according to the child's age and level of development. Therefore, intervention strategies intended to protect children may differ from those intended to protect adults.

The primary aim of a playground should be to stimulate a child's imagination, provide excitement and adventure in safe surroundings, and allow scope for children to develop their own ideas of play. Ideally playgrounds should encourage development of motor skills and present users with manageable challenges to develop physical skills and to find and test their limits. In order to provide these challenges, a balance must be found between risk and safety. Professional advice should be sought, and children should be involved in planning, to ensure that the playground satisfies children's ideas of play.

A playground injury that leaves a child permanently disabled is not acceptable. Playground designers, manufacturers, importers, distributors, retailers, consultants and those involved in the maintenance and certification of equipment must take every possible care to identify and eliminate unacceptable playground risks and reduce hazards.

Falls are the most common event associated with significant injury arising from the use of playground equipment. As equipment height increases, additional protection is required, and should be provided by increased use of protective measures. In this revision, the maximum free height of fall for upper body equipment has been reduced, compared to other equipment, in recognition of research on injuries from use of such equipment.

The challenge is to develop products, structures, installations and services in a way that minimizes the potential for injury to children. Prevention of injuries can be addressed through design and technology, legislation and education.

This Standard does not purport to address all the hazards associated with playgrounds. The Standard's existence alone will not necessarily prevent injuries. Like other physical activities, the use of playgrounds involves the risk of injury. However, developing and maintaining a playground in accordance with this Standard will help minimize the risk of injury occurring and the severity of any injury that may occur.

# STANDARDS AUSTRALIA

## Australian Standard Playground equipment

### Part 1: General safety requirements and test methods

## SECTION 1 SCOPE AND GENERAL

### 1.1 SCOPE

This Standard sets out general safety requirements for playground equipment. Additional safety requirements for specific pieces of playground equipment are specified in subsequent parts of the AS 4685 series of Standards.

This Standard does not refer to requirements for development, installation, inspection, maintenance or operation of playground equipment. For these requirements refer to AS/NZS 4486.1.

A2 | This Standard is not applicable to motor driven playground equipment. See AS 3533 for motor driven playground equipment.

### 1.2 OBJECTIVE

The objective of this Standard is to minimize risk of injury to children using playgrounds by providing internationally aligned general safety requirements for playground equipment. The Standard is intended for use by designers, consultants, manufacturers and installers of playground equipment as well as the operators, inspectors and maintenance professionals of playgrounds.

This Standard specifies requirements that will protect a child from hazards he or she may be unable to foresee when using playground equipment as intended.

### 1.3 APPLICATION

The same hazards face a child from playground equipment whether it is produced by a commercial organization, such as a specialist manufacturer, a voluntary group, such as a service group or a parent organization, or a single individual. The requirements of this Standard therefore apply to all playgrounds and playground equipment.

This Standard is applicable to playground equipment intended for individual and collective use by children. It is also applicable to equipment and units installed as children's playground equipment even if they are not manufactured as such, but excludes toys.

### 1.4 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1530	Methods for fire tests on building materials, components and structures
1530.2	Part 2: Test for flammability of materials
1604	Specification for preservative treatment (series)
2321	Short-link chain for lifting purposes
A2   3533	Amusement rides and devices (series)

4685	Playground equipment (series)
AS/NZS	
3572	Plastics—Glass filament reinforced plastics (GRP)—Methods of Test
3572.22	Part 22: Method for the determination of hardness by means of a Barcol impressor
4422	Playground surfacing—Specifications, requirements and test method
4486	Playgrounds and playground equipment
4486.1	Part 1: Development, installation, inspection, maintenance and operation
AS/NZS ISO	
8124	Safety of toys
8124.2	Part 2: Flammability (ISO 8124-2:1994, MOD)
8124.3	Part 3: Migration of certain elements
ISO	
8793	Steel wire ropes—Ferrule-secured eye terminations
BCA	Building Code of Australia

## 1.5 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

### 1.5.1 Access ramp

A means of access incorporating an inclined surface on which a user can ascend or descend. See Figure 1.

NOTE: Structures with inclines above 15° are deemed to be climbing equipment.

### 1.5.2 Annual main inspection (Comprehensive inspection)

Inspection, at intervals not exceeding 12 months, intended to establish the overall level of safety of equipment, foundations and surfaces. Typical checks include the effects of weather, evidence of rotting or corrosion and any change in the level of safety of the equipment as a result of repairs made, or of added or replaced components.

### 1.5.3 Barrier

Guardrail intended to prevent a user passing beneath.

### 1.5.4 Climbing equipment

Playground equipment or equipment parts that have no areas on which it is possible to stand unsupported and which, therefore, require the users to hold on with one or both hands.

### 1.5.5 Cluster (combination of equipment)

Two or more separate pieces of equipment designed to be installed in close proximity to each other to provide continuity of play activity.

### 1.5.6 Collective use

Use by more than one user at the same time.

### 1.5.7 Crushing point

Place where parts of the equipment can move against each other, or against a fixed area so that persons, or parts of their body, can be crushed.

### 1.5.8 Entrapment

Hazard presented by the situation in which a body, or part of a body, or clothing can become trapped. The user is not able to break free and injury is caused by the entrapment.