

Australian Standard[®]

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.

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
-

This Standard was issued in draft form for comment as DR 02415.

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.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

Playground equipment

Part 1: General safety requirements and test methods

Originated as part of AS 1924.1—1976.
Previous edition AS 1924.1—1981 and AS 1924.2—1981.
Part of AS 1924.1—1981 and AS 1924.2—1981 revised,
amalgamated and redesignated as AS 4685.1—2004.
Reissued incorporating Amendment No. 1 (October 2006).
Reissued incorporating Amendment No. 2 (April 2008).

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia
ISBN 0 7337 6293 X

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.

CONTENTS

	<i>Page</i>
FOREWORD.....	4
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 OBJECTIVE.....	5
1.3 APPLICATION	5
1.4 REFERENCED DOCUMENTS	5
1.5 DEFINITIONS	6
SECTION 2 SAFETY REQUIREMENTS	
2.1 MATERIALS	12
2.2 DESIGN AND MANUFACTURE	13
SECTION 3 INFORMATION TO BE PROVIDED BY THE MANUFACTURER/SUPPLIER.....	34
SECTION 4 MARKING	37
APPENDICES	
A DETERMINATION OF LOADS.....	38
B METHODS FOR CALCULATION OF STRUCTURAL INTEGRITY.....	45
C PHYSICAL TESTING OF STRUCTURAL INTEGRITY	55
D TEST METHODS FOR ENTRAPMENT	57
E ENTRAPMENT SITUATIONS.....	67
F SPIRAL AND HELICAL STAIRS	68

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)