

Australian Standard<sup>®</sup>

**Amusement rides and devices**

**Part 4.1: Specific requirements—  
Land-borne inflatable devices**

**STANDARDS**  
Australia



This Australian Standard® was prepared by Committee ME-051, Amusement Rides and Devices. It was approved on behalf of the Council of Standards Australia on 21 November 2005.

This Standard was published on 9 December 2005.

---

The following are represented on Committee ME-051:

- Australian Amusement Association
  - Australian Amusement Leisure and Recreation Association
  - Australian Chamber of Commerce and Industry
  - Australian Industry Group
  - Australian Ski Areas Association
  - Consumers' Federation of Australia
  - Department for Administrative and Information Services, S.A.
  - Department of Industrial Relations, Qld
  - Department of Labour, New Zealand
  - Engineers Australia
  - Ministry of Economic Development, New Zealand
  - Safety Institute of Australia
  - Showmen's Guild of Australasia
  - Victorian Showmen's Guild
  - Victorian WorkCover Authority
  - WorkCover New South Wales
  - Worksafe Western Australia
- 

This Standard was issued in draft form for comment as DR 04513.

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Standards may also be withdrawn.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](http://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](mailto:mail@standards.org.au), or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

Australian Standard<sup>®</sup>

**Amusement rides and devices**

**Part 4.1: Specific requirements—  
Land-borne inflatable devices**

First published as AS 3533.4.1—2005.  
Reissued incorporating Amendment No. 1 (September 2007).

**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 7030 4

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, ME-051, Amusement Rides and Devices, to complement the general requirements for amusement rides and devices given in AS 3533.1 and AS 3533.2.

*This Standard incorporates Amendment No. 1 (September 2007). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee ME-051. After consultation with stakeholders in both countries, Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide designers, manufacturers, proprietors and operating staff with requirements and guidance specific to the design, construction, operation and maintenance of inflatable devices that will protect the health and safety of both operating staff and patrons.

The Standard is part of a series designed to cover aspects of safety for amusement rides and devices. Parts 1 and 2 deal with the general aspects of safety common to all kinds of amusement rides and devices and are intended to be used in conjunction with the specific requirements for the particular type of ride. While some ride-specific requirements have been included in Parts 1 and 2, these are now being progressively moved into individual Standards in a new AS 3533.4 series. Parts in the AS 3533.4 series relate to particular rides or devices and give requirements and guidance tailored to the particular kinds of hazards relevant for that ride or device.

This Standard was based on a safety guide issued by the Health and Safety Executive in the United Kingdom and an early draft for a proposed European Standard EN 1176-8, *Playground equipment, Part 8: Specific safety requirements and test methods for inflatable play equipment* prepared by CEN/TC 156, Sports, playground and other recreational equipment.

It should be noted that compliance with this Standard alone does not necessarily ensure that all legal obligations are being fulfilled.

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 an ‘informative’ appendix is only for information and guidance.

## CONTENTS

	<i>Page</i>
1 SCOPE .....	4
2 APPLICATION .....	4
3 REFERENCED DOCUMENTS .....	4
4 DEFINITIONS .....	5
5 METHODS OF CONSTRUCTION AND MATERIALS .....	7
6 ANCHORAGE .....	8
7 STRUCTURAL INTEGRITY .....	11
8 OPEN SIDES, ACCESS AND EGRESS .....	12
9 CONTAINMENT .....	14
10 SMALL SPACE ENTRAPMENT .....	16
11 BLOWERS .....	20
12 EMERGENCY EXITS .....	21
13 INFORMATION TO BE PROVIDED BY THE MANUFACTURER AND SUPPLIER.....	21
14 MARKING .....	23
15 INSPECTIONS.....	23
16 MAINTENANCE .....	25
17 SUPERVISION .....	25
18 OPERATION.....	26
 APPENDICES	
A BEAUFORT SCALE.....	27
B CALCULATION OF NUMBER OF ANCHORAGE POINTS.....	28
C TEST METHOD FOR GROUNDING.....	30
D DETERMINATION OF HIC AND <i>g</i> VALUES .....	33
E TEST METHODS FOR ENTRAPMENT .....	37
F CONTROL AND SUPERVISION ISSUES FOR INFLATABLE DEVICES .....	46

## STANDARDS AUSTRALIA

**Australian Standard**  
**Amusement rides and devices**

**Part 4.1: Specific requirements—Land-borne inflatable devices**

**1 SCOPE**

This Standard sets out requirements and guidance for the design, manufacture, operation and maintenance of land-borne inflatable amusement devices that are static when in use. It also specifies information to be supplied with the equipment.

NOTE: This Standard is not applicable to inflatable toys, water-borne inflatable devices, air-supported buildings to which the Building Code of Australia would apply, inflatable devices used for protection rather than play or inflatable devices acting as artificial climbing structures involving belay systems.

**2 APPLICATION**

This Standard is intended to be used in conjunction with AS 3533.1 and AS 3533.2, which provide requirements and recommendations on matters common to all amusement rides and devices. Specific requirements in this Standard take precedence over corresponding requirements in AS 3533.1 and AS 3533.2. If the requirements of any part of this Standard conflict with any National, State or Territory regulations, the appropriate statutory regulations shall apply.

**3 REFERENCED DOCUMENTS**

The following Standards are referred to in this Standard:

**AS**

3533	Amusement rides and devices
3533.1	Part 1: Design and construction
3533.2	Part 2: Operation and maintenance
3533.3	Part 3: Inspection and inspection
4685	Playground equipment
4685.1	Part 1: General safety requirements and test methods
4878	Methods of test for coated fabrics
4878.6	Part 6: Determination of tensile strength and elongation at break

**AS/NZS**

2512	Methods of testing protective helmets
2512.1	Part 1: Definitions and headforms
4422	Playground surfacing—Specifications, requirements and test method

**ISO**

2231	Rubber- or plastics-coated fabrics—Standard atmospheres for conditioning and testing
4674	Rubber- or plastics-coated fabrics—Determination of tear resistance
4674-1	Part 1: Constant rate of tear methods