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AS 1924.2—1981

Australian Standard®

Playground equipment for parks, schools and domestic use

Part 2: Design and construction—Safety aspects

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The following scientific, industrial and governmental organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Consumers Association
Australian Council of State School Organizations
Australian Federation of Consumer Organizations
Australian Retailers Association
Australian Toy Association
Confederation of Australian Industry
Department of Business and Consumer Affairs
Department of Health (Commonwealth)
Department of Home Affairs
Department of Industrial Relations, N.S.W.
Department of Labour and Industry, Vic.
Education Department of New South Wales
Education Department of Victoria
Health Commission of New South Wales
Industrial Design Council of Australia
Kindergarten Union of New South Wales Incorporated
Local Government Association of New South Wales
Metal Trades Industry Association of Australia
Ministry of Consumer Affairs, Vic.
Municipal Association of Victoria
National Safety Council of Australia (Victorian Division)
Plastics Institute of Australia Incorporated
Playgrounds and Recreation Association of Victoria
Royal Australian Institute of Parks and Recreation
Royal Children's Hospital, Melbourne

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Playground equipment for parks, schools and domestic use

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PREFACE

This standard was prepared by the Association's Committee on Playground Equipment. It is to be used in conjunction with AS 1924, Part 1 — General Requirements, which specifies the grades of materials to be used, and with AS 2155, The Siting of a Playground and the Installation and Maintenance of Playground Equipment.

This standard specifies requirements for the design and construction of playground equipment the aim of which is to reduce potential hazards in the equipment itself thereby reducing the risk of injury to the children who use it.

When this project commenced very little information was available on the causes or results of accidents in public or school playgrounds or on play equipment in the home garden. During the development stages of this standard, however, three surveys were undertaken, one by the Physical Education Section of the Victorian Department of Education, another by the Health Commission of New South Wales and a third by the Child Safety Centre of the Royal Alexandra Hospital for Children.

These surveys reinforced the opinion reached by the committee, from the limited statistics previously available, that falls from climbing and agility equipment and slides onto hard surfaces were the main causes of accidents, the remainder being due to children running into the pathway of swings, misuse of the equipment, careless maintenance of both the equipment and the surfacing under the equipment, and lack of supervision in the playground.

A solution to the last cause of accidents is of course outside the scope of this standard. However, AS 2155 emphasizes the need for great care in the siting of equipment within the play area to reduce the risk of children running into the path of swings and of small children playing in areas and on equipment intended for older children.

Bearing in mind that the aim of play equipment is to offer children a challenge and an opportunity to develop physical skills, every effort has been made to produce a standard which will reduce the risk of accidents or their effect without placing undue restriction on design.

As falls cause the majority of accidents, the emphasis in the standard is on the provision of hand and guard rails on inclined access and around platforms at fall heights which are considered unacceptable. Shock-absorbent surfacing under equipment will greatly reduce the effects of falls and those responsible for the installation of equipment are urged to pay particular attention to the provision of this important safety measure. Reference should be made to AS 2155 for guidance in this regard.

Insufficient space between the rigid support for a swing and a rigid swinging assembly has caused the death of two children. The minimum clearances between swinging elements in relation to one another and to the supporting structure are therefore specified.

The committee also saw a potential hazard in non-rigid swinging elements side by side, particularly where these could be used by more than one child at a time, and where the design was such as to allow the users to lean sideways, e.g. a swinging ladder. It was felt that lateral motion of non-rigid swinging elements could result in injury where equipment was misused. As misuse had a high rating in the statistics of causes of accidents, the committee specified minimum spacings for all types of swinging elements. Although the representatives of the manufacturers and retailers of domestic equipment believed this requirement to be unnecessarily harsh, the general consensus was that the standard should be published and an amendment made at a later date if research indicated that the minimum spacings could be reduced.

Although it is known that many children have been seriously injured as a result of a blow on the head by an unladen swing seat, it is impossible at the present time to specify a test method and performance criteria as a means of evaluating the safety characteristics of a seat. Research is needed before this can be done. Nevertheless the standard emphasizes the fact that seats should be made of shock-absorbent material or be provided with a shock-absorbent surface and that the weight should be kept to a minimum.

The committee points out that it is not possible to proscribe all the dangerous aspects of functional design, and designers are urged to guard against the creation of potential hazards such as foot and limb entrapment points. Head entrapment is covered.

Rotating equipment which provides the users with no means of controlling its movement is not recommended as small children can be terrorized by other children without being able to get off safely.

In some instances it has only been possible to make recommendations. It is hoped that eventually these will be replaced with specific design or performance criteria. This will not be possible, however, until the necessary research is completed.

The committee decided that the standard should be published in its present form, and revised as found necessary in the light of experience gained by manufacturers, designers and users through its voluntary adoption.

In the preparation of this standard reference was continually made to the work of similar committees in the U.S.A. and Germany and in particular to the British Standards Institution's playground equipment standards.

This standard makes reference to the following standards:

AS 1182	Size Coding Scheme for Infants' and Children's Clothing
AS 1250	SAA Steel Structures Code
AS 1480	SAA Concrete Structures Code
AS 1504	Fibre Rope (Three-strand Hawser Laid)
AS 1554	SAA Structural Steel Welding Code Part 1 — Welding of Steel Structures
AS 1657	SAA Code for Fixed Platforms, Walkways, Stairways and Ladders
AS 1664	SAA Aluminium Structures Code
AS 1665	SAA Aluminium Welding Code
AS 1720	SAA Timber Engineering Code

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AS 1924 Playground Equipment for Parks, Schools and Domestic Use
Part 1— General Requirements

AS 2155 The Siting of a Playground and the Installation and Maintenance of Playground Equipment

BS 590 Mild Steel Chain Grade 30, Short Link and Pitched or Calibrated for Lifting Purposes

BS 3019 General Recommendations for Manual Inert-gas Tungsten-arc Welding
Part 1— Wrought Aluminium, Aluminium Alloys and Magnesium Alloys

BS 3571 General Recommendations for Manual Inert-gas Metal-arc Welding
Part 1— Aluminium and Aluminium Alloys

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