

Australian Standard[®]

**Children's toys
(Safety requirements)**

Part 4: Flammability requirements

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

Australian Consumers Association
Australian Federation of Consumer Organizations
Australian Retailers Association
Confederation of Australian Industry
Country Women's Association of Australia
Department of Business and Consumer Affairs
Department of Consumer Affairs, N.S.W.
Department of Health
Department of Public and Consumer Affairs, S.A.
Department of Industrial Relations and Technology
Department of Science and the Environment
Health Commission of New South Wales
Health Commission of Victoria
Ministry of Consumer Affairs, Vic.
National Safety Council of Australia (Victorian Division)
Royal Alexandra Hospital for Children

This standard, prepared by Committee CS/18, Safety of Children's Toys, was approved on behalf of the Council of the Standards Association of Australia on 18 February 1980, and was published on 1 March 1980.

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This standard was issued in draft form for public review as DR 78184.

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(Safety requirements)**

Part 4: Flammability requirements

AS 1647 first published	1974
Part 4 separately published	1980

PREFACE

This standard was prepared by the Association's Committee on Safety of Children's Toys and relates to the flammability requirements of children's toys. This standard constitutes Part 4 of the complete standard for toys and, as such, is a part revision of AS 1647—1974, Children's Toys and Playthings (Safety Requirements). Other Parts of this standard are as follows:

Part 1—General Safety Requirements*

Part 2—Constructional Requirements*

Part 3—Toxicological Requirements

In preparing this standard, the committee took into account the following documents:

British Standard BS 5665: Part 2—1978 (which is equivalent to the European Committee for Standardization EN 71, Part 2).

United States Consumer Product Safety Commission Regulations

United States Voluntary Product Standard PS 72-76

Canadian Government Regulations.

This standard makes reference to the following standards:

AS 1176 Methods of Test for Combustion Characteristics of Textile Materials

Part 1—Method for the Determination of Ease of Ignition

Part 2—Method for the Determination of Buring Time and Heat Output

Part 3—Method for the Determination of Surface Burning Properties

AS 1248 Fabrics for Domestic Apparel of the Low Fire Hazard Type

AS 1647 Children's Toys

Part 1—General Safety Requirements*

AS 1989 Classification and Labelling of Children's Night Clothes for Fire Hazard

AS 2106 Methods for the Determination of the Flashpoint of Flammable Liquids (Closed Cup)

AS K185 Colours for Specific Purposes

BS 2961 Typeface Nomenclature and Classification

* In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
CHILDREN'S TOYS
(SAFETY REQUIREMENTS)

PART 4—FLAMMABILITY REQUIREMENTS

FOREWORD

This standard constitutes Part 4 of the standard for toys and it relates to flammability requirements for toys. The purpose of this standard is to establish safety requirements for children's toys such that the more obvious hazards associated with them will be eliminated. The standard does not cover performance requirements other than from a safety point of view.

In preparing this standard, the committee related known flame propagation characteristics to toys. First, the committee recognized that certain materials by their very nature possessed flame propagation characteristics which were considered hazardous and therefore unsuitable for use in toys. Accordingly, the use of these materials, in or on toys, is specifically prohibited by this standard. Secondly, the committee felt that some fabrics possessed an inherent surface burning hazard and as such, the use of fabrics which have a surface burning time less than a certain value, on any toy, was also prohibited. Thirdly, the committee recognized that ignition time and burning time parameters are very important for toys that are intended to be worn by the child, e.g. cowboy suits, nurses' outfits, or occupied by the child, e.g. play tents. Accordingly, specific requirements for these parameters have been specified for these types of toys. Finally, the committee felt that the use of flammable liquids in toys should be restricted and, as such, a minimum flashpoint requirement has been specified for all liquids.

Plastics materials were considered by the committee; however, since these materials do not burn readily and because there were insufficient data available, requirements for these materials are not specified. However, the matter was considered important and these materials have been referred to another committee for further investigation.

Although it is considered that the standard adequately covers the flammability hazards associated with toys, it should be borne in mind that the standard cannot completely eliminate such a hazard from toys because it is not possible to make toys completely non-flammable. Nevertheless, the standard specifies labelling requirements for certain materials and the purchaser's attention is drawn to such labelling as the choice of a suitable toy for a particular child remains the responsibility of the purchaser. In the selection of a toy, it is important that the age of the child and the nature and stage of his or her mental and physical development be considered.

SPECIFICATION

1 SCOPE. This standard specifies flammability requirements for toys and flammability labelling requirements for certain materials used in or on toys.

2 APPLICATION. This standard applies to all toys except those excluded in Clause 2 of AS 1647, Part 1.

3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

3.1 Toy means an object or a number of objects manufactured and designed and/or labelled and/or marketed as a plaything for a child or children up to the age of 14 years.

3.2 Burning time means the time required to burn a strip of material a defined distance when tested in accordance with AS 1176, Part 2. It is expressed as the mean time of a number of determinations made during testing of the material.

Where the material being tested is paper, all references to fabric, textile material and piece goods in AS 1176 shall be interpreted to mean paper material where this is appropriate, or ignored where such an interpretation is not appropriate.

NOTE: Although AS 1176 only relates to the testing of textile materials, it is believed that the same test procedure can be used for the testing of paper. Consequently, when paper is being tested for compliance with the requirements of AS 1176, it will be necessary to interpret references to fabric, textile material and piece goods to mean paper, where this is appropriate.

For example, in Clause 2.5.1 (d) of AS 1176 Part 2, the term 'fabrics' is to be read as 'paper'.

However, where it is not appropriate to interpret references to fabric, textile material and piece goods to mean paper, the requirements can be ignored.

For example, in Clause 2.5.1 (b) of AS 1176 Part 2, the reference to warp and weft threads of a piece good is to be ignored if the paper is not in a woven form.

3.3 Fabric means a woven, knitted or non-woven textile material manufactured from fibres, filaments or yarns.

3.4 Fibre means matter, either natural or man-made, characterized by flexibility, fineness and high ratio of length to thickness.

3.5 Ignition time means the time required to ignite a material when tested in accordance with AS 1176, Part 1. It is expressed as the mean time of a number of determinations made during testing of the material.

Where the material being tested is paper, all references to fabric, textile material and piece goods in AS 1176 shall be interpreted to mean paper material where this is appropriate, or ignored where such an interpretation is not appropriate.

NOTE: See Note to Clause 3.2.

3.6 Paper means cellulosic material, including composite materials, of which a cellulosic material is a component.

3.7 Play enclosure means a toy enclosure which has a sufficiently large volume to enclose a child, e.g. tent, puppet theatre.

3.8 Playwear means a toy which is designed to be worn by a child, e.g. glove puppets, disguise costumes (e.g. cowboy outfits, nurses' uniforms),

capas, headwear (e.g. hoods), but not including paper hats.

3.9 Surface burning time means the time required to propagate a flame on the surface of a material when tested in accordance with AS 1176, Part 3. It is expressed as the minimum time of a number of determinations made during testing of the material.

Where the material being tested is paper, all references to fabric, textile material and piece goods in AS 1176 shall be interpreted to mean paper material where this is appropriate, or ignored where such an interpretation is not appropriate.

NOTE: See Note to Clause 3.2.

4 PROHIBITED MATERIALS. Toys shall not be made from or include any of the following materials:

- (a) Celluloid.
- (b) Cellulose nitrate, except when used in varnish or paint.
- (c) Acetate in fibre form.

5 GENERAL REQUIREMENTS.

NOTE: Although this Clause specifies that the materials as *used* on the toy are to be tested in order to ascertain whether they comply with the relevant requirements, it is recommended that each material be also tested *before* the material is applied to the toy.

5.1 Fabrics.

5.1.1 Surface burning time. All fabrics used on a toy shall have a surface burning time of 10 s or more.

5.1.2 High fire danger fabric. Where one or more fabrics used in the construction of a play enclosure or playwear has—

- (a) an ignition time of less than 6 s; or
- (b) a burning time of less than 18 s;

a label complying with the requirements of Clause 6.1 shall be attached to that fabric or one of those fabrics of the play enclosure or playwear.

5.1.3 Low fire danger fabrics. Where each fabric used on a play enclosure or playwear has an ignition time of 6 s or more and either—

- (a) a burning time of 18 s or more and no determination of the time to burn a test specimen is less than 16 s in either the lengthwise or widthwise direction; or
- (b) after a repeat test as required by Clause 2.7.1 (h) of AS 1176, Part 2, six or more of the eight test specimens of the fabric fail to burn 500 mm in the lengthwise direction and in the widthwise direction;

a label complying with the requirements of Clause 6.2 may be attached to a fabric component of the play enclosure or playwear.

NOTE: The attachment of a low fire danger label to a play enclosure or playwear is optional because fabrics which comply with the requirements in Clause 5.1.3 (a) or (b) meet the requirements of fabrics for domestic apparel of the low fire hazard type as specified in AS 1248.

5.2 Paper.

5.2.1 Surface burning time. All paper used on toy shall have a surface burning time of 10 s or more.