

Australian/New Zealand Standard™

Accessories for child restraints for use in motor vehicles



AS/NZS 8005:2013

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Australian/New Zealand Standard™

Accessories for child restraints for use in motor vehicles

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PREFACE

This Standard was prepared by the Joint Australian/New Zealand Committee CS-085, Child Restraints.

The objective of the Standard is to provide minimum requirements for the design, construction, performance and informative labelling for products sold separately as accessories for child restraints covered by AS/NZS 1754, *Child restraint systems for use in motor vehicles*.

One of the general principles of this Standard is that accessories do not compromise the compliance of any restraint on which they are used nor increase the risk of injury for the child. These principles are expanded on in Appendix A.

It is acknowledged that some of the accessories covered by this Standard are desirable for use with child restraints when transporting some children with disabilities or medical conditions. For specific guidance on child restraints for children with disabilities, see AS/NZS 4370, *Restraint of children with disabilities in motor vehicles*.

Straps that include fittings for the connection to ISOFIX low anchorages in vehicles are not included in this Standard as it is considered that there are risks for children if these straps are applied to child restraints that are not designed for this method of installation. AS/NZS 1754 does not permit connection straps that are not attached to the child restraint and requires child restraints to include advice that the addition of ISOFIX compatible attachment connectors are not to be used on child restraints that are not designed for these connectors.

Attention is drawn to the Australian Federal Government's Consumer Protection Notice No. 4, which requires compliance of certain components used with child restraints, and to components that anchor a child restraint to the vehicle. The Notice is available from the Australian Consumer and Competition Commission.

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.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Accessories for child restraints for use in motor vehicles**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements and test methods for accessories and add-on devices to be used with child restraints, as defined in AS/NZS 1754, and items that are to be used to improve the comfort or fit of adult restraints for children.

Examples of items covered by this Standard include those designed to substitute for existing components of a child restraint (e.g. covers), those designed to enhance a child's comfort, to provide entertainment, for storage, to facilitate restraint fitment to some vehicles or in some circumstances, to limit the propensity for a child to be able to unbuckle themselves from a restraint inappropriately.

Excluded from this Standard are—

- (a) devices that adapt adult seatbelts to better fit a child or to convert a lap-sash to lap-only belt, as these are covered by AS/NZS 1754, i.e. Type H converters;
- (b) manufacturer-supplied replacement parts for items that form part of the restraint when originally certified under AS/NZS 1754, whose performance is thus controlled by AS/NZS 1754; and
- (c) devices that are designed to be permanently fitted to a vehicle to allow for child restraint installation.

This Standard does not cover accessories that are intended for vehicle occupants over 16 years of age.

1.2 APPLICATION

This Standard comprises sections providing requirements for various categories of accessories. Sections 2, 3 and 4 are general requirements that apply to all accessories. In addition to these requirements, specific requirements for categories of accessory are covered in Sections 5 to 12. An accessory is generally expected to be met by one of these specific sections but shall meet all of the applicable requirements from Sections 2, 3 and 4.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1753	Webbing for restraining devices for occupants of motor vehicles
2001	Methods of test for textiles
2001.5.4	Method 5.4: Dimensional change—Domestic washing and drying procedures for textile testing (ISO 6330:2000, MOD)
2700	Colour Standards for general purposes
2331	Methods of tests for metallic and related coatings
2331.3.1	Method 3.1: Corrosion and related property tests—Neutral salt spray (NSS) test

AS

- 2755 Textile fabrics—Burning behaviour
 2755.2 Part 2: Measure of flame spread properties of vertically oriented specimens
 2755.3 Part 3: Determination of surface burning time

AS/NZS

- 1754 Child restraint systems for use in motor vehicles
 2596 Seat belt assemblies for motor vehicles (ECE Regulation No. 16, MOD)
 3629 Methods of testing child restraints
 3629.1 Method 1: Dynamic testing
 3629.3 Method 3: Dynamic testing of upper anchorage components
 3629.5 Method 5: Determination of quick-release device actuation force
 3629.10 Method 10: Bite test
 3629.12 Method 12: Test for openings in fabric or netting
 4475 Restraint systems for motor vehicles—Performance tests
 4475.5 Method 5: Determination of locking angle of a tilt-lock adjustment device

AS/NZS ISO

- 8124 Safety of toys
 8124.1 Part 1: Safety aspects related to mechanical and physical properties
 8124.3 Part 3: Migration of certain elements (ISO 8124-3:2010, MOD)

ASME

- B18.21.1 Lock washers (Inch series)

NZS

- 5432 Webbing for restraining devices for occupants of motor vehicles

1.4 DEFINITIONS

For the purpose of this Standard, the definitions below apply. Where a term is not defined in this Standard, the definitions in AS/NZS 1754 apply.

1.4.1 Accessories

Parts that may be added to or removed from a child restraint in normal use.

1.4.2 Actuation surface

The surface area of a quick-release device that is pressed or pulled to activate the device.

1.4.3 Adjuster

A device designed to provide the means of adjustment.

1.4.4 Anchorage components

The terminal parts of a child restraint design for attachment to a vehicle or seat.

1.4.5 Anchorage point

That part of a vehicle at which the restraining forces from the anchorage component are transferred to the vehicle.

1.4.6 Attachment clip

A device, that allows the child restraint to be quickly and conveniently attached to and removed from a vehicle.

1.4.7 Authority

A body that has legal powers and rights.

1.4.8 Booster seat

A device used for raising the child's position in the motor vehicle and adapting an adult seatbelt to make it suitable for a child, and having a back above the seating plane.

1.4.9 Child restraint

A device used in conjunction with an adult seatbelt or ISOFIX compatible lower attachment connectors to restrain a child passenger of a motor vehicle in the event of a vehicle impact and thus minimize the risk of bodily injury.

1.4.10 Converter

A device, other than a booster seat, for varying the geometry of an adult lap-sash belt to make it better fit the occupant or provides additional restraint of the occupant on booster seat.

1.4.11 Crotch strap

A centrally located webbing strap that is designed to attach the quick-release device to the child restraint and transmit the occupant-restraining forces acting on the quick-release device to the child restraint.

1.4.12 Energy absorbing properties

Components or materials that collapse or squash during contact with the dummy during dynamic testing that absorb energy, particularly on the head, to lessen injury.

1.4.13 Fabric

A woven, knitted or non-woven textile material, in the form of a single material or multi-component (e.g. coated, quilted and multi-layered sandwich construction, and similar combinations) materials.

1.4.14 Flame spread time

The time taken by a flame on a burning material to travel from the first to the third marker threads when tested in accordance with AS 2755.2, using a 5 s surface ignition time.

1.4.15 ISOFIX compatible child restraint

Child restraint fitted with lower attachment connectors that are capable of connecting to the ISOFIX low anchorages in a vehicle.

1.4.16 Load bearing part

Any component that takes either a tensile, compressive or rotational load during the dynamic testing.

1.4.17 Locking clip

A device that either—

- (a) joins the lap and sash together to convert the seatbelt to a lap belt; or
- (b) prevents the seatbelt from slipping, loosening or tightening.

NOTE: Some devices are also known as 'gated buckles' or 'gated three bar slides'.

1.4.18 Lower attachment connectors

A pair of connection means, either rigid or flexibility attached, extending from the child restraint that are designed to engage with ISOFIX low anchorages in a vehicle.

1.4.19 Means of adjustment

Those parts of a child restraint by which the restraint is adjusted to suit the wearer or the vehicle, or both.

1.4.20 Permanently attached

Where a component is attached to the child restraint or another component in such a way that it cannot be removed casually or inadvertently, but need not be so securely attached as to require the use of a tool to remove it.

1.4.21 Permanently fixed

Where a component is attached to the child restraint or another component in such a way that it cannot be completely detached without the use of tools.

NOTE: The position of attachment may or may not be able to be adjusted/alterd.

1.4.22 Permanently fixed in position

Where a component is attached to the child restraint or another component in such a way that it cannot be completely detached without the use of tools, and whose position cannot be adjusted or altered.

1.4.23 Play devices

Devices that are intended to entertain or provide play activity for the occupant of the child restraint, and includes toys.

1.4.24 Quick-release device

A securing device with provision for quickly releasing the child from the child restraint, and nominated by the manufacturer of the child restraint as being provided for that purpose.

1.4.25 Rigid component and material

Any component or material that is stiffer than webbing, fabric, padding, comfort foam and structures that significantly flex or hinge when a force of 50 N is applied.

1.4.26 Set screw

A screw used to fix the upper anchor fitting to the vehicle, and referred to in consumer literature as an 'attachment bolt'.

1.4.27 Shall

Indicates that a statement is mandatory.

1.4.28 Should

Indicates a recommendation.

1.4.29 Strap

A flexible component designed to restrain the occupant of a child restraint, or the child restraint, or a combination of these, and transmit the restraining forces to the vehicle.

1.4.30 Submarining

An occurrence where the lap belt rides up over the iliac crest and into the soft tissue area of the abdomen.

1.4.31 Surface burning time

The time required for the pile or nap of a fabric to burn to the reference mark, when tested in accordance with AS 2755.3. It is expressed as the minimum value of a number of determinations made during testing of the fabric.

1.4.32 Top tether extension strap

A strap for extending the child restraint top tether strap to allow a child restraint to be installed into the vehicle, such that it has an anchor fitting positioned in a location out of reach of the child restraint's top tether strap. Generally, a top tether extension strap is fitted with an upper attachment clip at one end to attach to the vehicle's anchor fitting, and a fitting at the other end that will allow connection with the child restraint top tether strap and its top tether attachment clip. The strap may be adjustable.

1.4.33 Top tether strap

A strap for extending the vehicle anchorage to allow a child restraint to be installed into the vehicle, such that it has an anchor fitting positioned in a location out of reach of the top tether strap. Generally, an anchorage strap is fitted at one end with a part that accepts an upper attachment clip on the child restraint top tether strap and at the other end has a fitting that can be secured to the vehicle's anchor point by a set screw. The strap may be adjustable.

1.4.34 Trims

Trimmings such as piping, appliques, ribbon, overlays, motifs, embroidery, edge trim and similar ornaments.

1.4.35 Upper anchor fitting

A component that attaches to the upper anchorage point in a vehicle for the purpose of engaging the top tether strap attachment clip, referred to in consumer literature as the 'anchor fitting'.

1.5 ADDITIONAL INFORMATION

Where requirements are not clear for a particular accessory and its use with a child restraint, then clarification of the requirement may be possible with reference to AS/NZS 1754. This Standard is intended to supplement the requirements of AS/NZS 1754.

SECTION 2 GENERAL MATERIALS

2.1 GENERAL

This Section specifies general requirements for the design, construction and performance of accessories. This Section shall be applied in conjunction with the specific requirements for the applicable category of accessory covered in Sections 5 to 12.

2.2 STAINING

Accessories in contact with the occupant, other occupants or vehicle interior should not cause staining or discolouration of clothing or vehicle trim.

2.3 NET

The following shall apply:

- (a) Any net for occupant restraint shall be made of webbing complying with AS 1753/NZS 5432 in respect of strength and durability, or shall be made from materials which provide the same strength and durability as a webbing net. The longest dimension of each aperture in the net shall be not greater than 40 mm.
- (b) Any fabric with holes or netting, excluding netting made by webbing, that is accessible to the occupant when properly restrained shall not have holes that accept a 5 mm diameter test probe unless the holes or apertures accept a 12 mm diameter test probe, when tested in accordance with AS/NZS 3629.12.

2.4 METAL PARTS OR COATED METAL PARTS

Metal parts or coated metal parts, when exposed for not less than 50 h to salt spray in accordance with AS 2331.3.1, shall show no significant evidence of base metal corrosion or of blistering of the coating, and shall be operational. Any load bearing heat treated ferrous metal part that has been electroplated shall be treated to remove hydrogen embrittlement.

Significant evidence means base metal corrosion extending more than 3 mm from an edge or from a line scribed through the coating.

Testing may be performed on individual components or on assemblies.

2.5 TOXICITY

Any part or material that can be reasonably expected to be mouthed or sucked by a child in the restraint, shall comply with the requirements of AS/NZS ISO 8124.3. For the purpose of this Standard, the words 'child restraint component' shall be substituted for the word 'toy'.

NOTE: Mouthed or sucked parts or materials include seat covers, seat padding, shoulder pads, harness webbing, seat chair material and other accessories.

2.6 BITE RESISTANCE OF FABRIC ITEMS

Fabric items that are accessible to a baby occupant's mouth when normally restrained shall be resistant to a child chewing on the component. These fabric items shall be tested in accordance with AS/NZS 3629.10 without material pieces larger than 25 mm² in size being separated from the accessory.

2.7 PLASTICS STABILIZATION

Plastics used in accessories should be designed to achieve a useable life of at least 10 years (when used in accordance with the manufacturer's instructions, and not exposed to extensive periods of sunlight or high temperatures).

Plastics used in main load-bearing mouldings shall be stabilized against UV and thermal degradation. Thermally stabilized plastics shall resist degrading when subject to the moulding process and the temperature changes normally encountered in vehicles.

Either a laboratory report indicating the addition of appropriate stabilizers, or provision of data sheets on the additives stating that they provide both thermal and UV stabilization shall be provided.

NOTE: Materials like polypropylene are susceptible to rapid thermal degradation. Thermal degradation has nothing to do with capability of the plastic to retain its structural integrity when hot.

2.8 THREAD

Threads for sewing load-bearing components shall have similar physical and chemical properties to materials being sewn. Threads containing natural fibres shall not be used for sewing load-bearing webbing.

SECTION 3 GENERAL DESIGN, CONSTRUCTION AND PERFORMANCE

3.1 GENERAL

This Section specifies general requirements for the design, construction and performance of accessories. This Section shall be applied in conjunction with the specific requirements for the applicable category of accessory covered in Sections 5 to 12.

3.2 PROTECTION AND PERFORMANCE

Accessories shall not lessen the protection and performance offered by the child restraint or seatbelt. The design and performance requirements for each category of accessories are covered in their specific sections.

In dynamic testing, accessories shall not limit forward rotation of the head by directly restraining the head or neck. Accessories shall not contact the throat during frontal crash testing.

3.3 TESTING

The dynamic testing of accessories fitted to child restraints is specified in each Section (6 to 12). Dynamic testing uses the dummies specified in Section 5 of AS/NZS 1754:2013 and the appropriate testing methods from AS/NZS 3629.1.

Section 5 (for anchorage and attachment components) uses test methods from AS/NZS 3629.3, and Section 7 (for seat belt extenders) uses test methods from AS/NZS 2596.

Dynamic testing performance requirements of head excursion, tether strap loading, and head deceleration is not required for the testing unless otherwise specified in the specific Section of this Standard.

NOTE: Performance requirement used in this Standard are based on potential risks to the child as well as those identified in Section 4 of AS/NZS 1754:2013.

3.4 WORKMANSHIP, FINISH AND HAZARDS

The following shall apply:

- (a) *General* All parts of the accessory shall be finished smooth and free from rough edges, sharp corners, burrs and any irregularities that are potential hazards to the child occupant in the child restraint that the accessory is fitted to or to occupants sitting next to the child restraint that is using the accessory, or cause discomfort to the occupant or damage the occupant's clothing or vehicle trim. Also, parts shall not cause damage to, nor pierce the webbing of, the child restraint or the seatbelt.
- (b) *Hazardous sharp edges and hazardous sharp points* The accessory shall be examined for the accessibility of sharp points and sharp edges in accordance with AS/NZS ISO 8124.1. For examination purposes, the accessory shall not be disassembled other than as permitted in the manufacturer's instructions. When tested in accordance with AS/NZS ISO 8124.1, any accessible sharp edge or sharp point shall not be a hazardous sharp edge or a hazardous sharp point as defined in AS/NZS ISO 8124.1.

For the purpose of this Standard, where the word 'toy' appears in AS/NZS ISO 8124.1, the word 'accessory' shall be substituted.

- (c) *Ingestion or inhalation hazards* Any component that is designed to be removed from the accessory shall not present an ingestion or inhalation hazard when tested in accordance with AS/NZS ISO 8124.1.
- (d) *Removable projections* Except for projections that are designed to be detachable, any projection that is able to be grasped with the thumb and forefinger or the teeth of a child shall be attached to the accessory in a manner that prevents the component being removed or broken when it is tested in accordance with the torsion test and the tension test in AS/NZS ISO 8124.1. Projections inside the child restraint that may contact the head shall comply with Item (e).
- (e) *Projections contactable by the occupant's head* Projections shall not be included on any accessory that can be contacted by a child's head when sitting in the child restraint with the exceptions below.

Acceptable projections are—

- (i) a discontinuity of surfaces that creates a step with a height of more than 5 mm with a radius of at least 5 mm or chamfered sides of at least 45°;
- (ii) a protrusion of more than 5 mm in height and at least 10 mm in diameter with radius of no more than 2 mm on each edge; and
- (iii) a protrusion of no more than 5 mm in height with at least 5 mm radius on each edge.

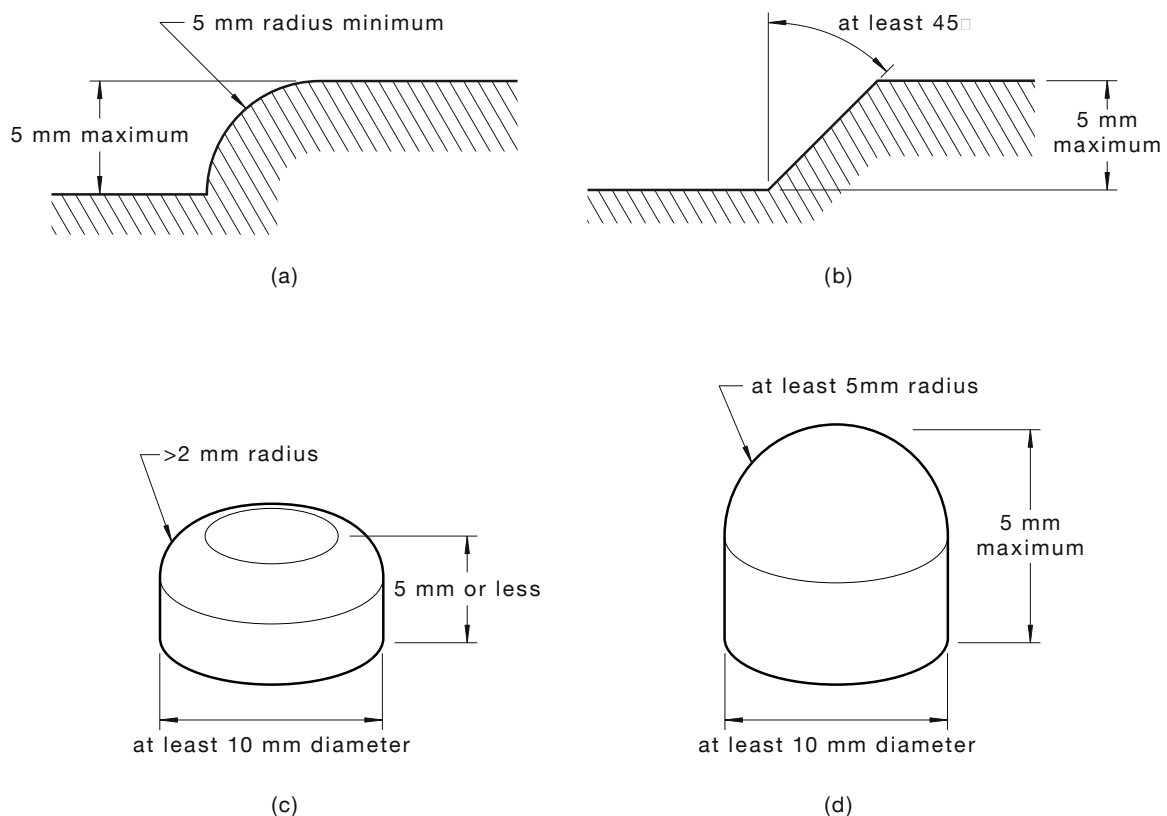


FIGURE 3.1 EXAMPLES OF CONTACTABLE PROJECTIONS

3.5 PLAY DEVICES

The following shall apply:

- (a) Play devices intended to be used with child restraints shall comply with the applicable performance requirements of AS/NZS ISO 8124.1 for sharp edges, small parts, magnets and other safety requirements. With the exception of straps used to retain accessories or play devices, cord lengths on play devices shall not exceed 360 mm in length.

Play devices shall comply with the requirements of AS/NZS ISO 8124.3.

- (b) Play devices made of rigid materials shall not be installed in a position above the child's legs where the child's head may contact when the head rotates forward in a crash. Play devices with energy absorbing properties are acceptable.

NOTE: An example of such a play device is a steering wheel on a play tray or suspended in other ways.

- (c) Play devices made of rigid material on cords shall not be suspended in front of the occupant where they may contact the occupants head in a crash. Where concerns exist, then the testing authority shall conduct dynamic testing on the child restraint.

NOTE: In using AS/NZS ISO 8124 for evaluation of play devices, the term 'toy' is replaced by 'play device'.

3.6 DURABILITY OF COMPONENTS

As a guide to durability, parts which slide, roll over or engage in each other should have sufficient resistance to wear to remain effective after 5000 operations.

3.7 FORESEEABLE MISUSE

Accessories should be designed to minimize incorrect installation, fitment and use where the level of safety can be reduced. The performance requirements of this Standard may be applied in each configuration should a testing authority consider that an alternative configuration makes the restraint system unsuitable or unsafe.

An example of such an alternative configuration is where an accessory that could be fitted upside down such that the features of the accessory may then be considered a risk to the occupant.

SECTION 4 PACKAGING, MARKING AND INSTRUCTIONS

4.1 GENERAL

This Section specifies general requirements for the packaging, and marking and labelling of child restraint accessories as well as instructions for use and safety. This Section shall be applied in conjunction with the specific requirements for the applicable category of accessory covered in Sections 5 to 12.

The classifications are—

- (a) information to be supplied on the packaging;
- (b) information to be supplied in an instruction book or sheet; and
- (c) information to be permanently marked on the accessory.

NOTE: Manufacturers making a statement of compliance with this Standard on a product, or on packaging, or promotional material related to that product, are advised to ensure that such compliance is capable of being verified.

4.2 GENERAL REQUIREMENTS

4.2.1 Language

The information shall be printed in English.

4.2.2 Print size and contrast

Printing shall be clear and legible and shall be in either initial capital and lower-case letters or all capital letters, except for the warnings in Table 6.2 of AS/NZS 1754:2013, which shall be in the same case as shown in the Table. Unless otherwise specified the capital letters shall have a height of not less than 1.8 mm.

NOTE: Examples of suitable typeface for printing instructions are Helvetica and Univers.

Printed statements and warnings required by this Section shall be in contrasting colour to the background.

Moulded-in text where the print and the background are the same colour as the moulding is deemed as having no contrast.

4.2.3 Illustrations

The instruction book or sheet shall include diagrams showing the correct methods of attachment of the accessories and the correct method of use.

4.2.4 Durability of marking

The wording on labels fixed to the product and on fabric covers shall be easily legible when rubbed by hand for 15 s with a piece of cloth soaked in water, allowed to dry and rubbed for 15 s with a piece of cloth soaked with liquid domestic dishwashing detergent.

Where a fabric or flexible label is used for the marking requirements for an accessory, the marking shall remain easily legible when the fabric component is washed 6 times according to the care label. Where care instructions are not provided, then 6 gentle machine wash cycles shall be performed. Label edges shall not curl or roll-up such that the marking becomes obscured. Labels shall remain fully attached and there shall be no signs of fraying. The wording on the labels shall be easily legible after washing.

4.2.5 Adhesion of labels

4.2.5.1 *Adhesive labels fixed to materials other than foam*

The force required to peel an adhesive type label over a distance of 10 mm or before the label begins tearing, shall be not less than 10 N/25 mm width when the label is subjected to the following procedure:

- (a) Condition and test three samples at $23 \pm 5^\circ\text{C}$ and $50 \pm 10\%$ relative humidity.
- (b) Labels shall be attached for a minimum of 48 h in the manner as used by the child restraint manufacturer.
- (c) For each label, peel back a length of not less than 15 mm to enable gripping of the label.
- (d) Mark at any starting point.
- (e) Attach a force measuring machine with an accuracy of ± 2 N by clamping the label without creating a stress point on the label.
- (f) Apply a steadily increasing force at a rate of not less than 75 mm/m while pulling the label at an angle of 180° so that the label is doubled back and in alignment with itself, until peeling commences or tearing occurs.
- (g) Measure the force over 10 mm of travel or until tearing occurs.

4.2.5.2 *Adhesive labels fixed to foam*

The force required to peel an adhesive type label over a distance of 10 mm or before the label begins tearing, shall be not less than 5 N/25 mm width when the label is subjected to the procedure in Clause 4.2.5.1.

4.2.6 Marking of accessories

The marking on an accessory using fabric labels shall meet the requirements of Clause 6.8 of AS/NZS 1754:2013.

4.2.7 Use of product name

The manufacturer may substitute the product name, e.g. 'This.....(name of product)', for the words 'this accessory' in required statements.

4.2.8 Standard warning heading format

Where a warning heading is specified then the use of the heading shall comply with Clause 6.1.8 of AS/NZS 1754:2013.

4.3 FLEXIBLE PACKAGING

Flexible packaging shall meet the requirements of Clause 6.2 of AS/NZS 1754:2013.

4.4 GENERAL INFORMATION TO BE SUPPLIED ON PACKAGING

The following information shall be on the packaging:

- (a) Registered brand name and local distributors name (if manufactured overseas).
- (b) Model designation.
- (c) References to the model(s) of child restraints that the accessory is suitable for in terms of one of the following categories:
 - (i) A specific child restraint and including the model name and any reference number.