

Australian Standard™

Slide fasteners

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- Australian Chamber of Commerce and Industry
- Australian Retailers Association
- Australian Wool Processors Council
- Certification Interests
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Australian Standard™

Slide fasteners

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PREFACE

This Standard was prepared by the Standards Australia Committee TX-018, Specifications for Textile Furnishings to supersede AS 2332—1980.

This Standard is based on but not equivalent to BS 3084—1992, *Specification for slide fasteners* but reference was also made to the Japanese Standard, JIS S 3015:1993, *Slide fasteners* and the US Federal Specification FEDSPEC V-F-106F:1998, *Fastener, slide, interlocking* and results of testing of slide fasteners which had given further insight into failures and the need for tougher requirements.

Slide fasteners are classified by their chain width with performance classes ranging from ultra light to ultra heavy. Ultra heavy is an added class in this edition of the Standard. The secondary method of determining class is by the end use.

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

Australian Standard

Slide fasteners

1 SCOPE

This Standard specifies performance levels for the following characteristics of slide fasteners made from interlocking components mounted on textile tapes: strengths of puller attachment, closed-end, top-stop, open end fastener box, reciprocating mechanism, closed fastener when extended laterally, open end attachment when extended laterally, slider lock and security of separate element fasteners laterally and longitudinally. Tests for quantifying these properties are given in the Appendices A to J. In addition, performance levels are specified for colourfastness to washing, drycleaning, water, and for dimensional change to washing and drycleaning.

NOTE: Guidance on factors to be considered when specifying slide fasteners is given in Appendix K.

Properties specific to applications such as aeronautics and fasteners of complicated structure such as three-way and double-pull are not included within the scope of this Standard.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2001 Methods of test for textiles

2001.4.B02 Part 4.B02: Colourfastness tests—Colourfastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994, MOD)

2001.4.E01 Part 4.E01: Colourfastness tests—Colourfastness to water

2001.4.3 Part 4.3: Colourfastness tests—Determination of colourfastness to rubbing

2001.4.15 Part 4.15: Colourfastness tests—Determination of colourfastness to washing

2001.4.16 Part 4.16: Colourfastness tests—Determination of colourfastness to dry cleaning solvents

2001.4.21 Part 4.21: Colourfastness tests—Determination of colourfastness to light using an artificial light source (mercury vapour, tungsten filament, internally phosphor-coated lamp)

2001.5.4 Part 5.4: Dimensional change—Determination of dimensional change in laundering of textile fabrics and garments—Automatic machine method

2001.5.7 Part 5.7: Dimensional change—Determination of dimensional change on dry cleaning in perchloroethylene excluding finishing—Machine method

2193 Calibration and classification of force-measuring systems

ISO

105 Textiles—Tests for colour fastness

105-B02 Part B02: Colour fastness to artificial light: Xenon arc fading lamp test

105-C03 Part C03: Colour fastness to washing: Test 3

105-D01 Part D01: Colour fastness to dry cleaning

105-E01 Part E01: Colour fastness to water

105-X12 Part X12: Colour fastness to rubbing

ISO

3175 Textiles—Dry cleaning and finishing

3175-1 Part 1: Method for assessing the cleanability of textiles and garments

6330 Textiles—Domestic washing and drying procedures for textile testing

3 DEFINITIONS

For the purpose of this Standard the following definitions apply. Diagrams of the basic components, dimensions and types of slide fastener which illustrate many of the definitions in this Clause are given in Figures 1 to 4.

3.1 Slide fastener

A fastening device consisting of two flexible, interlocking stringers (see Clause 3.3.9), with or without end stops, and a slider (see Clause 3.3.8) so arranged that by moving the slider along the stringers in one direction an opening is formed, and by moving it in the other the opening is closed. The end that is adjacent to the slider when the device is fully open is designated the bottom end. The other end is designated the top end.

3.2 Batch of fasteners

A quantity of fasteners having one design, one performance code and one size or box (see Clause 3.4.3).

3.3 Fastener components and dimensions

3.3.1 Bottom stop

The stop at the bottom end of the chain that checks the opening movement of the slider (see Figure 2(a)).

3.3.2 Chain

A continuous closure formed by interlocking two compatible stringers (see Figure 1).

3.3.3 Chain width

The width across the interlocked elements on which the slider runs (see Figure 2(b)).

3.3.4 Elements

Metal or plastic teeth fixed to the edge of tapes which engage or separate from each other under the action of the slider.

3.3.5 Length of fastener

The distance from the top of the slider to the bottom of the bottom stop, or box in the case of an open-end fastener, measured with the slider in the top position and with the puller in the downward position (see Figure 2(b)).

3.3.6 Locking device

A device incorporated in the slider unit restricting its free movement along the fastener length in an opening direction. The locking device may operate either automatically on release of the puller or by manual pressure on the puller.

3.3.7 Puller (or pull)

The fitting attached to the slider to facilitate manipulation.

3.3.8 Slider

The moving component consisting essentially of a slider body and, normally, a puller which opens or closes the fastener by separating or engaging the interlocking members. The slider may incorporate a locking device.

3.3.9 *Stringer*

A textile tape with an attached row of elements designed to interlock with a row similarly attached to another tape.

3.3.10 *Tape*

Narrow fabric to which elements are fitted.

3.3.11 *Top stop*

The stop(s) at the top end of the chain that check(s) the closing movement of the slider.

3.4 Types of fastener

3.4.1 *Closed-end fastener*

A slide fastener which does not permit the complete separation of the two stringers. Normally the open end of the fastener separates as the slider is lowered, although there is an additional type where the top ends are permanently joined together by means of a bridge stop (see Figures 3(a) and 3(b)).

3.4.2 *Concealed fastener*

A slide fastener with the tapes folded so that on closure neither the slider body nor the fastener are visible from the outside of the article.

3.4.3 *Open-end fastener*

A slide fastener having a special fitment at the bottom end of each stringer in place of the bottom stop, so designed as to permit the two stringers to be completely separated and reassembled at will when the slider is in the fully open position. The special fitment normally consists of a pin permanently fixed to the bottom end of one stringer which fits into a box permanently fixed to the bottom end of the other stringer. At both ends of separated chain there is a stopper that prevents the slider from being removed (refer to Figure 3(c)).

3.4.4 *Two-way fastener*

A slide fastener fitted with two sliders that operate with equal facility in either direction. This type is available in a variety of forms which are illustrated in Figure 4.

4 SAFETY

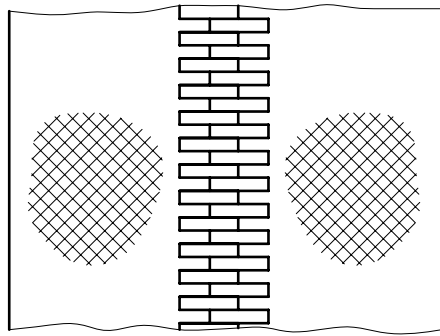
It shall not be possible for the slider to come off the fastener in normal use.

5 CLASSIFICATION

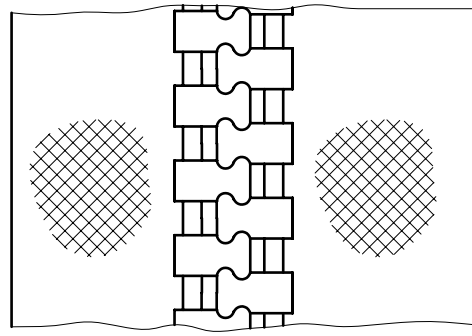
Slide fasteners are classified according to chain width (the width of gear elements) and by their end-use.

Slide fasteners of either the closed-end type or the open-end separable type shall be classified in accordance with the requirements of Table 1.

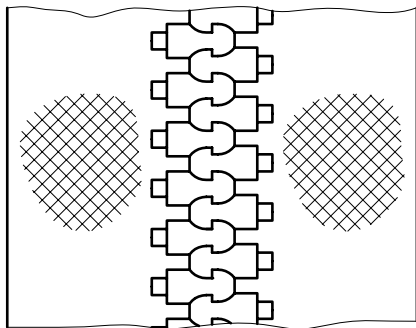
Table 2 specifies the minimum performance requirements for each classification.



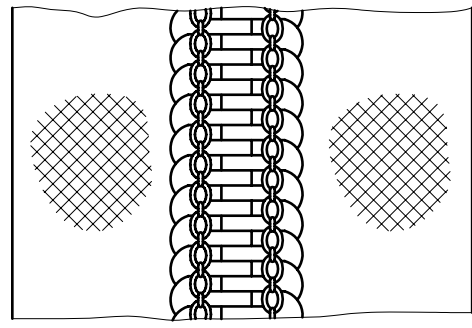
(a) Metal elements



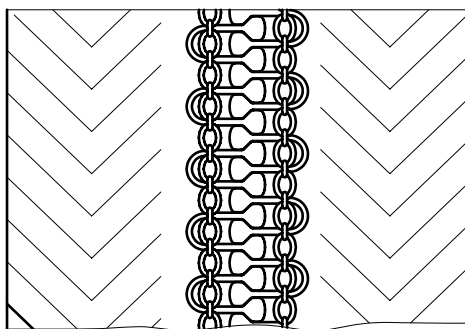
(b) Diecast or plastic moulded elements



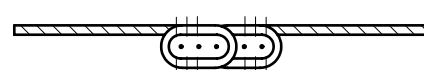
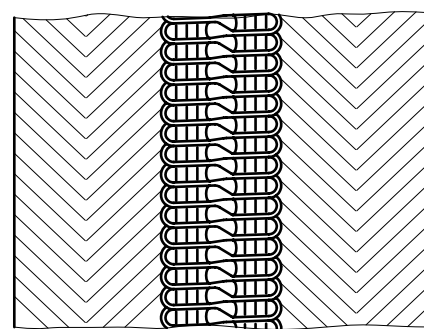
(c) Diecast or moulded winged elements



(d) Offset coil elements

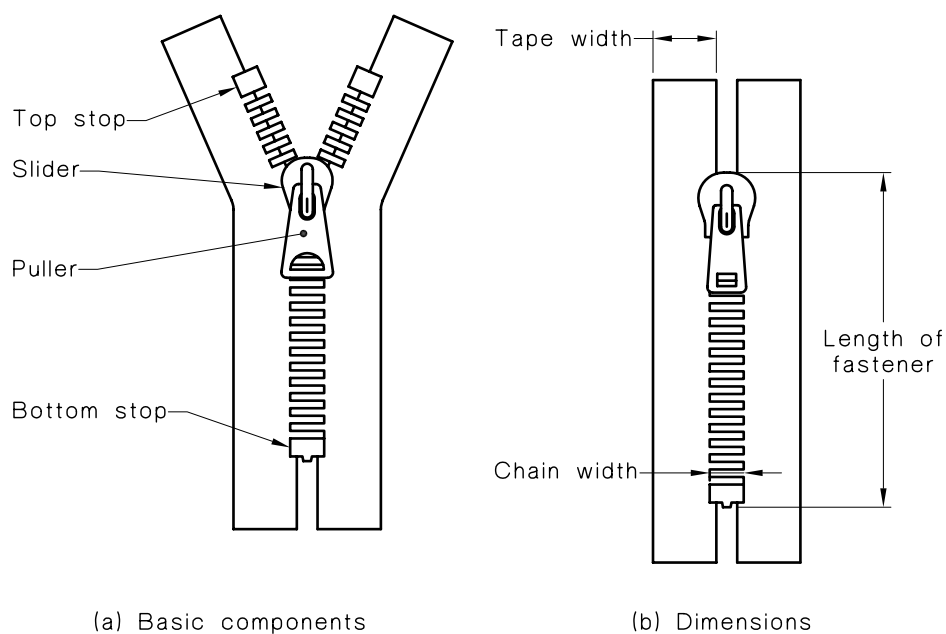


(e) Mended or ladder elements



(f) Woven-in coil elements

FIGURE 1 FASTENER CHAIN TYPES



NOTE: Only metallic fasteners are illustrated.

FIGURE 2 SLIDE FASTENERS. BASIC COMPONENTS AND DIMENSIONS

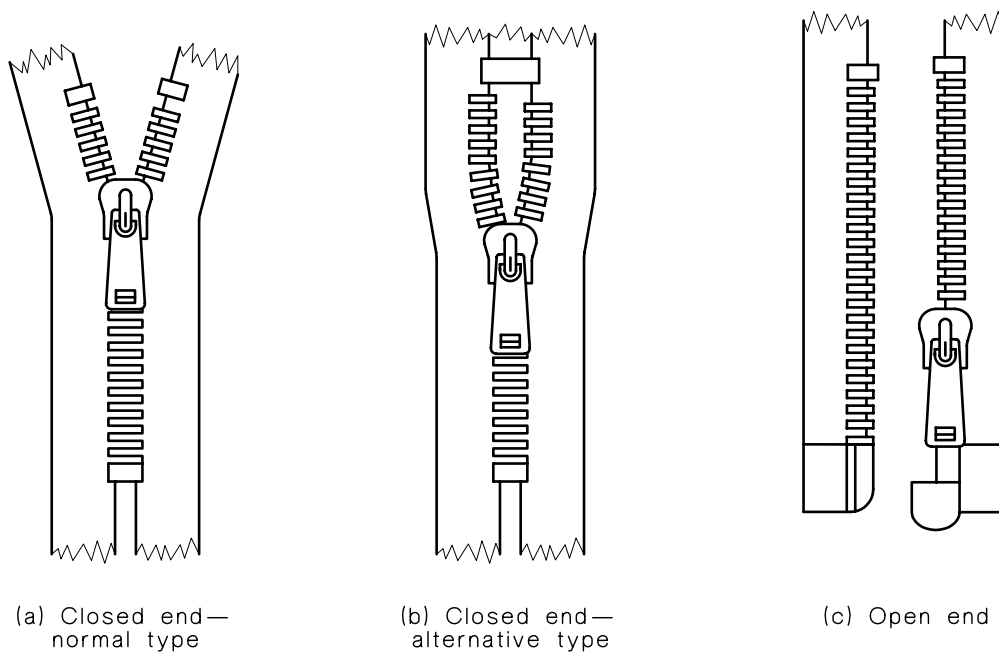


FIGURE 3 ONE-WAY FASTENERS

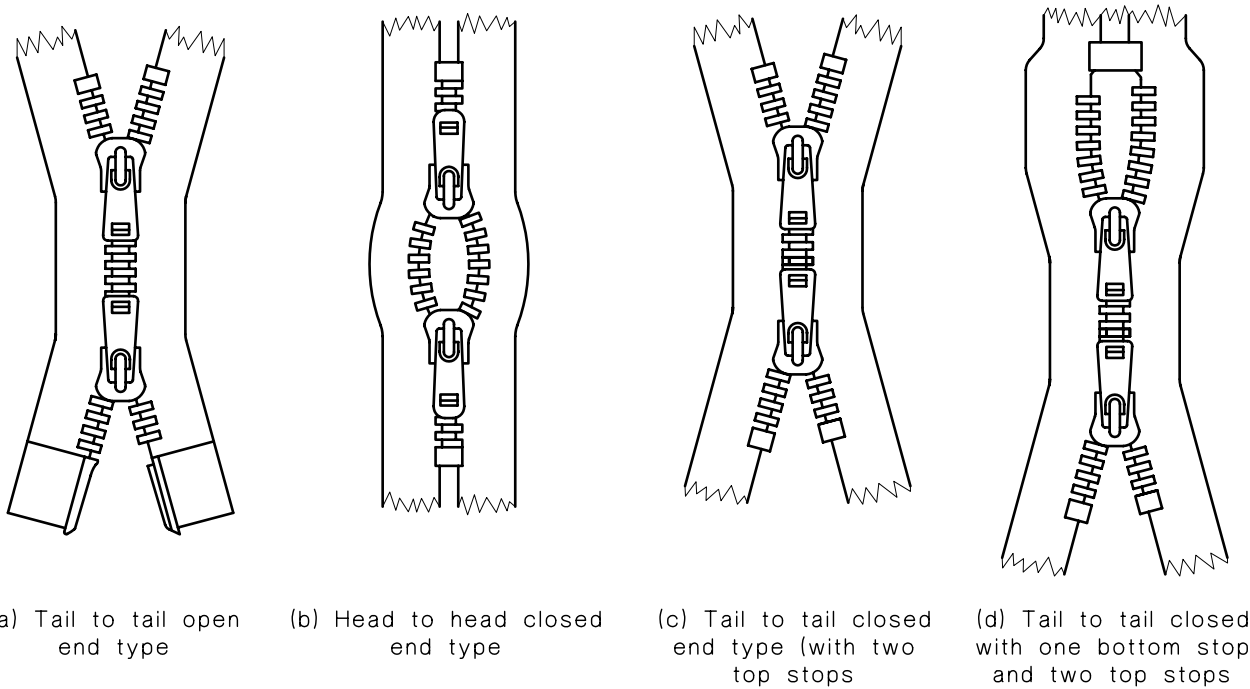


FIGURE 4 TWO-WAY FASTENERS

TABLE 1
CLASSIFICATION

Classes	Marks	Chain width, mm	General application
Ultra light	UL	2.5 or more—less than 4.0	Purses, wallets, ultra-light clothing
Light	L	3.5 or more—less than 5.0	Dresses, trousers, furniture, bags
Medium	M	4.5 or more—less than 6.5	Automobile trim, jeans, work clothes, jackets, luggage, tents, leisure goods, footwear
Medium-heavy	MH	5.5 or more—less than 9.0	Jackets, leisure goods, luggage, footwear, tents, jeans
Heavy	H	8.0 or more—less than 11.0	Jackets, marine leisure goods, luggage
Ultra heavy	UH	10.0 or more	Ultra heavy marine, special purpose industrial

6 PERFORMANCE REQUIREMENTS OF FASTENERS

6.1 General

With the exception of the length measurements (see Clause 6.4) all the tests described shall be carried out on initially new and unused fasteners. Failure of any part of the fastener in any test shall be deemed a failure for the fastener as a whole.

6.2 Physical performance

All fasteners shall meet the indicated performance class when tested in accordance with the tests in the same order as listed in Table 2.

6.3 Colourfastness and dimensional stability

All fasteners shall meet the indicated performance level when tested in accordance with the tests in Table 3.

NOTE: Clause 6.6 allows more than one test to be carried out on the same initially new fastener provided the fastener is still 'as new'.

6.4 Length measurement

The length of the slide fastener shall be stated in centimetres (see definition in Clause 3.3.5).

The length tolerance for fasteners shall be $\pm 1.5\%$ or ± 3 mm whichever is the greater.

6.5 Number of specimens

Three specimens shall be tested in each test.

6.6 Multiple testing of a specimen

The same specimen may be used for more than one test provided the previous test does not compromise the next test.

TABLE 2
PHYSICAL PERFORMANCE REQUIREMENTS OF FASTENERS

Test No.	Appendix	Test description for minimum performance without failure	Units	Performance class see Clause 6					
				UL	L	M	MH	H	UH¶
1	A	Puller attachment test	N	70	80	200	250	300	
2*	B	Closed-end test	N	35	60	80	100	140	
3	C	Top-stop test	N	50	70	90	110	130	
4†	D	Open-end fastener box test	N	40	70	90	120	150	
5	E	Reciprocating test: minimum cycles without failure	Cycles	500	500	500	500	500	
6	F	Lateral strength test	N	200 (JIS)	250 (JIS)	300 (JIS)	380 (AS)	490 (AS)	
7†	G	Lateral strength of open-end attachment test	N	40	70	90	120	160	
8‡	H	Slider locking test	N	15	25	50	70	90	
9§	I	Security of interlocking elements attached laterally	N	—	25	40	55	—	
10†	J	Security of interlocking elements attached longitudinally	N	—	25	40	55	—	

* This test applies to closed ended slide fasteners.

† These tests apply to open ended slide fasteners only.

‡ This test applies to slide fasteners designed to lock only.

§ These tests apply to fixed ended slide fasteners with separate elements.

¶ Performance requirements for ultra heavy are specific to the end-use (see Table 1) and should be equal to or superior in performance to the heavy class.

TABLE 3
COLOURFASTNESS AND DIMENSIONAL CHANGE REQUIREMENTS

Property	Method of test	Performance level
Colourfastness (minimum rating) to:		
Light	AS 2001.4.B02 or AS 2001.4.21 or ISO 105 Section B02	For shade depth light min 3-4 For shade depth medium min 4
Drycleaning	AS 2001.4.16 or ISO 105, Section D01	Change in colour 4 and staining 4-5
Washing	AS 2001.4.15 or ISO 105, Section C03	Change in colour 4 and staining 4-5
Water	AS 2001.4.E01 or ISO 105, Section E01	Change in colour 4 and staining 4-5
Rubbing	AS 2001.4.3 or ISO 105 Section X12	Dry 4 and Wet 3
Dimensional changes:		
Washing/laundrying	AS 2001.5.4 or ISO 6330*	±3%
Drycleaning (when applicable)	AS 2001.5.7 or ISO 3175-1	±3%

* Using washing procedure 2A or 2B and drying procedure E at 70°C (hot tumble).

7 MARKING

The slider shall be permanently marked with the manufacturers registered trademark or trade name.