

Australian Standard™

Methods of test for textiles

Method 2.22: Physical tests—Determination of yarn slippage in woven fabric at a standard stitched seam

PREFACE

This Standard was prepared by the Standards Australia Committee TX-020, Testing of Textiles, to supersede AS 2001.2.22—1986. The test method is based on but not identical with British Standard BS 3320:1988, *Method for determination of slippage resistance of yarns in woven fabrics: Seam method*.

Slippage at the seams of garments, depends on several factors such as the structure of the fabric, the type of seam and the conditions of stitching. The purpose of this test is to assess the liability to slippage of a fabric at a seam under standard conditions of seaming and testing. Seam slippage can often be minimized by the use of special types of seams and the type of seam used in the test is not necessarily the most appropriate for use in the making-up of garments.

Changes in this edition have been made to align the method with current industry practice.

METHOD

1 SCOPE

This Standard sets out a method for determining slippage of yarns in a woven fabric at a standard stitched seam.

2 APPLICATION

The method is applicable to apparel fabrics, household furnishing fabrics and upholstery fabrics. It is not applicable to certain industrial fabrics, e.g. ducks, canvas and belting.

3 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS	
2001	Methods of test for textiles
2001.1	Part 1: Conditioning procedures
2193	Calibration and classification of force-measuring systems
2860	Textiles—Stitch types—Classification and terminology

4 DEFINITIONS

For the purpose of this Standard, the following definitions apply:

4.1 Seam

The unit obtained by stitching fabrics together, including details of fabric directions, seam allowance, sewing needles, sewing threads used and the number of stitches per unit length.

4.2 Warp tests

Tests in which the warp yarns are separated at a seam sewn parallel to the warp yarns.

4.3 Weft tests

Tests in which the weft yarns are separated at a seam sewn parallel to the weft yarns.

5 PRINCIPLE

A strip of fabric is folded and stitched across its width. A force is applied to the strip at right angles to the seam and the extent to which the seam opens is measured. A subsequent measurement of the seam opening is made under minimal seam stress.

6 APPARATUS

6.1 Conditioning facility

Means of providing and maintaining a standard atmosphere as described in AS 2001.1.

6.2 Sewing machine

Electrically operated, single needle lockstitch sewing machine capable of stitching at a speed of between 700 and 1000 stitches per minute.

6.3 Sewing machine parts

Machine needles, throat-plate and feed-dog appropriate to the fabric to be tested (see Table 1 and Clause 7.5).

6.4 Sewing thread

Corespun polyester/cotton thread of appropriate linear density for the fabric to be tested (see Table 1).

6.5 Force application device

Either a constant rate of extension tensile testing machine or a deadweight testing machine may be used as follows:

(a) *Tensile testing machine (CRE)*

The CRE machine shall have the following features:

- (i) The machine shall comply with the requirements of Grade B machines as specified in AS 2193, except that the error in the measurement of length shall not exceed 1.0 mm.
- (ii) The machine shall provide means for indicating the force applied to the test specimens clearly and continuously on a dial, scale or chart.
- (iii) The capacity of the machine or the range selected shall be such that the force required to stress the test specimens (see Clause 7.4.4) shall not be less than 20 percent of the selected range of the machine.
- (iv) The machine shall be capable of extending the test specimen at a constant rate.
- (v) The force-measuring mechanism of the machine shall allow little or no movement of the fixed jaws in the direction of the applied force.

- (vi) The fixed and moving jaws of the machine shall be in the same plane, parallel to one another and at right angles to the direction of application of the force.
- (b) Deadweight testing machine. A means of gradually applying the selected force to the test specimen (see Clause 7.5.1) by the use of deadweights.

6.6 Clamping device

Means of clamping the test specimens above and below the standard seam. The width of the front jaw face of each specimen clamp shall be 25 mm. The other jaw face of each clamp shall be at least as large as its mate. The jaws shall be constructed in such a way that they do not damage the test specimen.

NOTE: Suitable packing materials or embedding techniques may be used whenever necessary to prevent test specimens slipping in the jaws.

6.7 Measuring device

A small transparent rule with 0.5 mm graduations, or other suitable device for measuring the seam opening.

7 SAMPLE AND TEST SPECIMENS

7.1 General

Care should be taken to ensure that the operator's hands are dry. Excessive handling of the sample and test specimens should be avoided.

7.2 Sample

The sample shall be selected in one of the following ways:

- (a) According to the directions given in the relevant material specification.
- (b) According to the procedure agreed upon by the interested parties, if such directions are not included in the material specification.

7.3 Conditioning

Condition the fabric sample in accordance with AS 2001.1. Prepare test specimens from the sample and conduct subsequent testing without removal from the standard atmosphere.

7.4 Test specimens

7.4.1 Number of specimens

Five warp test specimens and five weft test specimens shall be prepared and tested.

7.4.2 Dimensions

The width dimensions of each test specimen shall be 100 ± 1 mm. The length dimensions shall be such that, with a clamp separation of 75 mm, a portion of the specimen projects beyond each set of jaw faces.

7.4.3 Selection

Test specimens shall be selected as follows:

- (a) Specimens should not be taken from within 100 mm of the selvedge of the fabric sample.
- (b) Select rectangular warp test specimens (see Clause 4.2) from the fabric sample in such a way that their smaller dimensions are parallel to the warp direction and each test specimen contains different warp threads. Where the dimensions of the available fabric sample are such as to prevent this, the specimens shall be selected so that the warp threads have equal representation.