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## Footwear — Test methods for slide fasteners — Lateral strength

*Chaussures — Méthodes d'essai des fermetures à glissières —  
Résistance latérale*



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# Contents

	Page
Foreword .....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Apparatus and materials .....</b>	<b>3</b>
<b>5 Preparation of test specimens .....</b>	<b>3</b>
<b>6 Procedure .....</b>	<b>3</b>
<b>7 Test report .....</b>	<b>4</b>

## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 10764 was prepared by the European Committee Standardization (CEN) Technical Committee CEN/TC 309, *Footwear*, in collaboration with ISO Technical Committee TC 216, *Footwear*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

# Footwear — Test methods for slide fasteners — Lateral strength

## 1 Scope

This International Standard describes a method intended to assess the lateral strength of a closed slide fastener for footwear. The method is applicable to all types of slide fastener.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 18454, *Footwear — Standard atmospheres for conditioning and testing of footwear and components of footwear*

ISO 19952, *Footwear — Vocabulary*

## 3 Terms and definitions

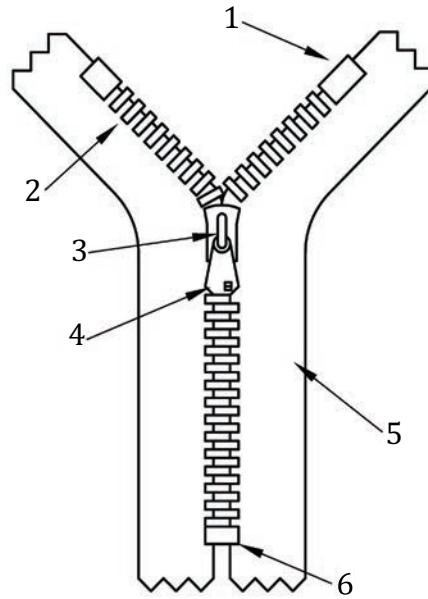
For the purposes of this document, the terms and definitions given in ISO 19952 and the following apply.

### 3.1

#### **slide fastener**

means of securing two flexible materials consisting of interlockable teeth each attached to one of the opposing edges of two tapes and movable slider that spans the interlocking teeth which when moved in one direction causes the *teeth* (3.5) of one *tape* (3.2) to interlock with the teeth of the other tape

Note 1 to entry: When the *slider* (3.3) is moved in the opposite direction, it causes the teeth to disengage (see [Figure 1](#)).



**Key**

- |   |          |   |             |
|---|----------|---|-------------|
| 1 | top stop | 4 | puller      |
| 2 | teeth    | 5 | tape        |
| 3 | slider   | 6 | bottom stop |

**Figure 1 — Slide fastener**

**3.2**

**tape**

fabric panels to support other *teeth* (3.5) of the *slide fastener* (3.1)

**3.3**

**slider**

means of drawing the two interlocking teeth together or apart as it traverses the length of the *teeth* (3.5)

**3.4**

**puller**

piece of plastic or metal attached to the *slider* (3.3) as a means of manual grip for the user to operate

**3.5**

**teeth**

individual component of the *slide fastener* (3.1) or continuous plastic spiral which interlocks with an opposing element

**3.6**

**end stop**

**top stop**

terminal components of the *teeth* (3.5) to prevent the *slider* (3.3) from disengaging from the teeth and *tape* (3.2)

**3.7**

**stringer**

textile tape with an attached row of *teeth* (3.5) designed to interact with a row attached to another *tape* (3.2)

## 4 Apparatus and materials

4.1 A **tensile testing machine** with the following.

4.1.1 A jaw separation rate of  $(100 \pm 10)$  millimetres per minute (mm/min).

4.1.2 A means of recording the maximum force during the test to an accuracy of 2 % as specified by Class 2 in ISO 7500-1, up to a value of 2,0 kN.

4.1.3 Two clamps which

- have square ends of width  $(25,5 \pm 0,5)$  mm,
- have clamping surfaces; either corrugated, or flat and coated with abrasive paper, and
- do not apply localised pressure at the clamping edge.

4.2 A **locating jig** to hold the two clamps (4.1.3) with their clamping edges parallel and their centres aligned may be helpful. A metal block of minimum dimensions 200 mm × 30 mm × 10 mm with a shallow trough of minimum length 200 mm and width less than 26 mm, but large enough to enable the clamps (4.1.3) to move freely is suitable.

4.3 For heavy duty slide fasteners, solvent based polychloroprene **adhesive** to aid gripping of the stringer by the clamp (4.1.3).

## 5 Preparation of test specimens

5.1 A minimum of three test positions are required, each with a length of at least 50 mm of free closed fastener on either side.

5.2 If three slide fasteners are available, then each fastener should be tested at the centre of its length.

5.3 If only one slide fastener is available, then it should be tested at three positions, one at least 50 mm from each end and one at the centre of its length. The length of free closed fastener on either side of the clamped area during the test should be at least 50 mm, therefore, the overall length of the teeth should be at least 275 mm. Each test may separate a length of the teeth so for teeth of total length close to 275 mm, it will not be possible to identify the adjacent test position exactly until after each individual test.

5.4 At each test point, mark a line of length  $(25 \pm 2)$  mm on each stringer which is

- parallel to, and  $(3,0 \pm 0,5)$  mm from, the edge of the teeth, and
- at least 50 mm from either end of the fastener.

5.5 For heavy duty slide fasteners, apply a coat of the adhesive (6.3) to both surfaces of each stringer over an area, approximately 15 mm on either side of each test point, and allow to dry for at least 2 h.

## 6 Procedure

6.1 Close the test fastener(s).

6.2 Condition the test specimen according to ISO 18454 for 24 h before the test and carry out the test in this environment.

6.3 At one of the test positions, tightly fit a clamp (4.1.3) to each stringer so that the clamping edge is centrally aligned with the corresponding line (5.4). If a locating jig (4.2) is available, then it should be used. For heavy duty slide fasteners, a very high clamping force is necessary, whereas, with light duty fasteners, care is required to avoid excessively damaging the stringer.

Dimensions in millimeters

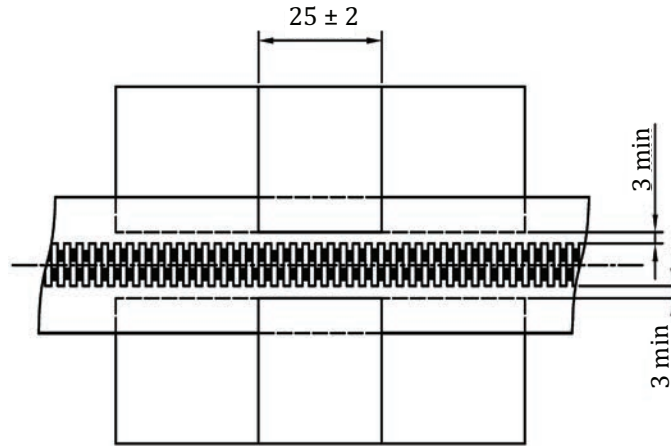


Figure 2 — Clamping arrangement for test specimen

6.4 Insert the clamps (6.3) into the tensile testing machine so that the test point is aligned with, and the teeth of the fastener is, at  $90^\circ$  to the axis of the machine.

6.5 Operate the tensile testing machine with a jaw separation rate of  $(100 \pm 10)$  millimetres per minute (mm/min) until the fastener fails.

6.6 Record the maximum force obtained in Newtons to the nearest Newton and the type of failure such as the following:

- separation of locked teeth from each other;
- teeth pulled off stringer;
- stringer failure;
- stringer tore at clamping edge;
- clamps slipped off stringer.

6.7 If the stringer tore at the clamping edge, or the clamp slipped off the stringer, then repeat the test at a fresh point using either a higher or lower clamping force as necessary. If it is not possible to select a suitable clamping force to cause the teeth to fail, then record the maximum force from the test conditions which gave the highest result.

6.8 Repeat the procedure in 6.3 to 6.7 at the other test positions.

6.9 For each type of failure that occurred, calculate the arithmetic mean of the maximum forces (6.6).

## 7 Test report

The test report shall include the following information:

- a) a reference to this International Standard, i.e. ISO 10764;



- b) a full description of the samples tested;
- c) the date of testing;
- d) the arithmetic mean maximum force(s), as in [6.9](#);
- e) a description of the type(s) of failure;
- f) any deviations from this test method.

