DRAFT INTERNATIONAL STANDARD ISO/DIS 10764

ISO/TC **216** Secretariat: **AENOR**

Voting begins on **2013-01-17** Voting terminates on **2013-06-17**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Footwear — Test methods for slide fasteners — Lateral strength

Chaussures — Méthodes d'essai pour les fermetures éclair — Résistance latérale

ICS 61.060

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the teeths of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10764 was prepared by Technical Committee ISO/TC 216, *Footwear*, Subcommittee SC , and by Technical Committee CEN/TC 309, *Footwear* in collaboration.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

Footwear — Test methods for slide fasteners — Lateral strength

1 Scope

This 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 referenced documents are indispensable for the application of this document. 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 — Tensile testing — Part 2: Verification of the force measuring system of the tensile testing machines*

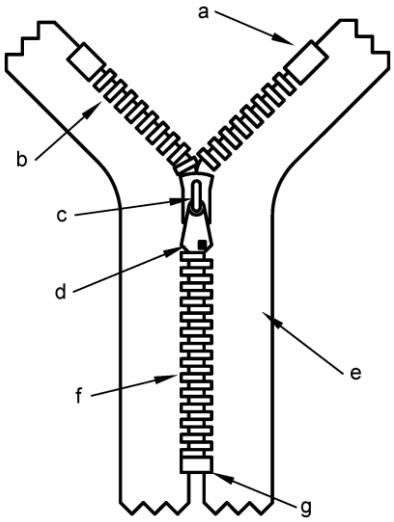
ISO 19952, *Footwear — Vocabulary*

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

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
a means of securing two flexible materials consisting of interlockable teeths each attached to one of the opposing edges of two tapes and movable slider that spans the interlocking teeths which when moved in one direction causes the teeths of one tape to interlock with the teeths of the other tape; when the slider is moved in the opposite direction it causes the teeths to disengage (see Figure 1)



Key

a) Top stop
b) Teeths (teeth)
c) Slider
d) Puller
e) Tape
f) Teeth
g) Bottom stop

Figure 1 — Slide Fastener

3.2
tape
fabric panels to support other teeths of the slide fastener

3.3
slider
means of drawing the two interlocking teeths together or apart as it traverses the length of the teeth

3.4
puller
piece of plastic or metal attached to the slider as a means of manual grip for the user to operate

3.5
teeth
individual component of the slide fastener which interlocks with an opposing teeth

3.6
end stop/top stop
terminal components of the teeths to prevent the slider from disengaging from the teeth and tape

3.7
Stringer
Textile tape with an attached row of teeth designed to interact with a row of similarly attached to another tape.

4 Apparatus and materials

4.1 A **tensile testing machine** with:

4.1.1 A jaw separation rate of (100 ± 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 ± 0,5) mm.

— Have clamping surfaces; either corrugated, or flat and coated with abrasive paper.

— 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 teeths 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 ± 2) mm on each stringer which is:

— Parallel to, and (3,0 ± 0,5) mm from, the edge of the teeth.

— 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 hours 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.

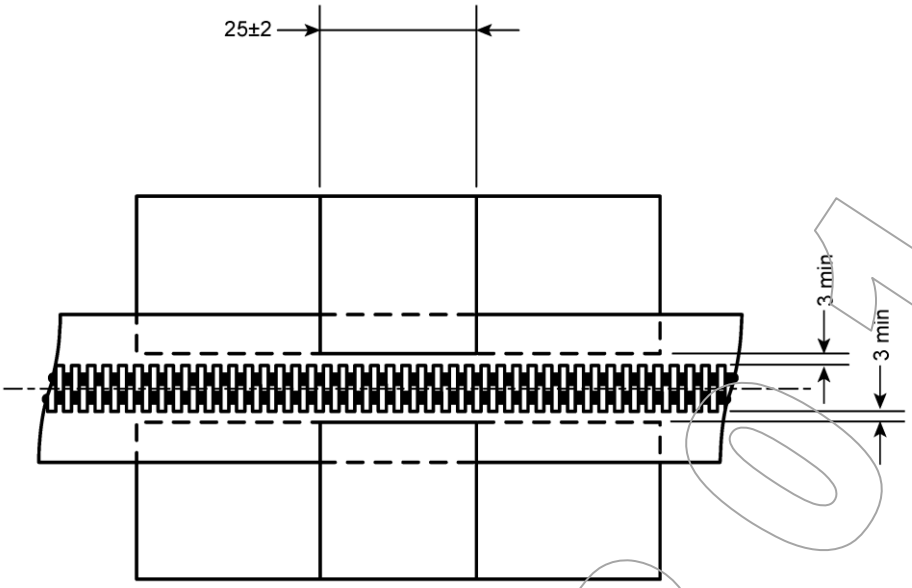


Figure 2 — Clamping arrangement for test specimen

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 90º to, the axis of the machine.

6.5 Operate the tensile testing machine with a jaw separation rate of (100 ± 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:

— 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 clauses 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:

7.1 Reference to this standard.

7.2 Full description of the samples tested.

7.3 Date of testing.

7.4 The arithmetic mean maximum force(s) as in 6.9

7.5 A description of the type(s) of failure.

7.6 Any deviations from this test method.