NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

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Footwear - Test methods for slide fasteners - Resistance to repeated opening and closing

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1 Scope

This Standard specifies the test method for resistance to repeated opening and closing of slide fasteners.

This Standard is applicable to various slide fasteners of which the teeth length is greater than 80 mm.

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

ISO 19952, Footwear - Vocabulary

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in ISO 19952 as well as the followings apply.

3.1 slide fastener

a connecting piece for fixing two pieces of flexible material; it is composed of inter-lockable teeth attached to the opposite edges of two tapes and a movable slider that spans the teeth; when the slider moves in one direction, the teeth (3.5) on the two tapes (3.2) can be

meshed with each other

NOTE: When the slider (3.3) moves in the opposite direction, the teeth can be separated (see Figure 1).

teeth

4 Principle

Clip the tape at the open end of the test slide fastener to make it parallel. When the slide fastener is opened and closed repeatedly, the length and width of the slide fastener are tight. When the slide fastener is damaged or reaches the set number of opening and closing, stop testing.

5.1 A testing machine with one or more workstations: each workstation has the

following devices.

5.1.1 Fixed clamp: the closed end of the test slide fastener can be tightly fixed, without damaging the teeth.

5.1.2 Movable clamp: can fix the open end of the test slide fastener and two

independent tapes, without damaging the teeth, as shown in Figure 2.

5.1.3 Clamping system: can fix the length of (25+/-2) mm of the edge of the test

slide fastener:

a) The center point of the fixed length is (82.5+/-2.0) mm from the movable clamp (5.1.2);

b) The lateral movement of each clamp is controlled by the stop clamp. The moving range is (6+/-1) mm.

5.1.4 The movable clamp (5.1.2), in a 90° direction relative to the fixed clamp

(5.1.1), applies the force specified in Table 1. Record it as F1, as shown in Figure 2.

5.1.5 Each clamp (5.1.3), in a direction that is parallel to the fixed clamp (5.1.1), applies the force specified in Table 1. Record it as F2.

5.1.7 With a stroke of (63.5+/-1.5) mm, at a speed of (60+/-6) times/min, apply

regular reciprocating motion to the device (5.1.6).

5.1.8 Count the number of operations of the device (5.1.6) until the sample is

damaged.

5.2 Distance measuring equipment: the measuring range is 300 mm, to the

device is too thick to hold, then move the line onto the teeth in the middle of the slide fastener away from the stop device. Move the first line (6.3) until it is [D]+/-1mm away from the second line.

6.5 For each slide fastener, marks shall be made on the edges of the tapes at

(82.5+/-2.0) mm from the line (6.3).

6.6 If the test slide fastener is less than the minimum distance between the

clamps (5.1.3), then for each test slide fastener:

a) Cut the connecting ends of two leather or textile strips. The minimum width is 25 mm. The exact length of the leather or textile strip shall be determined by the clamping system of the machine used.

b) Sew the edge of the back of the tape to the connecting end, Make the longitudinal centerline of the connecting end and the edge of the chain be 90° and be in accordance with the provisions of 6.5. Use double-row suture to make the suture parallel to the edge of the test slide fastener teeth. A suture is (7.0+/-0.5) mm from the teeth. The other suture is (9.0+/-0.5)

mm from the teeth. Both sutures shall exceed 25 mm at the end of the connection.

7.1 Fix the closed end of the slide fastener or any additional strip (6.2) in the

clamp (5.1.1). Align the line (6.4) with the edge of the clamp.

7.2 Fix the open end of the slide fastener in the clamp (5.1.2). Align the line (6.3)

with the edge of the clamp.

7.3 Apply the longitudinal force F1 specified in Table 1 to the clamp. Make the

slide fastener under force in the length direction.

7.4 If the connecting end is connected to the edge of each tape as in 6.6, then

clamp the connecting end into each clamp (5.1.3). Otherwise, clamp the edge of the tape into the clamp (5.1.3) and ensure that the point (6.5) is in the center of the clamp. The edge of the clamp is parallel to the teeth and at least 5 mm away from the edge of the teeth.

7.5 For two clamps (5.1.3), in a direction parallel to the edge of the clamp (5.1.1), apply the force F2 specified in Table 1. Make the slide fastener under force in the width direction. Ensure that the distance between the back of each clamp (5.1.3) and the stop clamp

[5.1.3b)] is (6+/-1) mm.