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Shanks for footwear

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Shanks for footwear

1 Scope

This Standard specifies product classification, technical requirements, test methods, inspection rules and marks, packaging, transportation, and storage for shanks for shoes (including boots).

This Standard is applicable to shanks for shoes of size 200 and above (including boots).

This Standard is applicable to wooden shanks or similar products.

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.

GB/T 191, *Packaging and storage marks*

GB/T 230.1, *Metallic materials - Rockwell hardness test - Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

GB/T 2703, *Footwear - Vocabulary*

GB/T 3903.4-2017, *Footwear - Test methods for whole shoe - Hardness*

GB/T 3903.34, *Footwear - Test methods for shanks - Longitudinal stiffness*

GB/T 3903.35, *Footwear - Test methods for shanks - Fatigue resistance*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 2703 as well as the followings apply.

3.1 type L shank

A shank shaped like the letter L.

NOTE: Mostly used for women's high-heeled shoes, the back of which bends down to form

a short side embedded in the heel.

3.2 type Y shank

A shank shaped like the letter Y.

NOTE: In addition to regular functions, it (also) has some auxiliary functions.

3.3 type I shank

A shank shaped like the letter I.

NOTE: Mostly used in mid-high heels for men and women.

4 Product classification

The shanks can be classified according to the following conditions:

- According to the object of use, it is classified into: men's shoe shank, women's shoe shank, and children's shoe shank;
- According to the shape of the shank, it is classified into: type I shank, type L shank, and type Y shank;
- According to the shank material, it is classified into: metal shank and non-metal shank.

5 Technical requirements

5.1 Marks

5.1.1 The shank shall be marked with the effective heel height or the applicable effective heel height range, expressed in Arabic numerals, and the unit is millimeters.

5.1.2 The shank taken out of the shoe does not check the mark.

5.2 Sensory quality

The surface of the shank has no burrs, corrosion, cracks, bending deformation, smooth and flat. The positions of ribs, nail holes and forks are correct.

5.3 Size

5.3.1 Size tolerance

The length tolerance is the difference between the maximum value and the

Use vernier calipers with an accuracy of not less than 0.05mm. Measure a point on the head and tail of the shank without burrs respectively. The result is to one decimal place. The width values of the head and tail of each shank are expressed separately.

7.4 Shank thickness

Use vernier calipers with an accuracy of not less than 0.05mm. Measure a point on the head and tail of the shank without burrs respectively. The arithmetic mean of the thickness of the head and tail is the thickness of the shank. The result is to one decimal place. The thickness value of each shank is indicated separately.

7.5 Longitudinal stiffness

Test according to GB/T 3903.34. The test results of each shank are shown separately.

7.6 Fatigue resistance

Test according to GB/T 3903.35. The test results of each shank are shown separately.

7.7 Hardness

Test according to GB/T 230.1 for metal shanks. Test according to GB/T 3903.4-2017 for non-metal shanks. Test on the flat part of the sample. The hardness value of each shank is indicated separately.

7.8 Bending performance

7.8.1 Test equipment

The shank bending performance tester (see Figure 4), has point of support and movable roller. Make the movable roller rotate 180° around the central column with a diameter of $\phi 10$ mm.

8.2 Shank inspection in footwear products

When footwear products are spot-checked and submitted for inspection, if the number of specimens cannot meet the requirements of this Standard, the two shanks taken from the same pair of shoes shall be used as the specimen to inspect according to the requirements of the product standards implemented for footwear products. Two pieces are inspected for sensory quality, size and hardness. After that, one shank is tested for fatigue resistance, and one is tested for other items.

8.3 Result judgment

8.3.1 Batch judgement

If in each individual test, if one or more shanks fail to meet the requirements of this Standard, the item will be judged as nonconforming. If one or more of the inspected items are nonconforming, the batch of products shall be deemed nonconforming. Among them, when mark, length, longitudinal rigidity, hardness, and bending performance have 1 or more unqualified items, no re-inspection is allowed, and the batch of products are judged to be nonconforming. When sensory quality, size tolerance, and fatigue resistance have 1 or more nonconforming items, it can be sampled again from the original batch of products. Double the number of samples. Re-inspect the nonconforming items. Judgment is based on the results of the re-inspection.

8.3.2 Shoe shank judgement

Remove the shank from the shoe. Determine the individual test results of the shank based on the effective heel height of the tested shoe. The performance of the shank shall conform to the product standard corresponding to the tested shoe.

9 Marks, packaging, transportation, storage

9.1 Marks

9.1.1 Mark content on domestic product packaging

Product name, specification (length, width, thickness), applicable effective heel height (or applicable effective heel height range), quantity, manufacturer name, factory address, telephone number, postal code, trademark, production date, moisture-proof mark, certificate and implementation standard number.

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