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PEOPLE'S REPUBLIC OF CHINA**

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Ice skating boots

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5 Requirements

5.1 Shoe size It should comply with the provisions of GB/T 43293.

5.2 Sensory quality

5.2.1 Shoes of the same pair should be upright, symmetrical in shape, flat, and have complete markings.

5.2.2 There should be no broken needles remaining inside the shoe, no exposed nail tips, and no protruding nail ends.

5.2.3 The blade of the ice skate should be free of rust, chipped edges, and rolled edges. The radius of the rounded corner at the rear end of the figure skate should be no less than 2mm.

5.2.4 The surface of a metal tool holder should be flat and smooth, free from nicks, cracks, and rust. Non-metallic tool holders should be free from cracks, dents, and seams.

5.2.5 The connection between the ice skate and the skate should be secure, and the fasteners should not be loose. There should be no resistance to rotation or obstruction of the moving parts of the detached ice skate. Reset phenomenon.

5.3 Geometric Dimensions

5.3.1 Dimensional discrepancies The dimensional differences between the same part of the same pair of ice skates should conform to the provisions of Table 1.

5.3.2 Tool holder thickness The thickness of the metal knife holder should conform to the specifications in Table 2.

5.3.3 Blade thickness The thickness of the blade within 10 mm of the sliding surface should conform to the specifications in Table 3.

5.3.4 Straightness of the blade side The straightness of the blade side should conform to the specifications in Table 4.

5.3.5 Surface Roughness The surface roughness of ice skate blades should conform to the specifications in Table 5.

5.3.6 Figure skate serration tilt angle For recreational and standard-level figure skates, the forward tilt angle should not be less than 10° when the lowest tooth of the blade contacts the ice (see Figure 1). For competitive-level skates, it should be less... At 10°.

5.3.7 Instep height of figure skates and ice hockey skates It should be 25mm higher than the medial malleolus, and the inner side of the back brace should be close to the ankle.

5.3.8 Ice Skate Mounting Position Distance between the front of the bladestock and the front of the sole of figure skates and hockey skates.

---For standard grade, the thickness should be $\leq 11\text{mm}$;

---Competition grade should be $\leq 5\text{mm}$. For figure skates and hockey skates, the blade protruding from the front of the skate should not exceed 15% of the length of the sole.

5.4 Mechanical and Physical Properties The mechanical and physical properties shall conform to the specifications in Table 6.

5.5 Limits for Chemical Substances The limits for chemical substances shall comply with the provisions of GB 25038.

6 Test Methods

6.1 Shoe size Perform in accordance with the provisions of GB/T 43293.

6.2 Sensory quality Sensory quality inspection should be conducted in a well-lit environment, avoiding direct sunlight, and should be performed through visual inspection and tactile examination. The precision of the fillet radius should be considered. Measurement with an R2 fillet gauge not exceeding 0.1mm.

6.3.1 Inspection measuring tools and instruments

6.3.1.1 Vernier caliper, graduation value 0.02mm.

6.3.1.2 Height vernier caliper, graduation value 0.02mm.

6.3.1.3 Standard plane, feeler gauge.

6.3.1.4 Roughness sample block or surface roughness measuring instrument.

6.3.1.5 Inclinator, graduation value 0.5°.

6.3.1.6 Horizontal platform (flat metal plate, marble slab, or glass plate).

6.3.1.7 Shoe last series, conforming to GB/T 3293.

6.3.1.8 Steel ruler, graduation value 1mm.

6.3.1.9 Depth vernier caliper, graduation value 0.02mm.

6.3.2 Measurement Method The methods for measuring geometric dimensions are shown in Table 7.

6.4.1 Blade Hardness Measure at a distance of 5 mm ±

0.2 mm from the edge of the blade, according to the method specified in GB/T 230.1.

6.4.2 Tensile strength of the fastening between the skate and the blade

6.4.2.1 Test equipment. Universal testing machine, with a range of not less than 10000N and an accuracy of ±1%.

6.4.2.2 Test Procedure. Before the test, place the sample in an environment with a temperature of 23°C±5°C and a relative humidity of (50±5)% for at least 6 hours. Then, clamp the specimen as shown in Figure

4. Apply tensile force at a speed of 100 mm/min ± 10 mm/min until the tensile force F is 2000 N ± 20N and maintain this force for 1 minute.

6.4.3 Tensile strength of ice skate welding

6.4.3.1 Test equipment. Same as 6.4.2.1.

6.4.3.2 Test Procedure. Adjust the fixture position as shown in Figure 5 to ensure symmetrical forces on both sides and that the resultant forces from the upper and lower

sides are on the same straight line. Apply the force at a rate of 100 mm/min $\pm$ Apply tensile force at a speed of 10 mm/min until the tensile force F is 3500 N $\pm$ 30 N (5000 N $\pm$ 50 N for competitive figure skates), and maintain. Hold this force for 1 minute.

6.4.4 Ice skate compressive deformation

6.4.4.1 Test equipment. Universal testing machine (same as 6.4.2.1); dial indicator with a range of not less than 5mm; steel shoe last, with additional deformation testing. The deformation should not exceed

0.02 mm (if the additional deformation exceeds

0.02 mm, the test results should be corrected).

6.4.4.2 The test shall be conducted according to the following steps.

- a) Install the sample as shown in Figure 6, with the front and rear support rollers located directly below the front and rear supports, respectively, and the force F located on the symmetrical center line of the two support rollers;
- b) The loading speed should not exceed 50 mm/min, preload to 400 N $\pm$ 4 N, and zero the dial indicator;
- c) Keep the loading speed constant and continue loading to 2000N $\pm$ 20N, maintaining this force for 1 minute;
- d) The unloading speed shall not exceed 50 mm/min. Unload to the preload of 400 N $\pm$ 4 N, read the dial gauge reading, and record it.

6.4.5 Ice skate bending deformation

6.4.5.1 Test equipment. universal testing machine as described in 6.4.2.1; dial indicator with a range of not less than 5 mm.

6.4.6 Low-temperature impact test

6.4.6.1 Figure Skates The low-temperature impact test for figure skates consists of two steps. step

- a) Before the test, the sample should be placed at $-20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for at least 6 hours. The test should be conducted 90 seconds after the sample is removed from the pretreatment conditions. Complete the process inside. Following Figure 8, insert the shoe last (wooden last) into the shoe and tighten the laces. Then, secure it to the swingarm and raise the skate to... The skate blade fell naturally for 700mm $\pm$ 10mm, causing the side of the blade to land on a horizontally placed rubber plate (hardness 75HA $\pm$ 2HA). Impact each side three times (Swing bar. round steel, diameter 25mm $\pm$ 0.1mm, length 1360mm $\pm$ 5mm, inside the shoe last). (100mm $\pm$ 2mm).