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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Replacing GB/T 8394-2007

Pommel horses

鞍马

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5.1.1 Appearance

5.1.1.1 The color of the horse's body surface should be uniform and consistent, and should retain the natural color of the leather or the original color of the synthetic material supplied.

5.1.1.2 The material covering the horse's body should be flat and wrinkle-free.

5.1.1.3 The color of the saddle ring should be the natural wood color or a light neutral tone.

5.1.2 Structure

5.1.2.1 The top outline of the saddle horse's body should be curved.

5.1.2.2 The support area of the saddle horse's body should be elastic, with uniform softness and hardness throughout; it should be hygroscopic, allowing magnesium powder to adhere, but should not cause damage. User's skin.

5.1.2.3 All edges of easily accessible parts of the saddle should have a smooth transition or be protected.

5.1.2.4 The pommel horse should be stable during use and should be equipped with an

anchoring device that connects to the ground.

5.1.2.5 The deviation between the width of the upper part of the horse's body and the width of the lower part should both be either positive or negative.

5.2 Basic Dimensions The specifications and dimensions of the pommel horse and their limit deviations shall conform to the provisions of Figure 1 and Table 1.

5.3.2 Coefficient of friction of horse body The coefficient of friction of a racing pommel horse should conform to the specifications in Table 3.

5.3.3 Friction coefficient of the saddle ring The friction coefficient of the pommel ring for racing pommel horses should conform to the specifications in Table 4.

5.3.4 Stability of the saddle ring The stability of the saddle ring should meet the requirements of Table 5.

5.3.5 Corrosion resistance of electroplated coating After the test in 6.3.6, the electroplated parts should not show signs of corrosion.

6 Test Methods

6.1 Appearance and Structure Sensory inspection was conducted under normal lighting conditions.

6.2 Basic Dimensions The measurements were taken using a vernier caliper with a graduation of

0.02 mm and a steel tape measure with a graduation of

0.5 mm and a measuring range of 3 m.

6.3.1 Test Conditions

6.3.1.1 The samples should be pre-conditioned for at least 24 hours under environmental conditions of 30%~70% relative humidity and $20^{\circ}\text{C}\pm 5^{\circ}\text{C}$, and under the same conditions. All inspections are carried out on the items.

6.3.1.2 The test apparatus for each item shall comply with the provisions of A.1 in Appendix A, and the test principle is as described in A.2.

6.3.2 Horse body cushioning performance

6.3.2.1 Impact Hammer. The bottom surface of the impact block is flat, and the mass is $10\text{kg}\pm 0.1\text{kg}$.

6.3.2.2 Impact points. Five impact points are located on the body of the saddle horse. The distribution of impact points is shown in Figure 2.

6.3.2.3 Before the formal test, use an auxiliary sample to calibrate the drop height so that the instantaneous velocity of the impact hammer when it hits the upper surface of the pommel horse reaches a certain level.

2.80 m/s ($1 \pm 3\%$). Subsequently, the test sample was subjected to an impact test using this calibrated height.

6.3.2.4 Place the pommel horse on a flat, hard, level surface (cement or metal slab), and adjust the height of the horse's body to 1150mm from the ground. And align the center of the impact surface of the impact hammer with a set impact point.

6.3.2.5 After each impact completes one test point, the impact hammer rises and leaves the upper surface of the pommel horse. Test and record the indentation, rebound, and... The maximum force is applied, with each impact point subjected to 10 impacts, and the interval between two impacts should be no less than 120 seconds.

6.3.2.6 The average of the results of 8 tests after each impact point is taken as the value of the depression, rebound, and maximum force at that point. Each of the 5 impact points refers to... The overall average values of the target are the amount of sinking, rebound, and maximum force of the horse's body.

6.3.3 Coefficient of friction of horse body

6.3.3.1 The distribution of the three inspection points on the upper surface of the saddle horse and the two opposite traction force directions at each inspection point are shown in Figure 3.

6.3.3.2 Place the pommel horse on a horizontal surface; the pommel horse should not wobble or tilt. Before each inspection, place the friction blocks at each inspection point. Sprinkle 1g of magnesium carbonate powder evenly in the center within a 15cm diameter.

6.3.3.3 At a position no more than 1 cm above the bottom surface of the friction block, apply a constant loading rate of $5 \text{ N/s} \pm$

0.5 N/s along the given direction. Pull the friction block horizontally until the pulling force reaches its maximum value, obtain and record the pulling force, and the coefficient of friction is the sum of the maximum traction force (F_1) and the weight of the friction block. The ratio of (G_1). Calculate according to formula (1), and keep the result to 3 decimal places.

6.3.3.4 Repeat the above test 5 times in each direction at each test point.

6.3.3.5 Calculate the average value of each detection point, the total average value of the three detection points, and the difference between the maximum and minimum values of the average values of each point.

6.3.4 Friction coefficient of the saddle ring

6.3.4.1 Secure the saddle ring separately, so that the test strip is hung in the middle of the saddle ring; before each time the test strip is hung, evenly mix 1g of magnesium carbonate powder. Apply evenly to the test surface of the saddle ring.

6.3.4.2 Perform the test according to A.1.3. After loading for 10 seconds, record the traction force. The coefficient of friction is the maximum traction force (F_2) and the weight of the weight. The ratio of (G_2). Calculate according to formula (2), and keep the result to 3 decimal places.

6.3.4.3 Each pommel ring is tested 10 times, and then the friction force of the pommel ring is tested 10 times in the opposite direction of friction.

6.3.4.4 Record the friction force of the saddle ring, calculate the friction coefficient of the saddle ring, and the result is the average value and the difference of the friction coefficients of the two saddle rings.

6.3.5.1 Set 3 sets of loading points on the pommel ring as shown in Figure

4. When not loading, first measure the distance X_1 between the two pommel rings.

6.3.5.2 Apply a slow, bidirectional external thrust along the horizontal axis. Measure and record the values within 10 seconds after the external thrust reaches $600\text{N} \pm 20\text{N}$. The displacement of the saddle rings between the saddle rings is X_2 .

6.3.5.3 After unloading for 60 seconds, measure the displacement X_3 between the saddle rings. The residual displacement of the saddle rings is the difference between X_3 and X_1 .

6.3.5.4 Repeat the above experiment 3 times at each loading point, and the result is the arithmetic mean of the 3 experiments.

6.3.6 Corrosion resistance of electroplated coating Take the part to be tested or a specimen of the same material as the part to be tested, and conduct a neutral salt spray test according to GB/T 10125. The test cycle is 144 hours. Observe the changes in the sample.

7 Inspection Rules

7.1 Inspection Classification Inspection is divided into factory inspection and type inspection.

7.2 Factory Inspection

7.2.1 Inspection Quantity Each saddle horse product should be inspected before leaving the factory.

7.2.2 Inspection Items The inspection shall be carried out in accordance with the factory