

ICS 97.220.30

CCS Y 55



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

GB/T 8390-2026

Replacing GB/T 8390-2007

Horizontal bars

单杠

Issued on: April 30, 2026

Implemented on: May 1, 2027

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

5 Requirements
5.1 Appearance and Structure
5.1.1 Appearance
5.1.2 Structure
5.3 Performance
6 Test Methods
6.2 Basic Dimensions Use a vernier caliper with a graduation of
6.3 Performance
6.3.1 Test Conditions
6.3.5 Ultimate Load of the Cable System
7 Inspection Rules
7.2 Factory Inspection
7.3 Type Testing
8 Marking, Packaging, Transport and Storage

5.1.1 Appearance

5.1.1.1 The crossbar should retain the natural color of the steel, and the surface of the crossbar should be smooth and free of cracks and twists.

5.1.1.2 All easily accessible parts of the horizontal bar should not have sharp edges or corners.

5.1.1.3 The protective coating on metal parts should be free from defects such as missed coating, blistering, and pinholes.

5.1.1.4 The weld should be smooth and free from welding defects such as incomplete welds, incomplete welds, and obvious weld beads.

5.1.2 Structure

5.1.2.1 The crossbar and the uprights should be hinged. After the two uprights are connected to the crossbar, they should be fixed by a rope system.

5.1.2.2 When using the horizontal bar, the connecting parts should move freely without generating noise, and the uprights should not move or sway.

5.2 Basic Dimensions The basic dimensions and their limit deviations shall conform to the

specifications in Figure 1 and Table 1.

5.3 Performance

5.3.1 Static traction deformation The static traction deformation should conform to the provisions of Table 2.

5.3.2 Oscillation Load and Deformation The swing load and deformation of the competition-type single bar pendulum should meet the requirements of Table 3.

5.3.3 Vibration frequency and half-amplitude period The vibration frequency and half-amplitude period of the competition-type horizontal bar should conform to the provisions of Table 4.

5.3.4 Ultimate Load of the Cable System After passing test 6.3.5, the rope system should not come loose, detach from welds, or break; the rope tensioner should operate flexibly; and there should be no visible defects after the external force is removed. Residual deformation.

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 Use 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 6 m to measure the straightness of the horizontal bar. The degree is checked on the inspection platform using a feeler gauge with a graduation value of 0.02mm.

6.3.1 Test Conditions

6.3.1.1 Samples should be pre-conditioned for at least 24 hours under environmental conditions of 30%~70% relative humidity and $20^{\circ}\text{C}\pm 5^{\circ}\text{C}$ before testing. All tests are performed under the specified conditions.

6.3.1.2 Install and fix the horizontal bar, adjust the height of the upper edge of the horizontal bar from the ground to 2800mm, and set the tension of each rope to $1500\text{N}\pm 50\text{N}$.

6.3.1.3 The testing equipment and testing principle shall comply with Appendix A.

6.3.2 Static traction deformation The pendulum (total weight 60kg, including an additional

20kg fall weight) is suspended centrally from the horizontal bar, and a load of $2200\text{N} \pm$ is applied along the direction of the pendulum's gravity. 20N, record the vertical deformation at the center of the horizontal bar.

6.3.3 Oscillating Load and Deformation As shown in Figure 2, connect the pendulum (total weight 80kg, including a 20kg additional drop weight and a 20kg additional weight) to the horizontal bar. With the pendulum in a suspended position, rotate it from the suspended position to a horizontal position. At this point, the side of the lever face where the pendulum is located is in the negative horizontal direction. Attach the pendulum tube... With added weight, the pendulum is lifted to a position with a drop stroke of $900\text{mm} \pm 10\text{mm}$, then quickly released, and the displacement-time of the midpoint of the horizontal bar is recorded by a data recorder. The changes in load and the reaction force of the pendulum over time are recorded. The maximum load, vertical deformation, and horizontal deformation in both positive and negative directions are also recorded. The arithmetic mean of five repeated tests is taken.

6.3.4 Vibration frequency and half-amplitude period The pendulum (total weight 60kg, including an additional 20kg drop weight) is centered and suspended on the crossbar or crossbar connector; Pull the pendulum straight down to achieve an initial tension of $1000\text{N} \pm 30\text{N}$, then quickly release the pendulum and record the displacement of the midpoint of the horizontal bar. The amplitude changes until it decays to half of its maximum value (see Figure 3); the vibration frequency and the half-amplitude time interval are calculated, and the data are repeated 5 times. The average value of the test.

6.3.5 Ultimate Load of the Cable System

6.3.5.1 Tensile testing machine The measuring range is 20kN, and the accuracy class is 0.5.

6.3.5.2 Testing Take a steel wire rope with a length of $500\text{mm} \pm 30\text{mm}$ and rigging at both ends, a chain with a length of $600\text{mm} \pm 50\text{mm}$, and a length of... Three sets of specimens, including a tensioner and connector with a diameter of $380\text{mm} \pm 30\text{mm}$, were fixed on a tensile testing machine with an accuracy of

0.5 grade and tested at a speed of 10mm/min. Apply a static load of 8000 N at a certain speed and hold for 5 minutes. All three groups of samples should meet the requirements of 5.3.3.

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 horizontal bar product should be inspected before leaving the factory.

7.2.2 Inspection Items The inspection shall be carried out in accordance with the factory inspection items, requirements and test methods specified in Table 5.

7.2.3 Judgment Rules All items in the factory inspection of the horizontal bar meet the requirements; the horizontal bar is deemed (qualified) upon leaving the factory. If any item fails to meet the requirements, the horizontal bar is deemed (qualified) upon leaving the factory. The factory inspection was unsatisfactory.

7.3 Type Testing

7.3.1 Type testing shall be conducted under any of the following circumstances.

- a) New product trial production and type approval or new product transfer to another factory for trial production and type approval;
- b) Changes in design, manufacturing process, or materials may affect product quality;
- c) During normal production, this should be carried out every 2 years;
- d) Production resumes after a shutdown of more than six months;
- e) The factory inspection results differed significantly from the previous type inspection results.

7.3.2 For type testing, one single-bar sample shall be randomly selected from the batch that has passed factory inspection, and the testing shall be conducted according to the type testing sequence specified in Table 5. The project, requirements, and test methods are inspected.

7.3.3 If all type test items meet the requirements, the type test is deemed qualified; if any item fails to meet the requirements, double the sampling is permitted. All items will then be re-inspected. If the re-inspection meets the requirements, the type test is still deemed (qualified); if there are still items that do not meet the requirements, the type test is deemed (qualified). The type test failed. Samples for type testing should not be delivered to the ordering party as qualified products.

8 Marking, Packaging, Transport and Storage

8.1 Marking The following information should be prominently displayed on the horizontal bar.