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

MT/T 716-2019

**Technical delivery requirements of steel wire ropes for coal
mine hoisting**

煤矿重要用途钢丝绳验收技术条件

(English Translation)

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1 Scope

This document specifies the requirements for acceptance, pre-hanging inspection, inspection and testing, inspection rules, packaging, marking, quality certificates and safety signs, etc. of steel wire ropes for coal mine hoisting.

Steel wire ropes for coal mine hoisting include. shaft hoisting wire ropes, inclined shaft hoisting wire ropes, hanging hoist wire ropes, inclined wire ropes for transporting personnel, traction belt conveyor wire ropes and tilted stepless rope winch wire ropes and wire ropes for overhead passenger installations.

This Standard applies to various round strand wire ropes, special-shaped strand wire ropes and compacted strand wire ropes for coal mine hoisting.

This Standard does not apply to balancing flat wire ropes and sealed wire ropes.

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 228.1, Metallic materials -- Tensile testing -- Part 1. Method of test at room temperature

GB/T 238, Metallic materials -- Wire -- Reverse bend test

GB/T 239.1, Metallic materials -- Wire -- Part 1. Simple torsion test

GB/T 1839, Test method for gravimetric determination of the mass per unit area of

galvanized coatings on steel products

GB/T 2104, Steel wire ropes -- Packing, marking and certificate -- General requirements

GB/T 8170, Rules of rounding off for numerical values and expression and judgement of limiting values

GB/T 8358, Steel wire ropes -- Determination of breaking force

GB/T 8706, Steel wire ropes -- Vocabulary, designation and classification

3.1 Steel wire for rope making

The steel wire used for rope making shall comply with the requirements for important purpose steel wire in GB/T 8919. Compacted strand wire rope wires shall comply with the requirements for important purpose steel wires in YB/T 5343.

3.3 Grease

Unless otherwise required by the purchaser, the surface of the wire rope shall be evenly and continuously coated with anti-rust lubricating grease. When the purchaser requires the steel wire rope to have friction-increasing performance, the steel wire rope shall be coated with friction-increasing grease and there shall be no leakage.

4.1 Basic requirements

4.1.1

Wire ropes shall have mining product safety signs.

4.1.2

Wire ropes shall have quality certificates. Among them, the requirements for steel wire ropes shall comply with the implementation standards and requirements for safety signs of mining products.

4.2.1.1 Nominal diameter

The nominal diameter shall comply with the requirements of GB/T 8918 and YB/T

5359, otherwise it shall be agreed upon by both parties. The nominal diameter shall be indicated on the wire rope quality certificate.

4.2.1.2 Diameter deviation and out-of-roundness

Diameter deviation and out-of-roundness are shown in Table 1.

4.2.2.1 Nominal length

It shall be agreed between the supplier and the purchaser and specified in the order contract. All specimens shall be included in the order length.

4.2.3.1 Reference weight

In kg/100 m as the unit, it shall comply with the provisions of GB/T 8918 and YB/T 5359. Otherwise, it shall be agreed upon by the supplier and the purchaser and specified in the contract.

4.2.4 Surface quality and twist quality

They shall comply with the provisions of Annex A.

4.2.5 Not loose

The wire rope shall not be loose (except for multi-layer strands, four-strand fan strands and braided wire ropes).

4.2.6 Elongation

Permanent elongation in use shall be mutually agreed upon.

4.3.3.1 Nominal tensile strength

The nominal tensile strength of the steel wire shall comply with the provisions of Table 2 and shall be stated on the steel wire rope quality certificate. The values in Table 2 are the lower limits of tensile strength. The upper limit is equal to the lower limit plus the strength tolerance specified in Table 4.

4.3.3.2 Strength tolerance

The strength tolerance shall comply with the requirements in Table 4.

4.3.4 Repeated bending

The number of repeated bending times for steel wires with a diameter greater than or equal to 0.50 mm shall comply with the requirements in Table 5.

5.1.1 Measurement of diameter

Wire rope diameter shall be measured with a vernier caliper with wide jaws. The minimum width of its jaws shall be sufficient to span two adjacent strands. The minimum graduation value of the measuring instrument shall not be less than ± 0.02 mm.

5.1.3 Measurement of weight

Measure the total weight of the wire rope (including spool, hook and packaging material) in kg. Subtract the weight of the reel, chain hook and packaging material from the total weight and divide it by the actual measured length of the wire rope (in hundreds of meters). The resulting quotient is the actual unit weight of the wire rope, expressed in kg/100 m.

5.2.2 Tensile test

Carry out according to the method specified in GB/T 228.1.

5.2.3 Repeated bending test

Carry out according to the method specified in GB/T 238.

5.2.4 Torsion test

Carry out according to the method specified in GB/T 239.1.

5.2.5 Zinc layer weight test

Carry out according to the method specified in GB/T 1839.

6.1 General

6.1.1

Each wire rope shall undergo acceptance inspection and inspection before hanging.

6.1.2

Acceptance inspection and pre-hanging inspection shall be proposed and sampled by the user.

6.1.3

Acceptance inspection and pre-hanging inspection shall be carried out by qualified inspection organizations authorized by the department responsible for supervision and management of production safety.

6.2.3 Zinc layer weight test

The test quantity is 10% of the total number of steel wires of the same nominal diameter in the wire rope (selected from the specified number of strands). Round to an integer according to GB/T 8170.