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

GB 8918-2006

**[GB/T 8918-2006] Steel wire ropes for important purpose
(English Translation)**

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1 Scope

This Standard specifies the classification, ordering information, materials, technical requirements, inspection and test, acceptance methods, packaging, marks, and quality certificates for steel wire ropes for important purposes.

This Standard applies to round and irregularly shaped wire ropes used in mine hoisting, blast furnace winches, large-scale casting, oil drilling, large-scale lifting, heavy lifting, cableways, ground cable cars, ships and offshore facilities.

2 Normative references

The following documents contain the provisions which, through reference in this Standard, become the provisions of this Standard. For dated references, their subsequent amendments (excluding corrigendum) or revisions do not apply to this

Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable.

For undated reference documents, the latest versions apply to this Standard.

GB/T 228, Metallic materials -- Tensile testing at ambient temperature (GB/T 228-

2002, ISO 6892.1998, eqv)

GB/T 238, Metallic materials -- Wire -- Reverse bend test (GB/T 238-2002, ISO 7801.1984, idt)

GB/T 239, Metallic materials - Wire -- Torsion test (GB/T 239-1999, ISO 7800.1984, ISO 9649.1990, eqv)

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

GB/T 2973, Zinc coated steel wire -- Test method for gravimetric determination of zinc coating

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

GB/T 8358, Method of breaking tensile test for steel wire rope (GB/T 8358-1987, ISO 3108.1974, eqv)

GB/T 8706, Steel wire ropes -- Terminology (GB/T 8706-1988, ISO 2532.1974, eqv)

GB/T 8707, Steel wire ropes -- Standard designations (GB/T 8707-1988, ISO 3578.1980, idt)

GB/T 8919, Wire for steel wire ropes use

GB/T 15030, Sisal wire rope core

YB/T 081, Rule for rounding off of numerical values and judgement of testing values for technical standards of metallurgy

SH/T 0387, Surface Grease for Steel Wire Ropes

SH/T 0388, Hemp Core Grease for Steel Wire Ropes

3 Classification

3.1

Wire ropes are classified according to the cross-section of their strands, the number of strands, and the number of outer layer wires, as shown in Table 1. For round strand and irregular strand wire ropes, if the purchaser does not explicitly require a specific structure, the supplier shall determine the structure within the same group.

Groups 10~12 and 14 of irregularly shaped wire ropes are all-directionally twisted. The inner and outer strands of Group 14 wire rope shall have opposite strand directions, and the inner strands shall be all-directionally twisted.

3.2

Wire ropes are classified into four types based on their twist method. right-hand cross-twist, left-hand cross-twist, right-hand same-direction twist, and left-hand same-direction twist, as shown in Figures 1~4. In Figures 1 and 2, the rope and strand twist directions are opposite. In Figures 3 and 4, the rope and strand twist directions are the same.

3.3

The marking codes for wire ropes shall conform to the provisions of GB/T 8707.

The strand structure shall be marked from the center outwards.

4 Ordering content

Contracts for orders placed in accordance with this standard shall include the following main contents.

- a) Standard number;
- b) Product name;
- c) Structure (marking code);
- d) Nominal diameter;
- e) Twist method;
- f) Surface condition;
- g) Nominal tensile strength;
- h) Quantity (length);
- i) Application;
- j) Other requirements.

5.1 Steel wire for rope making

5.1.1

The steel wire used for rope making shall comply with the requirements for steel wire for important purposes in GB/T 8919.

5.1.2

The steel wire used for rope making includes core wire and filler wire (excluding low carbon steel wire, filler wire and reinforcing wire that make up the triangular core).

5.2 Rope core

The core of a wire rope is divided into fiber core and steel core.

5.2.1 Fiber core

The fiber core shall conform to the requirements of GB/T 15030 or be made of jute, synthetic fibers, or other fibers that meet the requirements. Unless otherwise required by the purchaser, the fiber core shall be impregnated with a lubricating grease that has anti-corrosion and anti-rust properties.

5.2.2 Steel core

The steel core is divided into independent wire rope core (IWR) and wire strand core (IWS).

5.3 Grease

The grease used for wire ropes shall comply with the requirements of SH/T 0387 or other relevant requirements.

The core resin shall comply with the requirements of SH/T 0388 or other relevant regulations.

6.1 Strand

6.1.1

The strands shall be twisted evenly and tightly.

6.1.2

The core strand and fiber core shall provide sufficient support to ensure uniform twisting of the outer twisted wires. Uniform gaps are allowable between adjacent wires within a strand. For strands and ropes made of wires of the same diameter, the central wire and central strand shall be appropriately enlarged.

6.2.1 Twisting

6.2.1.1

The wire rope shall be evenly, tightly, and without looseness. It shall not be wavy when unloaded or under no-load conditions. The wires in the rope shall not have defects such as crossing, bending, or broken wires, but flattening of the wires due to the clamping of the deformation tool is allowable.

6.2.1.2

When manufacturing wire ropes, wires of the same diameter shall have the same nominal tensile strength. Wires of different diameters are allowed to use the same or adjacent