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

GB/T 20119-2006

**Flat steel wire ropes for balance
(English Translation)**

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1 Scope

This Standard specifies the dimensional marking, ordering contents, technical requirements, inspection and test, package, mark and quality certificate of the flat steel wire ropes for balance.

This Standard is applicable to the flat steel wire ropes for balance of shaft lifting equipment (referred to as flat steel wire rope).

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

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

GB/T 8707 Steel Wire Rope - Standard Designation (GB/T 8707-1988, ISO 3578:1980, idt)

GB/T 8919 Wire for Steel Wire Rope Use

SH/T 0387 Surface Grease for Steel Wire Ropes

3 Ordering Contents

The contract that orders products as per this Standard shall include the main contents as follows.

- a) Standard number;
- b) Product name;
- c) Structure (marking code);
- d) Nominal dimension;
- e) Surface state;
- f) Nominal tensile strength;
- g) Quantity (length);
- h) Whether oiled or not;
- i) Other requirements (proposed by the purchaser).

4.1 Typical structure, nominal dimension

4.1.1

The typical structure and nominal dimension of flat steel wire rope can refer to Table 1; while its sectional diagram can refer to Figure 2.

4.1.2

The special structure and nominal dimension shall be negotiated between the supplier and the purchaser, and indicated in the contract.

4.1.3 The width (including the weft rope) and thickness (position transversely passing

through by the weft rope) of the flat steel wire rope shall not exceed $\pm 10\%$ nominal dimension stipulated in Table 1.

4.2 Weight

The actual weight per unit of the flat steel wire rope shall not exceed $\pm 5\%$ reference weight stipulated in Table 1.

4.3 Length and permissible deviation

The number of all steel wires in one sub-rope; but the test quantity of galvanized layer weight shall be 10% (rounded off to an integer) number of steel wires in sub-rope.

6.1.3 Sampling method

After the manufacture of the sub-rope, take one left and one right alternating twist sub-rope, respectively; then select the same quantity of left and right twisted strands.

6.1.4.1 Tensile test

The tensile test shall be carried out as specified in GB/T 228; the numerical value shall conform to the provisions of 6.3.1.

6.1.4.2 Repeated bending

The repeated bending test shall be carried out as specified in GB/T 238; the numerical value shall conform to the provisions of 5.3.

6.1.4.3 Torsion

The torsion test shall be carried out as specified in GB/T 239; the numerical value shall conform to the provisions of 5.4.

6.1.4.4 Galvanized layer weight

The galvanized layer weight test of steel wire shall be carried out as specified in GB/T 2937; the numerical value shall conform to the provisions of 5.6.

6.2.1 Dimension measurement

The dimension of flat steel wire rope shall be measured by a Vernier caliper.

The measurement shall be carried out at a distance of no less than 30m away from end of

the flat steel wire rope under no tension.

6.2.2 Weaving quality

The weaving quality of the flat steel wire rope shall be checked by visual examination.

6.3.1 Breaking force

The sum of breaking tensile force of the steel wire in the flat steel wire rope obtained

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