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

DL/T 763-2013

**Technical requirements for overhead line helical fittings
(English Translation)**

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1 Scope

This standard specifies the types and technical conditions of overhead line helical fittings.

This standard applies to helical fittings, such as suspension clamps, tension clamps, connecting fittings, protective fittings, which are installed on overhead lines in a pre- twisted manner.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document;

for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 528 Rubber, vulcanized or thermoplastic - Determination of tensile stress- strain properties

GB/T 1173 Casting aluminium alloys

GB/T 1179 Round wire concentric lay overhead electrical stranded conductors

GB/T 2314 General technical requirements for electric power fittings

GB/T 2317.1 Test method for electric power fittings - Part 1.Mechanical tests

GB/T 2317.2 Test method for electric power fittings - Part 2. Corona and RIV tests for electric power fittings

GB/T 2317.3 Test method for electric power fittings - Part 3. Heat cycle tests for electric power fittings

GB/T 2317.4 Test method for electric power fittings - Part 4. Acceptance inspection for electric power fittings

GB/T 2479 Conventional abrasive - White fused alumina

GB/T 10125 Corrosion tests in artificial atmospheres - Salt spray tests

GB/T 11352 Carbon steel castings for general engineering purpose

GB/T 15115 Die casting aluminum alloys

GB/T 17937 Aluminium-clad steel wires for electrical purposes

GB/T 23308 Aluminium-magnesium-silicon alloy wire for overhead line conductors

DL/T 683 Nomenclature for fitting model

DL/T 758 Splicing fittings

DL/T 766 Technical requirements and tests for helical fittings of OPGW

DL/T 767 Technical requirements and tests for helical fittings of ADSS

DL/T 768.4 Manufacture quality specification for electric power fittings spheroidal graphite iron castings

DL/T 768.7 Manufacture quality specification for electric power fittings hot dip galvanized coatings on fabricated iron and steel articles

DL/T 788 All dielectric self-supporting optical fiber cable

DL/T 832 Optical fiber composite overhead ground wires

DL/T 1069 Repair guideline of conductor and earth wire for overhead transmission line

DL/T 1098 Requirements and tests for overhead line spacers

DL/T 1099 Technical requirements and tests for damper

YB/T 4222 Coated steel wire for overhead line helical fittings

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

Helical fittings

Fittings consisting of pre-twisted helical wires or non-metallic wires and related accessories.

3.2

Valid length

Figure 2 -- Schematic diagram of the typical structure of commonly used helical fittings

6.1 General requirements

6.1.1

The general technical conditions of helical fittings shall comply with the provisions of GB/T 2314. It shall be manufactured according to the drawings which are approved by the prescribed procedures.

6.1.2

Dimensions and tolerances.

- a) The size of the fittings shall meet the requirements of the design drawings.
- b) The effective length of the helical wire of the helical tension clamp should not be less than 5 pitches.
- c) The single wire diameter tolerance for manufacturing helical wires shall comply with the provisions of GB/T 17937, GB/T 23308, YB/T 4222.

6.1.3

Appearance of helical wire.

- a) The end of the helical wire is generally round or hemispherical. If there is an anti-corona requirement, the end of the helical wire should be duckbill-shaped.
- b) The surface of the helical wire shall be smooth and free from defects, such as cracks, folds, scars.

6.1.4

Helical direction of helical wire. The outer helical wire of the helical fittings shall be in the same direction as the outer layer of the twisted wire, generally right-handed.

The rotation direction of the helical wire in the inner layer of the tension clamp, for OPGW, shall be opposite to that of the outer layer of OPGW.

6.1.5

Material of helical wire.

- a) The material of the helical wire shall meet the design requirements.

- b) The tensile strength of aluminum alloy wire shall not be lower than 340 MPa; the tensile strength of aluminum-clad steel wire shall not be lower than 1100 MPa.
- c) The mechanical properties and galvanizing quality of the galvanized steel wire, which is used for helical wire, shall comply with the provisions of YB/T 4222.
- d) The helical wire material, which is used for helical tension clamps for insulated cables, shall be made of metal wires, whose strength is higher than that of the insulated cable core.

6.1.6

The white corundum, which is used in manufacturing, shall comply with the provisions of GB/T 2479.

6.1.7

Components and accessories, which are made of ferrous metals, are generally treated with hot-dip galvanizing for anti-corrosion treatment.

6.1.8

If there are other special requirements, they shall be determined, through negotiation between the supplier and the purchaser.

6.2 Suspension clamps

6.2.1

The sum (α) of the double-sided hanging angles of single-hanger clamp shall not be less than 30° ; the sum (α) of double-sided hanging angles of double-hanger clamps shall not be less than 60° .

6.2.2

The cast aluminum alloy, which is used for the main body of the suspension clamp, shall meet the requirements of GB/T 1173 or GB/T 15115.

6.2.3

The synthetic rubber parts, in the suspension clamps, shall have good anti-aging properties, anti-ozone, anti-ultraviolet, anti-air pollution capabilities. The performance of the rubber components shall meet the requirements in 7.8 of DL/T 1098.

6.2.4

Suspension clamps shall meet the requirements of vertical load and grip. The clamping force of the suspension wire shall meet the requirements of GB/T 2314, which shall not be less than 14% ~ 28% of the rated breaking force of the cable.

6.2.5

When the horizontal unbalanced load exceeds the design value, the clamp shall slide.