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

SN/T 5247-2020

**Technical requirements for inspection of imported wires and
cables, charging cables for new energy electric vehicles
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

1 Scope

This standard specifies the technical requirements and methods for the inspection of imported electric vehicle charging cables.

The cables specified in this standard include charging cables with rated voltages of AC 450 V/750 V and below, DC 1.0 kV and below (optional Including signal or control core).

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 2900.10 Electrical Engineering Terminology Cable GB/T 2951.11-2008 General test methods for insulation and sheath materials of electric and optical cables-Part 11: General test methods -Thickness and dimensions measurement-mechanical performance test GB/T 2951.12 General test methods for insulating and sheathing materials of electric and optical cables-Part 12: General test methods-thermal ageing Chemical test method GB/T 2951.13

General test methods for insulating and sheathing materials of electric and optical cables-Part 13: General test methods-Density Measurement method Water absorption test Shrinkage test GB/T 2951.14 General test methods for insulating and sheathing materials of electric and optical cables-Part 14: General test methods-low temperature test GB/T 2951.21 General Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables Part 21: Special Tests for Elastomer Mixtures Method Ozone resistance test-thermal extension test-mineral oil immersion test GB/T 2951.31 General test methods for insulating and sheathing materials of electric and optical cables-Part 31: Special test for PVC mixture Test method High temperature pressure test-anti-cracking test GB/T 3048.4 Test methods for electrical properties of wires and cables Part 4: Conductor DC resistance test GB/T 3048.8 Test methods for electrical properties of wires and cables Part 8: AC voltage test GB/T 3048.14 Test methods for electrical properties of wires and cables Part 14: DC voltage test GB/T 3956-2008 Cable conductor GB/T 17650.1 Test method for gas released when materials taken from cables or optical cables burn. Part 1: Determination of total halogen acid gas GB/T 17650.2 Test method for gas released when materials taken from cables or optical cables are burned. Part 2: Measuring pH and Conductivity to determine the acidity of a gas GB/T 17737.1-2000 Radio Frequency Cable Part 1: General Specification-General Principles, Definitions, Requirements and Test Methods GB/T 33594-2017 Electric vehicle charging cable

3 Terms and definitions

The following terms and definitions defined in GB/T 2900.10 apply to this document.

Rated voltage

The reference voltage for cable design, use and electrical performance test.

Note: In the AC system, the rated voltage is represented by U_0/U . U_0 represents any main insulated conductor and "ground" (metal shield, metal sleeve or surrounding medium) the effective value of the voltage between the two; U is the effective value of the voltage between any two phase conductors in a multi-core cable or a single-core cable system. The rated voltage of the cable should be up to at least equal to the nominal voltage of the system using the cable. This condition applies to both U_0 and U . In the DC system, the rated voltage is represented by U_0 , U_0 Indicates the effective value of the voltage between the conductor and the shield. The operating voltage of the system is not greater than 1.1 times the nominal voltage of the system.

Electric vehicles

For a car driven by an electric motor, the electric energy for the electric motor is derived from an on-board rechargeable battery or other energy storage device.

Charging

The process of transferring electrical energy from the external power supply network

(power supply) to the battery of an electric vehicle or other on-board energy storage devices in a controlled manner.

4.1 General requirements

The charging cable should meet the requirements of GB/T 33594-2017.

4.2.1 Conductor

The conductor should meet the requirements of GB/T 3956-2008 Category 5 or Category 6 soft conductor, the conductor can be bare copper conductor or tinned copper conductor.

4.2.2 Isolation layer

The conductor can be covered with an isolation layer made of suitable material.

4.2.3 Insulation (including main insulated cores, auxiliary power cores, and grounding cores)

The structure, material, thickness and spark test shall meet the requirements of 6.3 of GB/T 33594-2017.

4.2.4 Signal or control core

The structure, material, thickness and spark test shall meet the requirements of 6.4 in GB/T 33594-2017.

4.2.5 Core and filler

The structure and filler materials should meet the requirements of 6.5 in GB/T 33594-2017.

4.2.6 Inner protective layer

The structure, material and thickness shall meet the requirements of 6.6 in GB/T 33594-2017.

4.2.7 Total shield (if any)

The shield should be braided on the inner sheath with bare round copper wire or tinned copper wire.

The structure of the shielding layer shall meet the requirements of 6.7 of GB/T 33594-2017.

4.2.8 Sheath

The material and thickness of the sheath should meet the requirements of 6.8 in GB/T 33594-2017.

4.2.9 Cable outer diameter

The outer diameter of the cable should meet the requirements of 6.9 in GB/T 33594-2017.

4.3.1 General requirements

The cable should have a continuous mark of the manufacturer's name, product model specification and rated voltage. The logo of the factory name can be the name or trademark of the manufacturer.

The logo can be printed with ink or embossed on the sheath.

4.3.2 Symbol continuity

The distance between the end of one complete mark and the beginning of the next complete mark on the surface of the sheath shall comply with GB/T 33594-2017 7.2 requirements.

4.3.3 Clarity and scratch resistance

All signs should be legible.

The printed logo should be resistant to rubbing, and its test requirements should meet the requirements of 7.3 of GB/T 33594-2017.

4.4.1 Conductor DC resistance test

Conductor DC resistance test should be carried out in accordance with the requirements of GB/T 3048.4. The test conditions and results should comply with GB/T 33594-2017

11.2.1 Requirements.

4.4.2 Finished cable withstand voltage test

The AC charging cable shall be tested according to the method specified in GB/T 3048.8, and the charging cable used in the DC charging system shall be tested according to GB/T the test is carried out in the method specified in 3048.14, and the test conditions and results should meet the requirements in Table 12 of GB/T 33594-2017.

4.4.3 Insulated core voltage test

The test is carried out on a 5 m long sample. When stripping off the cable sheath and any other coatings or fillings, the insulated core should not be damaged and the insulation should not be damaged.

The structure of the insulated core is complete. The test shall be carried out in accordance with the method specified in 11.2.3 paragraph 2 of GB/T 33594-2017, and the test results