

ICS 43.040

QB

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

QB/T 5246-2018

**Leather products - Test method of flexing resistance for belt
(English Translation)**

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1 Scope

This document specifies the technical requirements, test methods, marking, packaging, transportation, storage safety requirements of integrated AC power supply standard sockets of conductive charging for electric vehicles.

This document is applicable to fixed integrated AC power supply standard sockets, which have a rated voltage of 220 V and a rated current of 10 A of conductive charging for electric vehicle.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in the text. Among them, for reference documents with dates, only the versions corresponding to the dates apply to this document; for reference documents without dates, the latest versions (including all amendments) apply to this document.

GB/T 1002-2021 Single phase plugs and socket-outlets for household and similar purposes - Types, basic parameters and dimensions

GB/T 2099.1-2021 Plugs and socket-outlets for household and similar purposes -

Part 1.General requirements

GB/T 2408-2021 Plastics - Determination of burning characteristics - Horizontal and vertical test

GB/T 2423.1-2008 Environmental testing for electric and electronic products - Part

2.Test methods - Tests A. Cold

GB/T 2423.2-2008 Environmental testing for electric and electronic products - Part

2.Test methods - Tests B. Dry heat

GB/T 2423.17 Environmental testing for electric and electronic products - Part 2.

Test method - Test Ka. Salt mist

GB/T 4208-2017 Degrees of protection provided by enclosure (IP code)

GB/T 7251.1-2013 Low-voltage switchgear and controlgear assemblies - Part 1.

General rules

GB/T 9254.1-2021 Information technology equipment, multimedia equipment and receivers
- Electromagnetic compatibility - Part 1.Emission requirements

GB/T 16422.2-2022 Plastics - Methods of exposure to laboratory light sources - Part

2.Xenon-arc lamps

GB/T 16916.1-2014 Residual current operated circuit-breakers without integral overcurrent
protection for household and similar uses (RCCB) - Part 1.General rules

GB/T 16935.1 Insulation coordination for equipment within low-voltage supply systems -
Part 1.Principles, requirements and tests

GB 18384-2020 Electric vehicles safety requirements

GB/T 18487.1-2023 Electric vehicle conductive charging system - Part 1.General
requirements

GB/T 18487.2-2017 Electric vehicle conductive charging system - Part 2.EMC requirements
for off-board electric vehicle supply equipment

GB/T 19596 Terminology of electric vehicles

GB/T 28569 Electric energy metering for electric vehicle AC charging spot

NB/T 33002-2018 Specification for electric vehicle AC charging spot

3 Terms and definitions

The terms and definitions as defined in GB/T 19596 and GB 18384-2020, as well as the
following terms and definitions, apply to this document.

3.1

Integrated AC power supply standard socket

Electric vehicles are charged using the AC charging connection device specified in

GB/T 18487.1-2023.The fixed device for charging and supplying power to electric vehicles

includes a single-phase two-pole grounded socket and other components for protection, fixing, and other functions, such as boxes, columns, residual current operated circuit breakers, etc.

3.2

Plug

2021.

4.4.3 The retention force of the single-phase two-pole grounded socket in the integrated

AC power supply standard socket shall meet the requirements of Chapter 22 of GB/T 2099.1-2021.

4.4.4 The plug-in and plug-out life of the single-phase two-pole grounded socket in the integrated AC power supply standard socket shall meet the requirements of Chapter 21 of GB/T 2099.1-2021.

4.4.5 The integrated AC power supply standard socket shall be equipped with an AC type residual current circuit breaker or a related device that meets the AC type residual current protection function specified in GB/T 16916.1-2014.

4.4.6 The integrated AC power supply standard socket should be equipped with necessary anti-theft devices.

4.5 Installation and maintenance requirements

4.5.1

The integrated AC power supply standard socket can be used for floor-standing and wall-mounted installation.

4.5.2 All mechanical and electrical connections of the integrated AC power supply

standard socket shall be firm.

4.5.3 Integrated AC power supply standard sockets shall be easy to install and maintain.

4.6.1 Protection against electric shock

Integrated AC power supply standard sockets shall meet the following requirements.

a) All high-voltage circuit parts shall meet the requirements of 5.1 personnel electric shock protection in GB 18384-2020. Class B live parts shall be arranged in the casing or behind the shield to prevent approaching the live parts from any direction;

- b) The electric shock protection device shall meet the requirements of Chapter 10 of GB/T 2099.1-2021 for protection against electric shock;
- c) The degree of protection of all live parts shall at least meet the IPXXB level specified in GB/T 4208-2017;
- d) The electrical clearance and creepage distance shall meet the requirements of Chapter 8 of GB/T 7251.1-2013. When the altitude is greater than 2000 m, the electrical clearance and creepage distance shall meet the requirements of GB/T 16935.1.

4.6.2 Grounding safety

The integrated AC power supply standard socket shall meet the following requirements.

- a) The grounding terminal in the integrated AC power supply standard socket shall meet the requirements of Chapter 11 Grounding measures in GB/T 2099.1-2021.
- b) The exposed conductive parts of the integrated AC power supply standard socket, including the exposed conductive shielding and shell, shall be able to be grounded normally. The metal shell of the integrated AC power supply standard socket shall be provided with a grounding bolt. According to the test method a) in 5.2, its diameter shall not be less than 3 mm; there shall be a grounding mark. The door, cover or similar parts of the integrated AC power supply standard socket shall be connected to the main frame of the power supply standard socket with a protective conductor. According to the test method b) in 5.2, the result requires that the cross-sectional area of the protective conductor shall not be less than 1.5 mm².
- c) The resistance between any exposed conductive part of the integrated AC power supply standard socket that can be touched by a person and the ground shall not exceed 0.1 ohm; the measurement method shall be in accordance with the method c) in 5.2.

4.6.3 Linkage safety

Integrated AC power supply standard sockets shall meet the following requirements according to the test method of 5.3.

- a) Integrated AC power supply standard sockets shall have the function of non-powered insertion and non-powered removal;
- b) The socket has an error prevention function. Only a 10 A single-phase two-pole grounding plug that complies with the provisions of GB/T 1002-2021 can be normally connected. According to the test method of 5.3, other special-shaped conductors cannot be normally connected or are not powered after being connected.