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

GB/T 31465.1-2015

**Road vehicles -- Fuse-link -- Part 1: Definitions and general test
requirements
(English Translation)**

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Foreword

GB/T 31465 Road Vehicles - Fuse-links includes the following 7 parts:

- Part 1: Definitions and General Test Requirements;
- Part 2: Users Guide;
- Part 3: Fuse-link with Blade Type;
- Part 4: Fuse-links with Female Contacts and Bolt-in Contacts;
- Part 5: Fuse-links with Axial Terminals (strip fuse-links);
- Part 6: Fuse-links with Bolt-in Contacts with High Voltage;
- Part 7: Fuse-links with Shortened Tabs.

This is the first part of GB/T 31465.

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

The amendment of this Part adopts the Redrafting Law; the formulation of this Part adopts ISO 8820-1: 2008 Road Vehicles - Fuse-links - Part 1: Definitions and General Test Requirements.

In comparison with ISO 8820-1: 2008, the technical differences and the causes for these differences are as follows:

---In terms of Chapter 2, this Part has made some adjustments with technical differences: international standards that have been transformed into or that are being transformed into Chinese standards are modified into Chinese standards.

Please refer to Chapter 2;

---In 5.3.3 in the previous context, Figure 1 is not mentioned. Figure 1 is added to this Part.

---In 5.4.3.1.1 in the previous context, t and Figure 2 do not match. In this Part, t is modified into T;

---In order to maintain consistency in context description in the standard, "after test, fuse-link shall receive rated operating time test in accordance with 5.5" in

5.4.3.2.1 is transferred to the requirements in 5.4.3.2.2;

---In order to make it convenient for operation, the requirement of test time error is added to 5.1.1.

Road Vehicles - Fuse-link -

Part 1: Definitions and General Test Requirements

1 Scope

This Part specifies the terms and general test requirements of fuse link.

This Part is applicable to fuse link for road vehicles.

This Part is not applicable to accessory sheathing products for vehicle fuse links.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specific date, only versions with a specific date are applicable to this document. In terms of references without a specific date, the latest versions (including all the modification lists) are applicable to this document.

GB/T 2423.53 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Xb: Abrasion of Markings and Letterings Caused by Rubbing of Fingers and Hands (GB/T 2423.53-2005, IEC 60068-2-70: 1995, IDT)

GB/T 25085 Road Vehicles - 60 V and 600 V Single-core Cables (GB/T 25085-2010, ISO 6722: 2006, IDT)

GB/T 28046.3 Road Vehicles - Environmental Conditions and Testing for Electrical and

Electronic Equipment - Part 3: Mechanical Loads (GB/T 28046.3-2011, ISO 16750-3: 2007, MOD)

GB/T 28046.5 Road Vehicles - Environmental Conditions and Testing for Electrical and Electronic Equipment - Part 5: Chemical Loads (GB/T 28046.5-2013, ISO 16750-5: 2010, MOD)

GB/T 31465.2-2015 Road Vehicles - Fuse-link - Part 2: Users Guide

GB/T 31465.3-2015 Road Vehicles - Fuse-link - Part 3: Fuse-link with Blade Type

GB/T 31465.4-2015 Road Vehicles - Fuse-link - Part 4: Fuse-links with Female Contacts and Bolt-in Contacts

GB/T 31465.5-2015 Road Vehicles - Fuse-link - Part 5: Fuse-links with Axial Terminals

NOTE: continuous operating current is lower than the rated current.

3.3 Rated Voltage

UR

Rated voltage refers to the maximum supply voltage that is applicable to fuse-links.

3.4 Voltage Drop

Ud

Voltage drop refers to the voltage value which is measured under the stipulated current and at the appointed measuring points.

3.5 Breaking Capacity

IB

Breaking capacity refers to the current value that fuse-link can normally fuse under stipulated conditions and rated voltage.

3.6 Time Constant

Time constant refers to the time that a physical quantity takes to rise from 0 to $1-1/e$ (for example, 63.2%), and ultimately reach a stable state. Under the stable state, the numerical value is not time t , but $1-e^{-kt}$.

3.7 Operating Time

Operating time refers to the time, starting from imposing overcurrent, till the current drops to below the appointed value.

4 Markings, Labels and Color Codes

On the surface of fuse-links, rated current and voltage shall be clearly and permanently marked. The rated current shall also be represented in the color codes stipulated in other parts of this series of standards. On fuse-link's insulator, the manufacturer's name, trademark and code shall be marked.

5.1.1 General test conditions

If there are no other stipulations, all tests shall be conducted under room temperature. If mechanical load test is requested, the demand-side and the supply-side shall negotiate and select test items of GB/T 28046.3.

5.4.2.2 Requirements

After the mechanical load test, fuse-link shall comply with the stipulated rated operating time provided in corresponding parts in this series of standards.

5.4.3.1.1 Test

Fuse-link shall receive the temperature/humidity cycle test stipulated in Figure 2. The test steps are as follows:

- a) Maintain sample under standard environmental conditions for 4 h.
- b) Within 0.5 h, under the relative humidity of 95% ~ 99%, raise T to $(55 \pm 2) ^\circ\text{C}$.
- c) At $(55 \pm 2) ^\circ\text{C}$ and the relative humidity of 95% ~ 99%, maintain for 10 h.
- d) Within 2.5 h, decrease T to $(-40 \pm 2) ^\circ\text{C}$ (do not control humidity).
- e) At $(-40 \pm 2) ^\circ\text{C}$, maintain for 2 h (do not control humidity).
- f) Within 1.5 h, raise T from $(-40 \pm 2) ^\circ\text{C}$ to $(120 \pm 2) ^\circ\text{C}$ (do not control humidity).
- g) At $(120 \pm 2) ^\circ\text{C}$, maintain for 2 h (do not control humidity).
- h) It is allowed to return to room temperature (do not control humidity) within 1.5 h.