

ICS 13.220.01

CCS C 81



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

GB 16838-2005

**Environmental test and severities for fire electronic products
(English Translation)**

Issued on: September 1, 2005

Implemented on: June 1, 2006

**Issued by: State Administration of Market Supervision and
Administration**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document replaces GB/T 16838-2005 "Environmental Test Methods and Severity Levels of Fire Electronic Products", and is compatible with GB/T 16838-2005 in comparison, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Change the classification of severity levels from the original 4 levels to 5 levels (see 4.3.1, 3.3 in the 2005 edition);

---Modified high temperature (operation) test, high temperature (endurance) test, low temperature (operation) test, low temperature (endurance) test, constant damp heat (operation) Test, constant damp heat (endurance) test, alternating damp heat (operation) test, alternating damp heat (endurance) test, water test, voltage fluctuation resistance Disturbance test, voltage sag, short-term interruption and voltage change immunity test, electrostatic discharge immunity test, radio frequency electromagnetic field radiation Radio immunity test, electrical fast transient pulse group immunity test, surge (impact) immunity test and radio frequency field induced conducted disturbance Interference immunity test (see 5.1~5.8, 5.18~5.25, 4.1~4.8, 4.14~4.19 and 4.21 of the 2005 edition);

---Added new requirements for the safety integrity level of fire-fighting electronic products (see 4.2);

--- Added free drop test, mildew test, salt spray test, sand dust test, power frequency

magnetic field immunity test, AC power port harmonic Low-frequency immunity test items of wave, interharmonic wave and power grid signal (see 5.14, 5.15, 5.16, 5.17, 5.26, 5.27).

This document was proposed by the Ministry of Emergency Management of the People's Republic of China.

This document is under the jurisdiction of the National Fire Standardization Technical Committee (SAC/TC113).

1 Scope

This document specifies the environmental test methods, severity levels and functional safety requirements for fire-fighting electronic products.

This document applies to all types of fire-fighting electronic products. For fire-fighting electronic products used in special places, if the use is more stringent than this document for the environmental test conditions, in addition to the test parameters specified separately, the test method can also refer to this document.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 2423.1-2008 Environmental testing of electric and electronic products Part 2: Test method Test A. Low temperature GB/T 2423.2-2008 Environmental testing of electric and electronic products Part 2: Test method Test B. High temperature GB/T 2423.3-2016 Environmental Test Part 2: Test Method Test Cab. Constant Humidity Test GB/T 2423.4-2008 Environmental testing of electrical and electronic products Part 2: Test method Test Db. Alternating damp heat (12h 12h cycle) GB/T 2423.7-2018 Environmental test Part 2: Test method Test Ec. Impact caused by rough operation (mainly used for Equipment type samples) GB/T 2423.16-2008 Environmental testing of electrical and electronic products Part 2: Test method Test J and guideline. Mould GB/T 2423.18-2012 Environmental test Part 2: Test method Test Kb. Salt spray, alternating (sodium chloride solution) GB/T 2423.19-2013 Environmental Testing Part 2: Test Method Test Kc. Sulfur Dioxide at Contact Points and Connectors test GB/T 2423.37-2006 Environmental testing of electric and electronic products Part 2: Test method Test L. Sand and dust test GB/T 2423.38-2008 Environmental testing of electrical and electronic products Part 2: Test methods Test R. Water test methods and guidelines GB/T 4208-2017 Enclosure protection grade (IP code) GB/T 17626.2-2018 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test GB/T 17626.3-2016 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test

GB/T 17626.4-2018 Electromagnetic compatibility test and measurement technology
Electrical fast transient pulse group immunity test GB/T 17626.5-2019 Electromagnetic
compatibility test and measurement technology surge (impact) immunity test GB/T
17626.6-2017 Electromagnetic compatibility test and measurement technology Radio
frequency field induced conducted disturbance immunity GB/T 17626.8-2006
Electromagnetic compatibility test and measurement technology Power frequency magnetic
field immunity test GB/T 17626.11-2008 Electromagnetic compatibility test and
measurement technology Voltage sag, short-term interruption and voltage change immunity
test GB/T 17626.13-2006 Electromagnetic compatibility test and measurement technology
AC power port harmonics, interharmonic waves and power grid signals Low frequency
immunity test GB/T 17626.14-2005 Electromagnetic compatibility test and measurement
technology Voltage fluctuation disturbance immunity test GB/T 20438.1-2017 Functional
safety of electrical/electronic/programmable electronic safety-related systems Part 1:
General requirements GB/T 20438.3-2017 Functional safety of
electrical/electronic/programmable electronic safety-related systems Part 3: Software
requirements