

ICS 13.220.40; 29.020  
CCS K 04



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

**GB/T 5169.45-2019**

---

**Fire hazard testing for electric and electronic products -- Part  
45: Guidance for assessing the fire hazard -- Fire safety  
engineering**

**Issued on: June 4, 2019**

**Implemented on: January 1, 2020**

---

**Issued by: State Administration for Market Regulation, China National  
Standardization Administration**

## Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

### Foreword

GB/T 5169 "Electrical and Electronic Products Fire Hazard Test" is divided into the following parts.

- Part 1. Terminology for ignition test;
- Part 2. General guidelines for the assessment of fire hazard;
- Part 5. Test flame test method, test method and guide;
- Part 9. General rules for pre-selection test procedures for fire hazard assessment guidelines;
- Part 10. Glow wire/hot wire basic test method Glow wire device and general test method;
- Part 11. Glow wire/hot wire basic test method Glow wire flammability test method (GWEPT);
- Part 12. Glow wire/hot wire basic test method Glow wire flammability index (GWFI) test method;
- Part 13. Glow wire/hot wire basic test method Glow wire light-off temperature (GWIT) test method for materials;
- Part 14. Test flame 1kW nominal premixed flame device, validation test method and guide;
- Part 15. Test flame 500W flame device and confirmation test method;
- Part 16. Test flame 50W horizontal and vertical flame test method;
- Part 17. Test flame 500W flame test method;
- Part 18. General principles of toxicity of combustion streams;
- Part 19. Unnormal thermal compression stress release deformation test;
- Part 20. Summary and correlation of test methods for flame surface spread;

- Part 21. Unusual hot ball pressure test method;
- Part 22. Test flame 50W flame device and confirmation test method;
- Part 23. Test flame tube polypolymer 500W vertical flame test method;
- Part 24. Guidelines for the assessment of the hazard of fire;
- Part 25. General rules for smoke blur;
- Part 26. Summary and correlation of smoke fuzzing test methods;
- Part 29. General rules for heat release;
- Part 30. Summary and correlation of heat release test methods;
- Part 31. General rules for the spread of flame surfaces;
- Part 32. Heat release of heat release insulating liquids;
- Part 33. Fire hazard assessment guidelines for general ignitability;
- Part 34. Fire hazard assessment guidelines Summary and correlation of ignitability test methods;
- Part 35. General principles for corrosion hazards of combustion streams;
- Part 36. Summary and correlation of test methods for corrosion hazards of combustion flows;
- Part 38. Summary and correlation of toxicity test methods for combustion streams;
- Part 39. Use and description of the results of the toxicity test of the combustion stream;
- Part 40. Toxic toxicological assessment devices and test methods for combustion streams;
- Part 41. Calculation and description of test results for toxic toxicity assessment of combustion streams;
- Part 42. Test flame confirmation test guidelines;
- Part 44. Fire hazard assessment guidelines for fire hazard assessment;
- Part 45. Fire hazard assessment guidelines for fire safety engineering.

This part is part 45 of GB/T 5169.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to IEC 60695-1-12:2015 "Fire hazard test Part 1-12. Electrical products fire hazard

Risk Assessment Guide Fire Safety Engineering.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

GB/T 5169.2-2013 Electrical and electronic products - Fire hazard testing - Part 2

(IEC 60695-1-10..2009, IDT)

--- GB/T 5169.44-2013 Electrical and electronic products - Fire hazard testing - Part 44. Fire hazard assessment guide

Risk assessment (IEC 60695-1-11.2010, IDT)

--- GB/T 5169.1-2015 Electrical and electronic products - Fire hazard testing - Part 1 . Fire test term (IEC 60695-4.

2012, IDT)

---GB/T 31593.4-2015 Fire safety engineering Part 4. Setting fire scenarios and setting fires (ISO /TS

16733.2006, MOD)

--- GB/T 31593.9-2015 Fire safety engineering - Part 9. Guidelines for evacuation assessment (ISO /T R16738.2009,

MOD)

---GB/T 31592-2015 General Rules for Fire Safety Engineering (ISO 23932.2009, MOD)

---GB/T 16499-2017 Preparation of electrical and electronic security publications and basic security publications and multi-disciplinary shared security publications

Guidelines for the application of substances (IEC Guide 104.2010, NEQ)

---GB/T 20002.4-2015 Drafting of specific content in the standard Part 4. Contents related to safety in the standard (ISO /IEC

Guide 51..2014, MOD)

This section has made the following editorial changes.

--- The standard name was changed to "Electrical and Electronic Products Fire Hazard Test Part 45. Fire Hazard Assessment Guide Fire Safety engineering".

This part was proposed by China Electrical Equipment Industry Association.

This part is under the jurisdiction of the National Standardization Technical Committee for Fire and Hazard Testing of Electrical and Electronic Products (SAC/TC300).

This section drafted by. China Electric Apparatus Research Institute Co., Ltd., Shenzhen Institute of Inspection and Quarantine, Dongguan City, Yue Electronics

Technology Co., Ltd., Fujian Xinneng Offshore Wind Power R&D Center Co., Ltd., Guangdong Entry-Exit Inspection and Quarantine Bureau Inspection and Quarantine Technology Center, Weikai

Testing Technology Co., Ltd., Electronics Fifth Institute of Industry and Information Technology, Yuehua Holding Group Co., Ltd., China Electronic Technology Standardization Research

Research Institute, Dongguan Entry-Exit Inspection and Quarantine Bureau Inspection and Quarantine Comprehensive Technology Center, Shenzhen Entry-Exit Inspection and Quarantine Bureau Industrial Products Testing Technology Center.

## Introduction

All electrical and electronic products must be designed with fire risk and potential fire hazard in mind. Design of components, circuits and components

And the screening of materials is designed to reduce the potential risk of fire to even the foreseeable abnormal use, failure and failure.

To accept the level. This section together with GB/T 5169.2 and GB/T 5169.44 provides guidance on how to achieve this.

The primary purpose is to prevent ignition of the live parts, and if ignition occurs, the fire is also limited to the outer casing of the electrical and electronic products.

The secondary purpose is to minimize the extent to which the flame spreads outside the product, and to include heat, smoke, toxic or corrosive combustion products.

Harmful effects are minimized.

Fires involving electrical and electronic products may also be caused by non-electric external sources of ignition. This factor should be considered in the overall risk assessment.

Fire safety engineering refers to the improvement of scientific principles based engineering methods by analyzing specific fire conditions or quantifying a set of fire risks.

An application designed to assess the environmental aspects of the building to achieve the purpose of fire safety engineering.

This section provides fire protection safety engineering methods and performance test information for the product committee. The technical content relates to the original fire safety engineering.

And instructions for use, guidelines for the use of fire safety engineering in the design of electrical and electronic products, terms and definitions of fire safety engineering, fire protection

Performance, data, and test guidelines required for safety engineering assessment.