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

GB/T 31248-2014

**Test methods for the measurement of flame spread, heat
release and smoke production on electric or optical fibre cables
under fire conditions**

电缆或光缆在受火条件下火焰蔓延、热释放和产烟特性的试验方法

(English Translation)

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Table of Contents

Introduction	
Introduction	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 Test apparatus	
4.1 Overview	
3 4.2 Air Supply System	

Foreword

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

This revised standard adopts EN50399:2011 "by the cable Common test methods for cables under fire conditions in the flame propagation Test Heat release and smoke production properties of test test equipment, procedures and results "(in English).

Taking into account China's national conditions, in the use of EN50399:2011, the standard of this made some changes, and differences relating to technical reasons attached Listed in Appendix A for reference.

For ease of use, the standard EN50399:2011 made the following editorial changes.

- Standard name has been modified to suit our habits;
- Will be the "European standards" be replaced by "this standard";
- Remove the foreword EU standards and some references;
- With a decimal point "." Instead of a comma as the decimal point "." the standard proposed by the People's Republic of China Ministry of Public Security.

This standard by the National Standardization Technical Committee for fire protection material Technical Committee (SAC/TC113/SC7) centralized.

Introduction

This standard describes the medium-scale fire tests were bunched cable or fiber optic cable. The test will be mounted on vertical cable ladder standard used Ignition source specified ignition, in order to evaluate the burning behavior of cables and combustion

properties. It can be obtained by testing the cable fire early stages Combustion performance data, spread by the heat release rate testing to reflect the risk of flame along the cable as well as the potential source of ignition Movies adjacent areas Rang through the smoke density test reflects the risk of fire and smoke visibility area of \u200b\u200bpersonal safety posed.

Test cable or cables can be obtained following properties under certain combustion conditions.

- Flame spread;
- Heat release rate;
- Total heat release;
- Tobacco rate;
- Total amount of smoke;
- Burning growth rate index;
- Burning droplets/particles.

The test device based on GB/T 18380.31-2008 "burning test and optical fiber cables under fire conditions - Part 31. Vertical Bunched wires or cables installed vertical flame spread test test device "(IEC 60332-3-10:2000, IDT) establish, while increasing the heat Release and smoke production properties of test equipment. Compared with GB/T 18380.31-2008, this standard has a sensitive test method is more accurate and comprehensive Stronger, the combustion performance rating evaluation more scientific characteristics.

The actual installation of the cable structure may affect the actual fire flame spread, an important factor in heat release and smoke generation, and therefore the test Special attention should affect the actual installation of the cable to the relevant measurement data. These measurements depend on the following factors.

- a) exposed to heat or flame volume cable itself and an external fire burning combustible material;
- b) the geometry of the cable, and the relationship between test space enclosure structures;
- c) the release of gases from the cable ignition temperature;
- Under d) the given temperature conditions, from the cable released amount of combustible gas;
- e) combustion air flow through the cable;
- f) the structure of the cable, such as armored or non-armored, multi-core or single core.

This standard determines the cable installation conditions, including exposure to the

material volume, the test standard cable ladder geometry, and by burning Air flow combustion chamber. These standardized conditions for Burning Behavior cable provides the foundation.

Cable or fiber optic cable by the fire flame spread under conditions Test methods for heat release and smoke production properties

1 Scope

This standard specifies under certain experimental conditions, the flame vertically mounted bunched wires or fiber optic cable spread, heat release and smoke special Test equipment and test methods for the evaluation of conduct.

This standard applies to the combustion performance evaluation for electric cables.

Note: The "wires and cables" mentioned in this standard, including all metal conductors insulated cables for power or signal transmission.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 5907 fire first part basic terms GB/T 16839.1-1997 Thermocouples - Part 1. indexing table (IEC 60584-1:1995, IDT) GB/T 18380.31-2008 burning test and optical fiber cables under fire conditions - Part 31. electrical wire bundles vertically mounted Cable vertical flame spread test test equipment (IEC 60332-3-10:2000, IDT)

3 Terms and Definitions

GB/T 5907 defined by the following terms and definitions apply to this document.

Heat release rate HRR Under specified conditions, material in unit time by the release of heat of combustion.

Total heat release THR Heat release rate within the specified time integral value.

Example. THR1200 represented by the fire in the 1200s the total heat release.

Tobacco rate smokeproductionrate SPR the amount of smoke generated per unit time.

Tobacco Total totalsmokeproduction TSP Smoke production rate within a specified time integral value.

Example. TSP1200 represents the total amount of smoke produced by the fire in the 1200s.