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

GB 31247-2014

**Classification for burning behavior of electric and optical
cables**

电缆及光缆燃烧性能分级

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Foreword

The standard Chapter 4 ~ Chapter 6 are mandatory, the rest are recommended. This standard was drafted in accordance with GB/T 1.1-2009 given rules. 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. This standard is drafted by: Ministry of Public Security of Sichuan Fire Research Institute. Participated in the drafting of this standard. Shanghai Electric Cable Research Institute, Telecom Science and Technology Institute of the fifth, Shenyang Fire Research Institute Ministry of Public Security, Sichuan Ming Star Cable Co., Ltd. Zhongli Science and Technology Group Co., Ltd., Far East Holding Group Co., Ltd., Shanghai Gaoqiao Cable Factory Limited Division, Hangzhou Tiger second choice Cable Co., Ltd., Anhui Hua special cable Group Co., DuPont China Holding Co., Ltd. (Suzhou) CommScope International Trading Co., Belden Hirschmann Network Systems International Trading (Shanghai) Co., Ltd., Daikin Fluorine Chemical (China) Co., Ltd., Nike Senkai News (Shanghai) Cable Co., Ltd., Solvay (Shanghai) Co., Ltd., 3M China Ltd, China Motion Industries (Suzhou) Co., Ltd. The main drafters of this standard. Chengdao Bin, Li Feng, Feng, Qu Li, Wang Pengxiang, including Mitsuhiro, Yu Wei, Zhang Xiang, Gong Guoxiang, Ding Hongjun, Zhu Yaming, Tang Yong, Hu Xinyu. This standard is the first release.

Promote the use of flame-retardant cable and fiber optic cable have great significance to building fire safety. For a long time, due to the lack of cables and cable flammability Grading standards of construction fire safety regulations in place for the necessary fire-retardant cable very general provisions, and in fact different The nature of the use of premises, such

as some crowded places and in need of special protection areas and to deal with the provisions of its cables and fiber optic cable used in high Combustion performance levels. By quantifying fiber optic cables and combustion performance grading Technical indicators to make fire-safety requirements more scientific and reasonable, and will probably Fire hazards resulting minimized. This standard is based on the actual needs of the construction of fire safety, and fiber optic cables to meet the performance requirements of classification and combustion system Given. To ensure fire protection with the construction coordination, and with the practical application of engineering matches this standard for cable and fiber optic cable combustibility When Grading Technical indicators fully into account the existing level of development of cable and fiber optic cable industry, and a lot of experimental verification. Cables and cable combustion performance classification

1 Scope

GB 31247-2014 is the Chinese national standard on classification for burning behavior of electric and optical cables, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 5 December 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 September 2015. Classification: ICS 13.220.20, CCS C82. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the terms and definitions fiber optic cables and combustion performance, combustion performance levels and criterion, additional information and identification. This standard applies to construction projects using fiber optic cables and combustion performance classification, does not apply to cable and fiber optic cable fire performance Classification.

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 8624-2012 Classification for burning behavior of building materials and products

GB/T 14402 Determination of building materials and products of combustion heat value

GB/T 17650.2 gases evolved when material from cables burning test methods - Part 2. measurement of pH and Conductivity is measured acidity of gases

GB/T 17651.2 of cables burning under defined conditions Measurement of smoke density - Part 2. Test procedure and requirements

GB/T 18380.12 and optical fiber cables under fire conditions - Test - Part 12. single insulated wire and cable vertical flame Test 1kW pre-mixed flame spread test methods

GB/T 20285 material smoke toxicity hazard rating

GB/T 31248-2014 Test methods of cables under fire conditions flame spread, heat release and smoke production properties by

3 Terms and Definitions

GB 8624-2012 and GB/T 31248-2014 define the following terms and definitions apply to this document. To facilitate making With the following list of repeated GB 8624-2012 and GB/T 31248-2014 of certain terms and definitions.

3.1 Gross calorific value grosscalorificpotential PCS Complete combustion per unit mass of material, all of the heat of combustion products condenses into water when released all the steam out. [GB 8624-2012, the definition 3.22]

3.2 Smoke toxicity smoketoxicity The extent of hazardous substances in the flue gas caused by damage/injury. [GB 8624-2012, the definition 3.19]

3.3 Heat release rate heatreleaserate HRR Under specified conditions, material in unit time by the release of heat of combustion. [GB/T 31248-2014, Definition 3.1]

3.4 Total heat release totalheatrelease THR Heat release rate within the specified time integral value. Example. THR1200 represented by the fire in the 1200s the total heat release. [GB/T 31248-2014,

3.2 Definition]

3.5 Tobacco rate smokeproductionrate SPR The amount of smoke generated per unit time. [GB/T 31248-2014, the definition 3.3]

3.6 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. [GB/T 31248-2014, the definition 3.4]

3.7 Burning growth rate index firegrowthrateindex FIGRA Maximum sample combustion heat release rate and its value corresponds to the ratio of time for combustion performance rating. [GB/T 31248-2014, the definition 3.6]

3.8 Burning droplets/particles flamingdroplet/particle In the combustion test, separated from the sample or particles. [GB/T 31248-2014, the definition 3.7]

3.9 Smoke density smokedensity The minimum light transmittance according to GB/T

17651.2 determined to express It.

3.10 Flame spread flamespread FS Maximum carbonized by GB/T 31248-2014

Determination of bunched cable flame surface distance.

3.11 Vertical flame spread verticalflamespread According to GB/T 18380.12 measured the distance between the starting point of the flame at the starting point of the charred portion of the surface of a single cable.

3.12 Corrosion corrosion The ability of the surrounding medium corrosion material.

Note. This standard material for electric cables on the components in the combustion gas released acidity size to evaluate their resistance.

4 and combustion performance level criterion

4.1 fiber optic cables and combustion performance levels are shown in Table 1. Table 1 fiber optic cables and combustion performance levels Combustion performance level Description A non-combustible cable (fiber optic) B1 flame-retardant Class 1 cable (fiber optic) B

4.3 A2 level not reached

6.1 in accordance with the standard testing with the cables and cable requirements shall identify the combustion performance levels in their products and packaging.

6.2 combustion performance rating of Class B1 and B2 level of cable and fiber optic cable, should be required to Chapter 5 gives burning droplets/particles grade, flue gas Toxic and corrosive grade levels, etc. Additional information identification.

6.3 fiber optic cables and combustion performance levels and additional information is identified as follows: Example. GB 31247B1- (d0, t1, a1) shows the cable or fiber optic cable combustion performance level for the B1 level, burning droplets/particles d0 grade rating, smoke toxicity Grade level is t1, a1 corrosive grade level.

5.1 General provisions Combustion performance levels

5.1.1 Additional information, including cable and fiber optic cable burning droplets/particles level, and corrosive smoke toxicity grade level.

5.1.2 fiber optic cables and combustion performance rating of B1 and B2 grade level should be given the appropriate additional information.

5.2 Burning droplets/particles Ratings

5.2.1 burning droplets/particles grade level is divided into d0, d1 and d2 grade level, a total of three levels.

5.2.2 burning droplets/particles rating and classification criterion in Table 3. Table 3 burning