

ICS 29.035.20

CCS K 15



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

GB/T 26168.3-2010

**Electrical insulating materials -- Determination of the effects of
ionizing radiation -- Part 3: Classification system for service in
radiation environments**

电气绝缘材料 确定电离辐射的影响 第3部分：辐射环境下应用的分级体系

(English Translation)

Issued on: January 14, 2011

Implemented on: July 1, 2011

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Classification system

Foreword

GB/T 26168 "Electrical insulating materials determine the effects of ionizing radiation" is divided into four parts.

- Part 1. Radiation interaction and dosimetry;
- Part 2. Radiation and test procedures;
- Part 3. Application under radiation environment of the hierarchy;
- Part 4. Evaluation of the operation of the aging process.

This is Part 3.

This section identical with IEC 60544-4:2003 "Electrical insulating materials to determine the influence of ionizing radiation - Part 4. Emission operating ring Throughout the hierarchy. " this part identical with IEC 60544-4:2003 when made the following editorial changes.

- Deleted international standards foreword.
- This section corresponding to international standards - Part 4, but because of this series of standards have been incorporated into Part 3 of Part 2, the national standards Sequentially numbered row to Part 3.
- This part of the reference documents, has been converted to our standards, it lists the standard and the extent of the transformation of international standards.
- Press GB 1.1 requirements, all references to international standards that appear in the original standard, into the normative references.
- Press GB 1.1 requirements, references are listed separately, delete reference.

This part is proposed by the China Electrical Equipment Industrial Association.

This part of the National Electrical insulation materials and insulation systems assessment

Standardization Technical Committee (SAC/TC301) centralized.

This section is responsible for drafting unit. Electrical Machinery Industry Beijing Technology and Economy Institute, Shenzhen City, measuring Detection Technology Co., Ltd., on Sea Cable Research Institute.

Participated in the drafting of this section. Nuclear Engineering Research and Design Institute, Shanghai Research and Design Institute of Nuclear Industry, Shenyang Cable Industry Co., Division Changzhou 8 benefit cable Limited, Cable Group Jiangsu, Zhejiang Wanma Cable Co., Limited Zhejiang Wanma polymer materials the company, Shanghai Cable Co., Ltd., Linhai City Yadong special cable plant Shanghai Kaibo special cable plant, Anhui Cable Company Limited Division Huaguang Electric Cable Co., Ltd., the Ministry of Industry and Information Technology Institute of Electronics V.

Introduction

Organic insulating material plays an important role in the electrical system. They metallic materials, ceramic materials, become electrical technology the main components of materials in the field. In all materials, organic materials are most sensitive to the effects of radiation on materials, different organic materials on radiation Reaction shot effects vary widely. Therefore, the choice of applied radiation environments insulating material requested candidate materials radiation resistance Energy information. Objective GB/T 26168 Part 3 is to provide a hierarchical radiation resistance of insulating materials in the above applications.

This section is "electrically insulating material to determine the effect of ionizing radiation" series, Part 3 standard.

GB/T 26168.1 of introduction, to assess the effects of radiation of many problems. It can be used to know the development of the amount of radiation measured terms, from the use Determination of the amount of radiation exposure and determining the absorbed dose of a specific material and absorbed dose calculation methods.

GB/T 26168.2 describes the steps to maintain the seven different types of radiation in the environment, exposure conditions. It also provides for the above-mentioned radiating strips Member of the control measures, so as to obtain results corresponding to comparative results for the material properties. In addition, it provides for determining Insulation material properties change and the corresponding (end criterion) of certain important irradiation conditions and test procedures.

GB/T 26168.4 introduced in the course of aging assessment procedure.

Electrical insulating materials to determine the effect of ionizing radiation Part 3.
Classification System under the radiation environment applications

1 Scope

This section GB/T 26168 specifies the classification system, as an alternative to nuclear reactions and retrieval facilities, reactor fuel processing device Shi, irradiation facilities, ion accelerators and X-ray equipment used in radiation environments insulating material guidance.

Rating system to determine exposure to a variety of three categories of polymeric materials (hard plastic, soft plastic device used in ionizing radiation environment Materials and elastomers) used to provide a set of parameters.

This section forms the basis for the applicability of these materials in a radiation environment quantitative assessment of proposed specifications determining such material and between suppliers and users guide signed purchase agreements.

2 Normative references

The following documents contain provisions which, through reference GB/T 26168 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 528-2009 vulcanized rubber or thermoplastic rubber tensile stress strain properties (ISO 37:2005, IDT) GB/T 1040 Determination of Tensile Properties of Plastics (ISO 527, IDT) GB /1043.1-2008 plastic Charpy impact properties measured T Part 1.

Non-instrumented impact test (ISO 179-1.

2000, IDT)

GB/T 1408.1 insulating materials electric strength test methods - Part 1. Tests at power frequencies (IEC 60243, IDT) GB/T 1410-2006 solid insulating material volume resistivity and surface resistivity test methods (IEC 60093. 1980, IDT) GB/T 2411-2008 Plastics and ebonite - Determination of indentation hardness using a durometer (Shore hardness) (ISO 868:2003, IDT) GB/T 6031-1998 Determination of vulcanized rubber or thermoplastic rubber hardness (10 ~ 100IRHD) (idt ISO 48:1994) GB/T 7759-1996 vulcanized rubber, thermoplastic rubber at room temperature, high and low temperature compression set was measured (eqv ISO 815:1991) GB/T 9341-2008 Plastics - Determination of flexural properties (ISO 178:2001, IDT) (. 1964 (1996), IDT IEC 60167) Test Method for insulation resistance of solid insulating materials GB/T 10064-2006 Determination GB/T 10580-2003 standard conditions of solid insulating material before the test and during the test used (IEC 60212. 1971, IDT) Part 1 GB/T 26168.1-2010 Electrical insulating materials to determine the impact of ionizing radiation. Radiation interaction and dosimetry Set (IEC 60544-1:1994,

IDT) GB/T 26168.2-2010 Electrical insulating materials to determine the influence of ionizing radiation - Part 2. Radiation and test procedures (IEC 60544-2:1991, IDT) IEC 61244-1:1993 Part 1 Determination of polymer aging long-term radiation. adjustment to limit oxidation diffusion of technology IEC 61244-2:1996 - Part 2 polymer aging long-term radiation. Low doses of radiation aging prediction program

3 Classification system

Classification for a particular purpose is a material under certain circumstances and in accordance with a predetermined dose of GB/T 26168.2-2010 provisions of the timber Radiation material testing, mechanical and/or electrical properties change before and after comparison of radiation, based on the comparison results do classification. In the above test