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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

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GB/T 2951.11-2008 / IEC 60811-1-1:2001

Replacing GB/T 2951.1-1997

**Common Test Methods for Insulating and Sheathing Materials
of Electric and Optical Cables - Part 11: Methods for General
Application - Measurement of Thickness and Overall
Dimensions - Tests for Determining the Mechanical Properties**

电缆和光缆绝缘和护套材料通用试验方法

第 11 部分：通用试验方法—厚度和外形尺寸测量—机械性能试验

(IEC 60811-1-1:2001, IDT)

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Quarantine;**

**Standardization Administration of the People's Republic of
China.**

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Foreword

GB/T 2951 *Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables* is divided into 10 parts:

- Part 11: Methods for General Application - Measurement of Thickness and Overall Dimensions - Tests for Determining the Mechanical Properties;
- Part 12: Methods for General Application - Thermal Ageing Methods;
- Part 13: Methods for General Application - Measurement for Determining the Density - Water;
- Part 14: Methods for General Application - Test at Low Temperature;
- Part 21: Methods Specific to Elastomeric Compounds - Ozone Resistance, Hot Set and Mineral;
- Part 31: Methods Specific to PVC Compounds - Pressure Test at High Temperature - Test for Resistance to Cracking;
- Part 32: Methods Specific to PVC Compounds - Loss of Mass Test - Thermal Stability Test;
- Part 41: Methods Specific to Polyethylene and Polypropylene Compounds - Resistance to Environmental Stress Cracking - Measurement of the Melt Flow Index – Carbon Black and/or Mineral Filler Content Measurement in Polyethylene by Direct Combustion - Measurement of Carbon Black Content by Thermo Gravimetric Analysis (TGA) - Assessment of Carbon Black Dispersion in Polyethylene Using a Microscope;
- Part 42: Methods Specific to Polyethylene and Polypropylene Compounds - Tensile Strength and Elongation at Break after Conditioning at Elevated Temperature - Wrapping Test after Conditioning at Elevated Temperature - Wrapping Test after Thermal Ageing in Air - Measurement of Mass Increasing - Long-term Stability Test - Test Method for Copper-catalyzed Oxidative Degradation;
- Part 51: Methods Specific to Filling Compounds - Drop Point - Separation of Oil - Lower Temperature Brittleness - Total Acid Number - Absence of Corrosive Components - Permittivity at 23 °C - DC Resistivity at 23 °C and 100 °C.

This is part 11 of GB/T 2951.

This Part equivalently adopts IEC 60811-1-1:2001 *Common Test Methods for Insulating and Sheathing Materials of Electric Cables and Optical Cables - Part 1-1*:

*Methods for General Application - Measurement of Thickness and Overall Dimensions
- Tests for Determining the Mechanical Properties (English version).*

In consideration of China's national conditions, and in order to make it convenient for users, this Part makes the following editorial modifications:

- “Part 11” is used to replace “Part 1-1”;
- Decimal point “.” is used to replace “,”, which serves as decimal point;
- The foreword part in the international standard is deleted;
- In this Part, 1.1 quotes Chinese standards that adopt international standards, instead of international standards;
- This Part adds “optical cables” to Chapter 1 and Chapter 3 in the original text of IEC 60811-1-1. It coordinates with the “and optical cables” in the title of the standard IEC 60811-1-1.

This Part serves as a replacement of GB/T 2951.1-1997 *Common Test Methods for Insulating and Sheathing Materials of Electric Cables - Part 1: Methods for General Application - Section One: Measurement of Thickness and Overall Dimensions - Tests for Determining the Mechanical Properties*.

In comparison with GB/T 2951.1-1997, this Part has the following main changes:

- The title of this Part is modified into “*Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 11: Methods for General Application - Measurement of Thickness and Overall Dimensions - Tests for Determining the Mechanical Properties*”;
- In order to accord with the title of this Part, the English title is also modified accordingly;
- Chapter 1 “electric cables for power distribution and telecommunications, including cables used on ships” is modified into “electric cables and optical cables for power distribution and telecommunications, including cables used on ships, and in offshore applications” (please refer to Chapter 1 in Version 1997; Chapter 1 in this version);
- In Chapter 3, “optical cables” is added to “applicability” (please refer to Chapter 3 in Version 1997; Chapter 3 in this version);
- 9.1.3 adds “NOTE”; c) is modified into “1)” and “2)” (please refer to 9.1.3 in Version 1997; 9.1.3 in this version);
- 9.1.6 and 9.2.6 are modified into “spare clauses”; the content is deleted (please

Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 11: Methods for General Application - Measurement of Thickness and Overall Dimensions - Tests for Determining the Mechanical Properties

1 Scope

GB/T 2951 specifies the test methods to be used for testing polymeric insulating and sheathing materials of electric cables and optical cables for power distribution and telecommunications including cables used on ships, and in offshore applications.

This Part of GB/T 2951 stipulates the methods for measuring thicknesses and overall dimensions, and for determining the mechanical properties, which apply to the most common types of insulating and sheathing compounds (elastomeric, PVC, PE, PP, etc.).

1.1 Normative References

Through the reference in this Part of GB/T 2951, the clauses in the following documents become clauses of this Part. In terms of references with a specific date, all the subsequent amendments (excluding corrected content) or revisions are not applicable to this Part. However, all parties that reach an agreement in accordance with this Part are encouraged to explore the possibility of adopting the latest versions of these documents. In terms of references without a specific date, the latest version is applicable to this Part.

GB/T 2951.12-2008 *Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 12: Methods for General Application - Thermal Ageing Methods* (IEC 60811-1-2:1985, IDT)

GB/T 2951.13-2008 *Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 13: Methods for General Application - Measurement for Determining the Density - Water Absorption Tests - Shrinkage Test* (IEC 60811-1-3:1993, IDT)

GB/T 2951.21-2008 *Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 21: Methods Specific to Elastomeric Compounds - Ozone Resistance, Hot Set and Mineral Oil Immersion Tests* (IEC 60811-2-1:1998, IDT)

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