

ICS 29.060.20

CCS K 13



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

GB/T 22078.1-2008

Power cables with cross-linked polyethylene insulation and their accessories for rated voltage of 500kV (Um=550kV) -- Part 1: Power cable systems-cables with cross-linked polyethylene insulation and their accessories for rated voltage of 500kV (Um=550kV).

额定电压500 kV(Um=550 kV)交联聚乙烯绝缘电力电缆及其附件 第1部分：额定电压500 kV(Um=550 kV)交联聚乙烯绝缘电力电缆及其附件——试验方法和要求

(English Translation)

Issued on: June 30, 2008

Implemented on: April 1, 2009

Issued by: Standardization Administration of China

Table of Contents

Introduction

1 Scope

2 Normative references

3 Definitions

4 Voltage and marking material

5 Cable water-blocking measures

6 Cable characteristics

Characteristics of Annex 4

Test conditions 4

9 Cables and prefabricated insulated accessory main routine test

10 Cable 6 sampling test

11 Annex 8 sampling test

Type 12 cable system test

13 Cable systems pre-qualification tests

After the installation of electrical test 14

Appendix A (normative) rounding off

Appendix B (normative) semi-conductive shielding resistivity measurement

Annex C (normative) permeability test

Annex D (normative) Test buried joint outer protective layer

Appendix E (normative) insulating layer impurities, micro and semi-conductive shielding layer and the porous insulating layer interface, the protrusion 25 test

Annex F (informative) of this section with IEC 62067:2006 technical differences and their reasons

Foreword

GB/T 22078 "rated voltage of 500kV ($U_m = 550\text{kV}$) XLPE insulated power cables and accessories" is divided into three parts.

--- Part 1. Rated voltage 500kV ($U_m = 550\text{kV}$) XLPE insulated power cables and test methods for accessories ---and requirements;

--- Part 2. Rated voltage 500kV ($U_m = 550\text{kV}$) XLPE insulated power cables;

--- Part 3. Rated voltage 500kV ($U_m = 550\text{kV}$) XLPE insulated power cable accessories.

This section GB/T 22078 Part 1.

The partial modification of the use of IEC 62067:2006Ed. 1.1 "rated voltage of 150kV ($U_m = 170kV$) above to 500kV ($U_m = 550kV$) extruded insulation cables and accessories --- Test method and requirements "(in English). IEC Technical Committee 20 (cable) has decided to the contents of this publication until 2010, remains unchanged. To this time, this publication will be reconfirmed or repeal or amend or modify.

The main technical content of this section and write formats, text structure and IEC 62067:2006 same, but using only the outer sheath material and normal Operating conditions of cable conductor maximum temperature of 90 °C adapted ST7 ST2 and outer sheath mixture; type test increased microporous insulation layer, miscellaneous and semi-conductive shielding layer and the porous insulating layer interface, projection test, a corresponding increase in Appendix E. impurity insulating layer, porous and semi-conductive shield and absolute Porous insulating layer interface, projection test; increased outer jacket Test for abrasion and corrosion aluminum sleeve extension trial. Insulation and insulation requirements eccentricity value Δ Routine test requirements and test sensitivity of partial discharge requirements are more stringent than IEC 62067:2006. About the technical differences have been incorporated into the text and identifies a single vertical line in which they are involved with the provisions margin. These technical differences are given in Appendix F and its prime Because the list for reference.

This section of the Appendix A, Appendix B, Appendix C, Appendix D, Appendix E is a normative appendix, Appendix F for the informative appendix.

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

This part of the National Standardization Technical Committee Wire and Cable (SAC/TC213) centralized.

This part of the unit responsible for drafting. Shanghai Electric Cable Research Institute.

Participated in the drafting of this section. Wuhan High Voltage Research Institute, the national wire and cable products for Quality Supervision and Inspection Center, TBEA Shandong Luneng Taishan Cable Co., Ltd., Far East Holding Group Co., Ltd., Shanghai cable transmission and distribution company, Tianjin plastic power cable Group Limited.

1 Scope

This section GB/T 22078 specifies the rated voltage of 500kV ($U_m = 550kV$) XLPE insulated cable system for fixed installation Systems, cables and their accessories - Test methods and requirements.

This requirement applies to single-core test cables and accessories under normal installation and operating conditions, not apply to special cables and accessories, such as submarine cables. For special cables may need to modify the test in this section

may require special design or test conditions.

This section does not include cross-linked polyethylene insulated cables paper insulated cables and transition joints.

2 Normative references

The following documents contain provisions which, through reference GB/T 22078 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 2951.11-2008 and optical cables - Common test methods for insulating and sheathing materials Part 11. General test method Measurement of thickness and overall dimensions of mechanical tests (IEC 60811-1-1:2001, IDT) GB/T 2951.12-2008 and optical cables - Common test methods for insulating and sheathing materials Part 12. General test method Thermal aging methods (IEC 60811-1-2. 1985, IDT) GB/T 2951.14-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 14. General test method Low temperature test (IEC 60811-1-4. 1985, IDT) GB/T 2951.21-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 21. elastomeric compounds designed Ozone Test Test Method for Thermal extending mineral oil immersion tests (IEC 60811-2-1:2001, IDT) GB/T 2951.31-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 31. Polyvinyl chloride mixture Methods specific high temperature pressure test test for resistance to cracking (IEC 60811-3-1. 1985, IDT) GB/T 2951.32-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 32. Polyvinyl chloride mixture Methods specific weight loss test - Thermal stability test (IEC 60811-3-2. 1985, IDT) GB/T 2951.41-2008 cable and the cable Common test methods for insulating and sheathing materials Part 41. polyethylene and polypropylene Mixed Methods specific environmental stress cracking resistance test melt index measurement method - direct measurement of combustion of carbon black and polyethylene /or mineral filler content - Thermal gravimetric analysis (TGA) measurements of carbon black content - microscopy assessment of carbon black dispersion in polyethylene (IEC 60811-4-1:2004, IDT) GB/T 2952.1-1989 cable outer sheath - Part 1. General GB/T 3048.12-2007 wire and cable electrical performance test methods - Part 12. Partial discharge tests (IEC 60885-3.

1988, MOD)

GB/T 3048.13-2007 wire and cable electrical performance test methods - Part 13. impulse voltage test (IEC 60230. 1966,