GB

ICS 29.020

K 09

NATIONAL STANDARD
OF THE PEOPLE'S REPUBLIC OF CHINA

GB 19517-2009

Replacing GB 19517-2004

National Safety Technical Code for Electric Equipment

Issued on: September 23, 2009 **Implemented on: October 01, 2010**

Jointly issued by: General Administration of Quality Supervision, Inspection and Quarantine;

Standardization Administration of the People's Republic of China.

Table of Contents

Foreword

All technical contents of this standard are compulsory.

This standard replaces GB 19517-2004 "National Safety Technical Code for Electric Equipment".

Compared with GB 19517-2004, the main differences of this standard are as follows:

— In Application Scope of 1.1 General Provisions, the lower limit value 50V of AC voltage and lower limit value 75V of DC voltage of electrical equipment are deleted, so it makes this standard also applicable to electric product of extra-low voltage range;

— In Application Scope of 1.1 General Provisions, "……below 1500V AC rated voltage," is changed into "……below 1200V AC rated voltage,";

— "Validity period of inspection report is 12 months" in 3.3.2 is deleted;

— In Appendix A, newly add the relevant national standards on top of the previous 15 professional compliance standards; add the national standards relevant to 4 professions such as small fuses, industrial electric heating equipment, electrical electronic environment (fire hazard test), and low voltage surge protector; Correspondingly make the amendment to the previously-included professional standards; the compliance standards in Appendix A are increased to 331 from previous 164;

— Appendix B is compiled according to the requirements of GB/T 1.1. And the English that corresponds to the terms and vocabulary.

The standards listed in Appendix A are the un-dated compliance standards to meet the necessary safety element of electrical equipment and various professional products; it is normative. Appendix B is also normative.

This standard was proposed by China Electrical Equipment Industry Association.

This standard shall be under the jurisdiction of National Technical Committee on Electric Safety of Standardization Administration of China (SAC/TC 25).

Drafting organizations of this standard: Mechanical Industry-Beijing Electrotechnics Economics Institute, and Shanghai Electric Tool Research Institute

Participating drafting organizations of this standard: Shanghai Electrical Apparatus Research Institute (Group) Co., Ltd., Shanghai Electric Cable Research Institute, China National Electric Apparatus Research Institute, Guilin Electrical Equipment Scientific Research Institute, Guangdong Supervision and Test Center for Product Quality, Xi'an Power Electronics Research Institute, Xuchang Relay Research Institute, Nanyang Explosion Protected Electrical Apparatus Research Institute, Zhengtai Electric Holdings Co., Ltd., Beijing ABB Low Voltage Apparatus Co., Ltd., Qingdao Ainuo Instrument Co., Ltd., and Schneider Electric (China) Investment Co., Ltd.

Chief drafting staffs of this standard: Li Feng, Fang Xiaoyan, Li Bangxie, Chen Kun, Liu Jiang, Ji Huiyu, Zeng Yanhong, Yang Qiming, Liu Shichang, Wang Xuelin, Luo Huaiping, Bao Ge, Xiang Yali, Liu Wen, Wei Hongqi, Lai Jing, and Zhang Gang.

Participating drafting staffs of this standard: Li Chunfa, Wang Zhongdan, He Caifu, and Yang

Zhifeng.

The previous edition replaced by this standard is:

— GB 19517-2004.

Introduction

The establishment of this standard is aimed to achieve optimum balance of overall safety level among people, environment and product; make the design, manufacturing, sales and application of electrical equipment to reduce the risk to life, health and property damage to maximum extent; and reach acceptable level.

The professional safety standards of various electric products must comply with this standard. And combine the necessary safety elements in technical codes WITH the characteristic of various electric products to supplement the corresponding data, provisions and special requirements.

This standard specifies the general common safety requirements of electrical equipment. The safety requirements of specific products are specified by the product standards. Both shall be used concurrently.

This standard is consisted of main text of which the essential safety elements are the technical body AND normative Appendix A which lists out various compliance standards. The relation of the main text and normative Appendix A is the relation of requirements versus the compliance and being recognized.

The electrotechnical materials such as conductor materials, insulating materials, flexible cables and flexible wires are important parts of safety essential elements. The electrotechnical material standards meeting above provisions are also listed in normative Appendix A.

This standard only provides the common principle requirements to the safety essential elements such as data, limit or permissible value, technical requirements and precautionary measures. The specific and detail requirements and measures are supplemented and enhanced in compliance standards listed in normative Appendix A.

The test methods, inspection rules and methods in essential safety elements are specified by the compliance standards listed in normative Appendix A.

According to actual demand, the compliance standards listed in normative Appendix A may be increased and decreased if it is scientific, appropriate and reasonable. Under the condition that it does not compromise the overall level of the product safety, the compliance standards are not necessary to satisfy all of the essential safety elements of this standard; it may be supplemented or modified.

National Safety Technical Code for Electric Equipment

1 General Provisions

1.1 This standard is applicable to all kinds of electrical equipment - below 1200V AC rated voltage and below 1500V DC rated voltage. These electrical equipment include:

— The electrical equipment that are used and contacted by unskilled persons according to design purpose or directly hand-held operated by users;

— The electrical equipment that are used at electrical workplace or closed electrical workplace and mainly or completely operated by professional or basically-trained persons.

1.2 The electrical equipment designed, manufactured, sold and used in China must be in accordance with this standard. The implementation of the export products may be in accordance with the contract provisions.

1.3 This standard specifies the general safety technical requirements of electrical equipment during design, manufacture, sales and application. It is used for:

— Structure foundation of safety technical contents of all kinds of electric products;

— For the electric products without professional safety standard, the safety level shall be preliminarily evaluated;

— Technical foundation for design, manufacture, sales and application of electrical equipment.

1.4 If other laws and regulations specify otherwise safety requirements for electrical equipment, the electrical equipment shall also meet the corresponding requirements.

The safety technical requirements of electrical equipment specified in this standard shall be specifically detailed in the professional standards of electrical equipment, and shall be specified according to the corresponding demonstration, verification and supplementary technical data.

1.5 This standard is not applicable to:

— The materials and auxiliary materials of electrical equipment that are not specified in this standard;

— The primary products or semi-finished products that are incapable of independent operation;

— The electrical equipment used for medical treatment purpose;

— The electrical equipment used in explosion environment;

— Elevator;

— Electric palisade energizer;

— Special electrical equipment such as ship, aerial vehicle and railway.

1.6 "Hazard" indicated in this standard excludes the hazard generated by inappropriate installation and maintenance of electrical equipment; and the hazard owing to no electrical

common rapidly and non-dangerously operated switch;

— There may appear auxiliary hazard when switching off some unit;

— The electrical equipment that can not be holistically monitored from the control panel.

2.6.4 The electrical equipment that have observation maintenance area or have such requirements that need human body part (such as hand) to put into the maintenance area during installation, maintenance, inspection and curing must be able to guarantee to prevent false-start.

2.6.5 The hand-held electrical apparatus must guarantee the users to be able to cut off the power without hands-off the apparatus handle; or guarantee to automatically return to "OFF" position when hands-off.

2.7 Mark

The mark is the necessary part of electrical equipment. And the basis characteristic, connection and standard compliance must be clearly expressed. The identification must use Chinese, and shall be distinctly and perpetually marked on the product. If it can not be marked on product, it shall be marked on packing box or explained in operational instructions.

The manufacturer name or trademark and country of origin of electrical equipment shall be clearly marked on product. If not, they shall be marked on the smallest packing box.

3 Inspection

3.1 Inspection Items

3.1.1 The specification of inspection items shall meet verifiability principle. One technical requirement shall only specify a kind of reproducible test method. If there are more than two test methods, it must be specified simultaneously. The arbitration method must be specified.

3.1.2 If the test procedure and environment temperature of inspection items may affect test results, the inspection procedure and test environment temperature shall be correspondingly specified. For the dangerous inspection method, measures to prevent danger shall be specified strictly.

3.1.3 The instruments, tools and equipment used in inspection shall be specified with precision grade. And the measuring instruments shall be provided with traceability.

3.2 Inspection Rules

3.2.1 The inspection of electrical equipment is divided into ex-factory inspection and type test. The type test shall be carried out at any of the following conditions:

— Completion of new product;

— Alteration of design, material or process that may cause the change of certain performance;

— There is non-permissible deviation between the ex-factory inspection results and previous type test results;

— Periodical quality sampling inspection.

3.2.2 The inspected samples include submitted sample and random-sampling sample. The inspection shall specify the condition for judging the product conformance or nonconformance; and shall specify the re-inspection rules when those nonconformance products are re-submitted for

inspection.

3.2.3 The type test may adopt the sampling inspection of statistics evaluation; or may be carried out on one sample for simplification. The sampling inspection shall specify the sampling scheme, sampling and sampling method, judgment rules and re-inspection rules.

3.3 Inspection Report

The inspection report shall be issued by the national authorized and designated testing organizations.

4 Implementation and Supervision

4.1 According to the relevant requirements of "The Standardization Law of the People's Republic of China" and "Implementation Regulations of the Standardization Law of the People's Republic of China", the organization and individual engaged in research, production and marketing of electrical equipment must implement this standard strictly. The products not meeting this standard shall be forbidden from production, sales and import.

4.2 According to the relevant requirements of "The Standardization Law of the People's Republic of China" and "Implementation Regulations of the Standardization Law of the People's Republic of China", state agencies, enterprises and citizens have the right to impeach, appeal and complaint any violation of this standard.

4.3 According to the relevant requirements of "Law of the People's Republic of China on Product Quality", the nation takes random inspection as the main way to implement supervision system on quality of electrical equipment (products).

4.4 The safety certification involved in this standard shall be implemented according to the relevant national laws, regulations and specifications.

4.5 The production licensing involved in this standard shall be implemented according to the relevant national laws, regulations and specifications.

4.6 The legal inspection of imported and exported electrical equipment involved in this standard shall be implemented according to the relevant laws, regulations and specifications of national import and export commodity inspection.

Appendix A

(Normative)

Compliance Standards

Low voltage apparatuses:

GB/Z 6829 "General Requirements for Residual Current Operated Protective Devices"

GB 10963 "Circuit-breakers for Overcurrent Protection for Household and Similar Installation"

GB 10963.1 "Electrical Accessories - Circuit-breakers for Overcurrent Protection for Household and Similar Installation - Part 1: Circuit-breakers for A.C. Operation"

GB 10963.2 "Circuit-breakers for Overcurrent Protection for Household and Similar Installation - Part 2: Circuit-breakers for A.C. and D.C. Operation"

GB 13539.1 "Low-voltage Fuses - Part 1: General Requirements"

GB/T 13539.2 "Low-voltage Fuses - Part 2: Supplementary Requirements for Fuses for Use by Authorized Persons (Fuses Mainly for Industrial Application) - Examples of Standardized Systems of Fuses A to I"

GB/T 13539.3 "Low-voltage Fuses - Part 3: Supplementary Requirements for Fuses for Use by Unskilled Persons (Fuses Mainly for Household and Similar Applications) - Examples of Standardized Systems of Fuses A to F"

GB/T 13539.4 "Low-voltage Fuses - Supplementary Requirements for Fuse-links for the Protection of Semiconductor Devices"

GB/T 13539.5 "Low-voltage Fuses - Part 3: Supplementary Requirements for Fuses for Use by Unskilled Persons (Fuses for Mainly for Household and Similar Application) - Examples of Standardized Fuses"

GB/T 13539.6 "Low-voltage Fuses - Part 2: Supplementary Requirements for Fuses by Authorized Persons (Fuses Mainly for industrial Application) - Section 1 to 5: Examples of Standardized Fuses"

GB/T 13539.7 "Low-voltage Fuses - Part 4-1: Supplementary Requirement for Fuse-links for the Protection of Semiconductor Devices - Section I to III: Example of Standardized Fuse-links"

GB 14048.1 "Low-voltage Switchgear and Controlgear - Part 1: General Rules"

GB 14048.2 "Low-voltage Switchgear and Controlgear - Part 2: Low-voltage Circuit-breakers"

GB 14048.3 "Low-voltage Switchgear and Controlgear - Part 3: Switches, Disconnectors, Switch-disconnectors and Fuse-combination Units"

GB 14048.4 "Low-voltage Switchgear and Controlgear - Low-voltage Electromechanical Contactors and Motor Starters"

GB 14048.5 "Low-voltage Switchgear and Controlgear - Part 5-1: Control Circuit Devices and Switching Element - Electromechanical Control Circuit Devices"

GB 14048.6 "Low-voltage Switchgear and Controlgear - Part 4-2: Contactors and Motor-starters AC Semiconductor Motor Controllers and Starters (Including Soft-starter)"

GB/T 14048.7 "Low-voltage Switchgear and Controlgear - Part 7-1: Ancillary Equipment - Terminal Blocks for Copper Conductors"

GB/T 14048.8 "Low-voltage Switchgear and Controlgear - Part 7-2: Ancillary Equipment - Protective Conductor Terminal Blocks for Copper Conductors"

GB 14048.9 "Low-voltage Switchgear and Controlgear - Section 6-2: Multiple Function Equipment Control and Protective Switching Devices (or Equipment) (CPS)"

GB 14048.10 "Low-voltage Switchgear and Controlgear - Part 5-2: Control Circuit Devices and Switching Element - Proximity Switches"

GB/T 14048.11 "Low-voltage Switchgear and Controlgear - Part 6-1: Multiple Function Equipment - Transfer Switching Equipment"

GB/T 14048.12 "Low-voltage Switchgear and Controlgear - Part 4-3: Contactors and Motor-starters - AC Semiconductor Controllers and Contactors for Non-motor Loads"

GB/T 14048.13 "Low-voltage Switchgear and Controlgear - Part 5-3: Control Circuit Devices and Switching Elements - Requirements for Proximity Devices with Defined Behaviour under Fault Conditions (PDF)"

GB/T 14048.14 "Low-voltage Switchgear and Controlgear - Part 5-5: Control Circuit Devices and Switching Elements - Electrical Emergency Stop Device with Mechanical Latching Function"

GB/T 14048.16 "Low-voltage Switchgear and Controlgear - Part 8: Control Units for Built-in Thermal Protection (PTC) for Rotating Electrical Machines"

GB 16916.1 "Residual Current Operated Circuit-breakers without Integral Overcurrent Protection for Household and Similar Uses (RCCB) - Part 1: General Rules"

GB 16916.21 "Residual Current Operated Circuit-breakers without Integral Overcurrent Protection for Household and Similar Uses (RCCB) - Part 21: Applicability of the General Rules to RCCB Functionally Independent of Line Voltage"

GB 16916.22 "Residual Current Operated Circuit-breakers without Integral Overcurrent Protection for Household and Similar Uses (RCCB) - Part 22: Applicability of the General Rules to RCCB Functionally Dependent of Line Voltage"

GB 16917.1 "Residual Current Operated Circuit-breakers with Integral Overcurrent Protection for Household and Similar Uses (RCBO) - Part 1: General Rules"

GB 16917.21 "Residual Current Operated Circuit-breakers with Integral Overcurrent Protection for Household and Similar Uses (RCBO) - Part 21: Applicability of the General Rules to RCBO Functionally Independent of Line Voltage"

GB 16917.22 "Residual Current Operated Circuit-breakers with Integral Overcurrent Protection for Household and Similar Uses (RCBO) - Part 22: Applicability of the General Rules to RCBO Functionally Dependent of Line Voltage"

GB/T 16935.1 "Insulation Coordination for Equipment within Low-voltage Systems - Part 1: Principles Requirements and Tests"

GB/T 16935.3 "Insulation Coordination for Equipment within Low-voltage Systems - Part 3: Use of Coating, Potting or Moulding for Protection against Pollution"

GB 17701 "Circuit-breaker for Equipment"

GB 17885 "Electromechanical Contactors for Household and Similar Purposes"

GB 19214 "Electrical Accessories - Residual Current Monitors (RCM) for Household and Similar Uses"

GB/T 19334 "Dimension of Low-voltage Switchgear and Controlgear - Standardized Mounting on Rails for Mechanical Support of Electrical Devices in Switchgear and Controlgear Installations"

GB 20044 "Electrical Accessories - Portable Residual Current Devices without Integral Overcurrent Protection for Household and Similar Use (PRCDs)"

GB/T 20636 "Connecting Device - Electrical Copper Conductors - Safety Requirements for Screw-type and Screwless-type Clamping units - Particular Requirements for Conductors above 35mm^2 up to 300mm^2"

GB/T 20640 "Electrical Accessories - Circuit-breakers and Similar Equipment for Household Use - Auxiliary Contact Units"

GB/T 20645 "Specific Environmental Condition - Technical Requirements of Low-voltage Apparatuses for Plateau"

GB/T 21208 "Low-voltage Switchgear and Controlgear - Controllers for Drivers of Stationary Fire Pumps"

GB/T 21705 "Power Monitor for Low-voltage Electrical Apparatus"

GB/T 21706 "Modular Terminal Combination Electrical Equipment"

Low-voltage switchgear and controlgear assemblies:

GB 7251.1 "Low-voltage Switchgear and Controlgear Assemblies - Part 1: Type-tested and Partially Type-tested Assemblies"

GB 7251.2 "Low-voltage Switchgear and Controlgear Assemblies - Part 2: Particular Requirements for Busbar Trunking Systems (Busways)"

GB 7251.3 "Low-voltage Switchgear and Controlgear Assemblies - Part 3: Particular Requirements for Low-voltage Switchgear and Controlgear Assemblies Intended to Be Installed in Places Where Unskilled Persons Have Access for Their Use - Distribution Boards"

GB 7251.4 "Low-voltage Switchgear and Controlgear Assemblies - Part 4: Particular Requirements for Assemblies for Construction Sites (ACS)"

GB 7251.5 "Low-voltage Switchgear and Controlgear Assemblies - Part 5: Particular Requirements for Assemblies of Public Grid Power Distribution"

GB 19212.8-2006 "Safety of Power Transformers, Power Supply Units and Similar - Part 8: Particular Requirements for Transformers for Toys"

GB 19212.9 "Safety of Power Transformers, Power Supplies Reactors and Similar Devices - Part 9: General Requirements for Bell and Chime Transformers"

GB 19212.10 "Safety of Power Transformers, Power Supply Units and Similar Devices - Part 10: Particular Requirements for Transformers for Class Ⅲ Handlamps for Tungsten Filament Lamps"

GB 19212.13 "Safety of Power Transformers, Power Supply Units and Similar Devices - Part 13: Particular Requirements for Constant Voltage Transformers"

GB 19212.14 "Safety of Power Transformers Power Supply Units and Similar Devices - Part 14: Particular Requirements for Auto-transformers for General Use"

GB 19212.16 "Safety of Power Transformers, Power Supply Units and Similar Devices - Part 16: Particular Requirements for Isolating Transformers for the Supply of Medical Locations"

GB 19212.18-2006 "Safety of Power Transformers, Power Supply Units and Similar - Part 18: Particular Requirements for Switch Mode Power Supplies"

GB 19212.20-2008 "Safety of Power Transformers, Power Supply Units and Similar - Part 20: Particular Requirements for Perturbation Attenuation Transformers"

GB 19212.21 "Safety of Power Transformers, Power Supply Units and Similar Devices - Part 21: Particular Requirements for Small Reactors"

GB 19212.24 "Safety of Power Transformers, Power Supply Units and Similar Devices - Part 24: Particular Requirements for Transformers for Construction Sites"

Electric tools:

GB 3883.1 "Safety of Hand-held Motor-operated Electric Tools - Part 1: General Requirements"

GB 3883.2 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Screwdrivers and Impact Wrenches"

GB 3883.3 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Grinders Polishers and Disk-type Sanders"

GB 3883.4 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Sanders and Polishers other than Disk Type"

GB 3883.5 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Circular Saws"

GB 3883.6 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Drills and Impact Drills"

GB 3883.7 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Hammers"

GB 3883.8 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Sheet Metal Shears and Nibblers"

GB 3883.9 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Tappers"

GB 3883.10 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Planers"

GB 3883.11 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Electric Reciprocating Saws (Jig and Sabre Saws)"

GB 3883.12 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Concrete Vibrators"

GB 3883.13 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Spray Guns for Non-flammable Liquids"

GB 3883.14 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Chain Saws"

GB 3883.15 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Hedge Trimmers"

GB 3883.16 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Tackers"

GB 3883.17 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Routers and Trimmers"

GB 3883.18 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Marble Cutters"

GB 3883.19 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Drain Cleaners"

GB 3883.20 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Strapping Tools"

GB 3883.21 "Safety of Hand-held Motor-operated Electric Tools - Part 2: Particular Requirements for Band Saws"

GB 19636 "Saw Tables for Use as Saw Benches - Tables for Hand-held Circular Saws with a Maximum Saw-blade Diameter of 315mm - Safety Requirements"

GB 13960.1 "Safety of Transportable Motor-operated Electric Tools - Part 1: General Requirements"

GB 13960.2 "Safety of Transportable Motor-operated Electric Tools - Part 2: Particular Requirements for Circular Saws"

GB 13960.3 "Safety of Transportable Motor-operated Electric Tools - Particular Requirements for Radial Arm Saws"

GB 13960.4 "Safety of Transportable Motor-operated Electric Tools - Particular Requirements for Planers and Thicknessers"

for Welding Cables"

GB/T 1 5579.5 "Arc Welding Equipment – Part 5: Wire Feeders"

GB 15579.7 "Arc Welding Equipment - Part 7: Torches"

GB 19213 "Safety Requirements for Portable Arc Welding Transformers"

Automatic controller:

GB 14536.1 "Automatic Electrical Controls for Household and Similar Use - Part 1: General Requirements"

GB 14536.3 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Thermal Motor Protectors"

GB 14536.4 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Thermal Protectors for Ballasts for Tubular Fluorescent Lamps"

GB 14536.5 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Thermal Motor Protectors for Motor - Compressors of Hermetic and Semi-hermetic Type"

GB 14536.6 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Automatic Electrical Burner Control Systems"

GB 14536.7 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Automatic Electrical Pressure Sensing Controls Including Mechanical Requirements"

GB 14536.8 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Timers and Time Switches"

GB 14536.9 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Electrically Operated Water Valves Including Mechanical Requirements"

GB 14536.10 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Temperature Sensing Controls"

GB 14536.11 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Motor-starting Relays"

GB 14536.12 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Energy Regulators"

GB 14536.13 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Electrically Operated Door Locks"

GB 14536.15 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Humidity Sensing Controls"

GB 14536.16 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Electric Actuators"

GB 14536.17 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Automatic Electrical Water Level Sensing Controls of the Float or Electrode-sensor Type Used in Boiler Applications"

GB 14536.18 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Automatic Electrical Water Level Controls of the Float Type for Household and Similar Applications"

GB 14536.19 "Automatic Electrical Controls for Household and Similar Use - Particular Requirements for Electrically Operated Gas Valves Including Mechanical Requirements"

Measuring relay and protection equipment:

GB 16836 "General Requirements of Safety Design for Measuring Relays and Protection Equipment"

GB/T 14598.3 "Electrical Relays - Part 5: Insulation Coordination for Measuring Relays and Protection Equipment - Requirements and Tests"

Electrical accessories:

GB 1002 "Single Phase Plugs and Socket-outlets for Household and Similar Purposes - Types Basic Parameters and Dimensions"

GB 1003 "Three Phases Plugs and Socket-outlets for Household and Similar Purposes - Types, Basic Parameters and Dimensions"

GB 2099.1 "Plugs and Socket-outlets for Household and Similar Purposes - Part 1: General Requirements"

GB 2099.2 "Plugs and Socket-outlets for Household and Similar Purposes - Part 2: Particular Requirements for Socket-outlets for Appliances"

GB 2099.3 "Plugs and Socket-outlets for Household and Similar Purposes - Part 2: Particular Requirements for Adaptors"

GB 2099.4 "Plugs and Socket-outlets for Household and Similar Purposes - Part 2: Particular Requirements for Switched Socket-outlets without Interlock for Fixed Installations"

GB 2099.5 "Plugs and Socket-outlets for Household and Similar Purposes - Part 2: Particular Requirements for Switched Socket-outlets with Interlock for Fixed Installations"

GB 2099.6 "Plugs and Socket-outlets for Household and Similar Purposes - Part 2: Particular Requirements for Fused Plugs"

GB/T 11918 "Plugs, Socket-outlets and Couplers for Industrial Purposes - Part 1: General Requirements"

GB/T 11919 "Plugs, Socket-outlets and Couplers for Industrial Purposes - Part 2: Dimensional Interchangeability Requirements for Pin and Contact-tube Accessories"

GB 17466.21 "Boxes and Enclosures for Electrical Accessories for Household and Similar Fixed Electrical Installations - Part 21: Particular Requirements for Boxes and Enclosures with Provision for Suspension Means"

GB 17466.22 "Boxes and Enclosures for Electrical Accessories for Household and Similar Fixed Electrical Installations - Part 22: Particular Requirements for Connecting Boxes and Enclosures"

GB 17466.23 "Boxes and Enclosures for Electrical Accessories for Household and Similar Fixed Electrical Installations - Part 23: Particular Requirements for Floor Boxes and Enclosures"

GB 17466.24 "Boxes and Enclosures for Electrical Accessories for Household and Similar Fixed Electrical Installations - Part 24: Particular Requirements for Enclosures for Housing Protective Devices and Similar Power Consuming Devices"

GB 19215.1 "Cable Trunking and Ducting Systems for Electrical Installations - Part 1: General Requirements"

GB 19215.2 "Cable Trunking and Ducting Systems for Electrical Installations - Part 2: Particular Requirements - Section 1: Cable Trunking and Ducting Systems Intended or Mounting on Walls or Ceilings"

GB 19637 "Electrical Accessories - Cable Reels for Household and Similar Purposes"

GB/T 20041.1 "Conduit Systems for Electrical Installations - Part 1: General Requirements"

GB 20041.21 "Conduit Systems for Cable Management - Part 21: Particular Requirement - Rigid Conduit Systems"

GB 20041.22 "Conduit Systems for Cable Management - Part 22: Particular Requirement - Pliable Conduit Systems"

GB 20041.23 "Conduit Systems for Cable Management - Part 23: Particular Requirement - Flexible Conduit Systems"

GB 20041.24 "Conduit Systems for Cable Management - Part 24: Particular Requirement - Conduit Systems Buried Underground"

Switches for appliances:

GB 15092.1 "Switches for Appliances - Part 1: General Requirements"

GB 15092.2 "Switches for Appliances - Part 2: Particular Requirements for Cord Switches"

GB 15092.3 "Switches for Appliances Part 2: Particular Requirements for Change-over Selectors"

GB 15092.4 "Switches for Appliances Part 2: Particular Requirements for Independently Mounted Switches"

GB/T 9536 "Electromechanical Switches for Use in Electronic Equipment - Part 1: Generic Specification"

GB/T 17209 "Electromechanical Switches for Use in Electronic Equipment Part 2: Sectional Specification for Rotary Switches"

GB/T 17210 "Electromechanical Switches for Use in Electronic Equipment Part 2: Sectional Specification for Rotary Switches Section 1 - Blank Detail Specification"

GB/T 15461 "Electromechanical Switches for Use in Electronic Equipment - Part 3: Sectional Specification for In-line Package Switches"

GB/T 15462 "Electromechanical Switches for Use in Electronic Equipment Part 3-1: Blank Detail Specification for In-line Package Switches"

GB/T 18496 "Electromechanical Switches for Use in Electronic Equipment - Part 4: Sectional Specification for Lever (Toggle) Switches"

GB/T 18496.2 "Electromechanical Switches for Use in Electronic Equipment - Part 4-1: Sectional Specification for Lever (Toggle) Switches - Blank Detail Specification"

GB/T 16514 "Electromechanical Switches for Use in Electronic Equipment - Part 5: Sectional Specification for Pushbutton Switches"

GB/T 16514.2 "Electromechanical Switches for Use in Electronic Equipment - Part 5-1: Sectional Specification for Pushbutton Switches Section 1: Blank Detail Specification"

GB/T 13419 "Electromechanical Switches for Use in Electronic Equipment - Part 6: Sectional Specification for Sensitive Switches"

GB/T 13420 "Electromechanical Switches for Use in Electronic Equipment - Part 6: Sectional Specification for Sensitive Switches Section 1: Blank 1: Blank Detail Specification"

Electrical materials

GB/T 5013.1 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 1: General Requirements"

GB/T 5013.2 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 2: Test Methods"

GB/T 5013.3 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 3: Heat Resistant Silicone Insulated Cables"

GB/T 5013.4 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 4: Cords and Flexible Cables"

GB/T 5013.5 "Rubber Insulated Cables of Rated Voltages up to and Including 450/750 V - Part 5: Lift Cables"

GB/T 5013.6 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 6: Arc Welding Electrode Cables"

GB/T 5013.7 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 7: Heat Resistant Ethylene-vinyl Acetate Rubber Insulated Cables"

GB/T 5013.8 "Rubber Insulated Cables of Rated Voltages up to and including 450/750V - Part 8:

Purposes - Part 8: Requirements for Rigid Laminated Sheets Based on Silicone Resins"

GB/T 5132.5 "Industrial Rigid Round Laminated Tubes and Rods Based on Thermosetting Resins for Electrical Purposes - Part 5: Round Laminated Moulded Rods"

GB/T 5019.3 "Specification for Insulating Materials Based on Mica - Part 3: Commutator Separators and Materials"

GB/T 5022-1998 "Specification for Rigid Mica Materials for Heating Equipment"

GB/T 13542.3-2006 "Film for Electrical Insulation - Part 3: Biaxially Oriented Polypropylene Films for Capacitors"

GB 12802.2-2004 "Film for Electrical Insulation - Part 2: Polythylene Terephthalate Film Used for Electrical Insulation"

GB/T 1303.2-2002 "Specification for Industrial Rigid Laminated Sheets Based on Thermosetting Resins for Electrical Purposes - Part 3: Specifications for Individual Materials - Sheet 3: Requirements for Rigid Laminated Sheets Based on Melamine Resins"

GB/T 5019.4 "Specification for Insulating Materials Based on Mica - Part 4: Mica Paper"

GB/T 5019.6 "Specification for Insulating Materials Based on Mica - Part 3: Specifications for Individual Materials - Sheet 4: Polyester Film-backed Mica Paper with a B-stage Epoxy Resin Binder"

GB/T 13542.6 "Film for Electrical Insulation - Part 6: Polyimide Films for Electrical Insulation"

GB/T 19264.3-2003 "Specification for Pressboard and Presspaper for Electrical Purposes - Part 3: Specifications for Individual Materials - Sheet 1: Requirements for Pressboard, Type B.0.1, B.2.1, B.2.3, B.3.1, B.3.3, B.4.1, B.4.3, B.5.1, B.6.1 and B.7.1"

GB/T 8320 "Copper-tungsten and Silver-tungsten Electrical Contacts"

GB/T 5588 "Technical Specification for Silver-nickel, Silver-iron Electrical Contacts"

GB/T 13397 "Technical Specification for Silver-metaloxide Electrical Contacts by Alloy Internal Oxidation Method"

GB 12940 "Technical Specification for Silver-graphite Electrical Contacts"

GB/T 20235 "Technical Specification for Silver-tin Oxide Electric Contact Materials"

GB/T 13033.1 "Mineral Insulated Cables and Their Terminations with a Rated Voltage not Exceeding 750V - Part 1: Cables"

GB/T 13033.2 "Mineral Insulated Cables and Their Terminations with a Rated Voltage not exceeding 750V - Part 2: Terminations"

GB/T 2951.11 "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"

GB/T 2951.12 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 12: Methods for General Application - Thermal Ageing Methods"

GB/T 2951.13 "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"

GB/T 2951.14 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 14: Methods for General Application - Test at Low Temperature"

GB/T 2951.21 "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"

GB/T 2951.31 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 31: Methods Specific to PVC Compounds - Pressure Test at High Temperature - Test for Resistance to Cracking"

GB/T 2951.32 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 32: Methods Specific to PVC Compounds - Loss of Mass Test - Thermal Stability Test"

GB/T 2951.41 "Common Test Methods for Insulating and Sheathing Materials of Electric and

Optical Cables - Part 41: Methods Specific to Polyethylene and Polypropylene Compounds - Resistance to Environmental Stress Cracking - Measurement of the Melt Flow Index - Carbon Black"

GB/T 2951.42 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - Part 42: Methods Specific to Polyethylene and Polypropylene Compounds - Tensile Strength and Elongation at Break after Conditioning at Elevated Temperature-Wrapping"

GB/T 2951.51 "Common Test Methods for Insulating and Sheathing Materials of Electric and Optical Cables - 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℃ - DC Resistivity at 23℃and 100℃"

GB/T 17651.1 "Measurement of Smoke Density of Cables Burning under Defined Conditions - Part 1: Test Apparatus"

GB/T 17651.2 "Measurement of Smoke Density of Cables Burning under Defined Conditions - Part 2: Test Procedure and Requirements"

Power capacitors

GB/T 3984.1 "Power Capacitors for Induction Heating Installations - Part 1: General"

GB/T 3984.2 "Power Capacitors for Induction Heating Installations - Part 2: Ageing Test, Destruction Test and Requirements for Disconnecting Internal Fuses"

GB 3667.1 "AC Motor Capacitors - Part 1: General - Performance, Testing and Rating - Safety Requirements - Guide for Installation and Operation"

GB 3667.2 "AC Motor Capacitors - Part 2: Motor Start Capacitors"

GB/T 17478 "Low-voltage Power Supply Devices, D.C. Output - Performance Characteristics"

GB/T 21560.3 "Low-voltage Power Supplies D.C. Output - Part 3: Electromagnetic compatibility"

GB/T 21560.6 "Low-voltage Power Supplies D.C. Output - Part 6: Requirements for Low-voltage Power Supplies Assessed Performance"

Miniature fuses

GB 9364.1 "Miniature Fuses - Part 1: Definitions for Miniature Fuses and General Requirement for Miniature Fuse-links"

GB 9364.2 "Miniature Fuses - Part 2: Cartridge Fuse-links"

GB 9364.3 "Miniature Fuses - Part 3: Sub-miniature Fuse-links"

GB 9364.4 "Miniature Fuses - Part 4: Universal Modular Fuse-links (UMF)"

GB 9364.6 "Miniature Fuses - Part 6: Fuse-holders for Miniature Cartridge Fuse-links"

GB 9816 "Thermal-links - Requirements and Application Guide"

Industrial electroheat installations:

GB 5959.1 "Safety in Electroheat Installations - Part 1: General Requirements"

GB 5959.2 "Safety in Electroheat Installations - Part 2: Particular Requirements for Arc Furnace Installations"

GB 5959.3 "Safety in Electroheat Installations - Part 3: Particular Requirements for Induction and Conduction Heating and Induction Melting Installations"

GB 5959.4 "Safety in Electroheat Installations - Part 4: Particular Requirements for Safety Resistance Heating Installations"

GB 5959.5 "Safety in Electroheat Installations - Part 5: Specifications for Safety in Plasma Installations"

GB 5959.6 "Safety in Electroheat Installations - Part 6: Specifications for Safety in Industrial Microwave Heating Equipment"

GB 5959.7 "Safety in Electroheat Installations - Part 7: Particular Requirements for Installations with Electron Guns"

GB 5959.8 "Safety in Electroheat Installations - Part 8: Particular Requirements for Electroslag Remelting Furnaces"

GB 5959.9 "Safety in Electroheat Installations - Part 9: Particular Requirements for High-frequency Dielectric Heating Installations"

GB 5959.11 "Safety in Electroheat Installations - Part 11: Particular Requirements for

Installations for Electromagnetic Stirring, Transport or Pouring of Metal Liquids"

GB 5959.41 "Safety in Electroheat Installations - Part 41: Particular Requirements for Resistance Heating Equipment - Heating and Melting Glass Equipment"

Environment fire hazard testing for electric and electronic products:

GB/T 5169.1 "Fire Hazard Testing for Electric and Electronic Products - Part 1: Terminology Concerning Fire Tests"

GB/T 5169.2 "Fire Hazard Testing for Electric and Electronic Products - Part 2: Guidance for Assessing the Fire Hazard - General Guidelines"

GB/T 5169.3 "Fire Hazard Testing for Electric and Electronic Products - Part 3: Guidance for the Preparation of Requirements and Test Specifications for Assessing Fire Hazard of Electronic Components"

GB/T 5169.5 "Fire Hazard Testing for Electric and Electronic Products - Part 5: Test Flames - Needle Test Method - Apparatus Confirmatory Arrangement and Guidance"

GB/T 5169.7 "Fire Hazard Testing for Electric and Electronic Products - Test Methods - Diffusion Type and Premixed Type Flame Test Methods"

GB/T 5169.9 "Fire Hazard Testing for Electric and Electronic Products - Guidance for the Preparation of Requirements and Test Specification for Assessing Fire Hazard - Guidance for Use of Preselection Procedures"

GB/T 5169.10 "Fire Hazard Testing for Electric and Electronic Products - Part 10: Glow/Hot-wire Based Test Methods - Glow-wire Apparatus and Common Test Procedure"

GB/T 5169.11 "Fire Hazard Testing for Electric and Electronic Products - Part 10: Glow/Hot-wire Based Test Methods - Glow-wire Flammability Test Method for End-products"

GB/T 5169.12 "Fire Hazard Testing for Electric and Electronic Products - Part 12: Glowing/Hot-wire Based Test Methods - Glow-wire Flammability Test Method for Materials"

GB/T 5169.13 "Fire Hazard Testing for Electric and Electronic Products - Part 13: Glowing/Hot-wire Based Test Methods - Glow-wire Ignitability Test Method for Materials"

GB/T 5169.14 "Fire Hazard Testing for Electric and Electronic Products - Part 14: Test flames - 1 kW Nominal Pre-mixed Flame - Apparatus Confirmatory Test Arrangement and Guidance"

GB/T 5169.15 "Fire Hazard Testing for Electric and Electronic Products - Part 15: Test Flames - 500W Flames - Apparatus and Confirmational Test Methods"

GB/T 5169.16 "Fire Hazard Testing for Electric and Electronic Products - Part 16: Test Flames - 50W Horizontal and Vertical Flame Test Methods"

GB/T 5169.17 "Fire Hazard Testing for Electric and Electronic Products - Part 17: Test Flames - 500W Flame Test Methods"

GB/T 5169.18 "Fire Hazard Testing for Electric and Electronic Products - Part 18: Guidance on the Minimization of Toxic Hazards due to Fire Involving Electric and Electronic Products - General"

GB 4793.6 "Safety Requirements for Electrical Equipment for Measurement Control and Laboratory Use - Part 6: Particular Requirements for Laboratory Equipment for the Heating of Materials"

GB 4793.7 "Safety Requirements for Electrical Equipment for Measurement Control and Laboratory Use - Part 7: Particular Requirements for Laboratory Centrifuges"

Appendix B

(Normative)

Terms and Definitions

This standard adopts the following terms and definitions.

B.1

Electrical equipment

It refers to the products or parts that are applicable to electrical energy application according to function and structure. For example, power generation, power transmission, power distribution, storage, measurement, control, adjustment, transformation, supervision, protection and electrical energy consumption products, also including electrical equipment, electrical installation, electrical apparatus and their combinations in communication technology field.

B.2

Class 0 equipment

It refers to the equipment of which the electric shock protection relies on basic insulation, without connection measure between accessible conductive part (if any) and protective conductor in permanent wiring of equipment; and relies on surrounding environment in case of basic insulation damage.

B.3

Class I equipment

It refers to the equipment of which the electric shock protection not only relies on basic insulation, but also includes an additional safety measure, namely connecting conductive part of easy electric shock to protective (earthing) conductor in permanent wiring of equipment; so that the easy-to-touch conductive part may not become live part in case of basic insulation fails.

B.4

Class II equipment

It refers to the equipment of which the electric shock protection not only relies on basic insulation, but also includes additional safety measures (such as double insulation or reinforced insulation), but without specification for protective earthing or relying equipment condition.

B.5

Class III equipment

It refers to the equipment of which the electric shock protection relies on safety extra-low voltage power supply, and the voltage generated therein is not larger than safety extra-low voltage.

B.6

Hazard

References

[1] GB/T 2900.1-2008 "Electrotechnical Terminology - Fundamental Terms"

[2] GB/T 20000.4-2003 "Guide for Standardization - Part 4: Safety Aspects for Their Inclusion in Standards"

[3] IEC 60050-826:2004 "International Electrotechnical Vocabulary - Part 826: Chapter 826: Electrical Installations of Buildings"

_____ END _____

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------