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

GB/T 16895.3-2017

**Low-voltage electrical installations -- Part 5-54: Selection and
erection of electrical equipment -- Earthing arrangements and
protective conductors**

(English Translation)

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Foreword

GB/T 16895 Low-Voltage Electrical Installations can be divided into 5 parts, which may be further divided into several sub-parts.

--- Part 1.Fundamental Principles Assessment of General Characteristics Definitions;

--- Part 4.Protection for Safety;

--- Part 5.Selection and Erection of Electrical Equipment;

--- Part 6.Acceptance;

--- Part 7.Requirements for Special Installations and Locations.

This Part is Part 5 of GB/T 16895.Part 5-54.Selection and Erection of Electrical Equipment.

This Part was drafted as per the rules specified in GB/T 1.1-2009.

This Part replaced GB/T 16895.3-2004 Electrical Installations of Buildings - Part 5-54.

Selection and Erection of Electrical Equipment - Earthing Arrangements, Protective Conductors and Protective Bonding Conductors. Compared with GB/T 16895.3-2004, the major technical changes of this Part are as follows.

--- Change the standard name into "Low-Voltage Electrical Installations - Part 5-54.

Selection and Erection of Electrical Equipment - Earthing Arrangements and Protective Conductors".

--- Clarify the definition of protective conductors. When used for electric shock protection, protective conductors include protective bonding conductors, protective earthing conductors and grounding conductors. In order to avoid confusion between protective conductors and protective earthing conductors, where protective conductors are specifically referred to as protective earthing conductors, this Part uses protective earthing conductors instead of protective conductors;

--- Add three examples of PEN conductor connection in the main switchboard;

--- Add Appendix C (Informative) "Erection of Concrete-Embedded Foundation Earth Electrodes";

--- Add Appendix D (Informative) "Erection of Soil-Embedded Earth Electrodes".

This part used translation method to equivalently adopt IEC 60364-5-54:2011 Low-Voltage Electrical Installations - Part 5-54. Selection and Erection of Electrical Equipment - Earthing Arrangements and Protective Conductors.

The Chinese documents that have consistent correspondence with the international documents

cited in this Part are as follows.

--- GB/T 7251.1-2013 Low-voltage switchgear and controlgear assemblies - Part 1. General rules (IEC 61439-1:2011, IDT)

--- GB/T 7251.2-2013 Low-voltage switchgear and controlgear assemblies - Part 2. Power switchgear and controlgear assemblies (IEC 61439-2:2011, IDT)

--- GB/T 15544.1-2013 Short-circuit Current Calculation in Three-phase A.C. Systems - Part 1. Calculation of Currents (IEC 60909-0:2001, IDT)

--- GB/T 21714 (all parts) [IEC 62305 (all parts)]

Compared with IEC 60364-5-54:2011, this Part has completely the same clause No., and completely the same technical contents; however, it only makes the following editorial modification.

--- Delete "Annex E" of IEC standard.

This Part was proposed by and under the jurisdiction of National Technical Committee on Building Electrical Devices of Standardization Administration of China (SAC/TC 205).

Drafting organizations of this Part. China Aviation Planning and Design Institute (Group) Co.,

Ltd.; and China Electric Design Research Institute of MMI.

Participating drafting organizations of this Part. China Machinery International Engineering Design & Research Institute Co., Ltd.; Machinery Industry Beijing Electrotechnical Institute of

Economic Research; and Siemens Ltd. China.

Chief drafting staffs of this Part. Liu Pingzhou, Su Biping, Ding Jie, Wang Zengyao, Li Xianfeng, Zhu Shanshan, Li Feng, and Hu Hongyu.

The historical editions replaced by this Part are as follows.

--- GB 16895.3-1993, GB/T 16895.3-2004.

Low-Voltage Electrical Installations - Part 5-54.

Selection and Erection of Electrical Equipment -

Earthing Arrangements and Protective Conductors

541.1 Scope

This Part of GB/T 16895 addresses the earthing arrangements and protective conductors including protective bonding conductors in order to satisfy the safety of the electrical installation.

541.2 Normative references

The following referenced documents are indispensable for the application of this document.

For dated references, only the edition cited applies. For undated references, the latest edition of

the referenced document (including any amendments) applies.

GB/T 16895.10-2010 Low-voltage electrical installations - Part 4-44. Protection for safety
- Protection against voltage disturbances and electromagnetic disturbances (IEC 60364-4-
44.2007, IDT)

GB/T 16895.18-2010 Electrical installations of buildings - Part 5-51. Selection and
erection of electrical equipment - Common rules (IEC 60364-5-51.2005, IDT)

GB/T 16895.21-2011 Low-voltage electrical installations - Part 4-41. Protection for safety
- Protection against electric shock (IEC 60364-4-41.2005, IDT)

GB/T 17045-2008 Protection against electric shock - Common aspects for installation and
equipment (IEC 61140.2001, IDT)

GB/T 21714.3-2008 Protection against lightning - Part 3. Physical damage to structures
and life hazard (IEC 62305-3.2006, IDT)

IEC 60439-2, Low-voltage switchgear and controlgear assemblies - Part 2. Particular
requirements for busbar trunking systems (busways)

IEC 60724, Short-circuit temperature limits of electric cables with rated voltages of 1 kV
($U_m = 1.2$ kV) and 3 kV ($U_m = 3.6$ kV)

IEC 60909-0, Short-circuit currents in three-phase A.C. systems - Part 0. Calculation of
currents

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