MALAYSIAN STANDARD

MS IEC 60664-5:2014

Insulation coordination for equipment within low-voltage systems - Part 5: Comprehensive method for determining clearances and creepage distances equal to or less than 2 mm (IEC 60664-5:2007, IDT)

ICS: 29.080.30

Descriptors: insulation, coordination, low-voltage systems, clearances, creepage

DEPARTMENT OF STANDARDS MALAYSIA

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NOTE: Technical corrigenda are not to correct errors which can be assumed to have no consequences in the application of the MS, for example minor printing errors.

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Committee representation

The Industry Standards Committee on Generation, Transmission and Distribution of Energy (ISC E) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Association of Consulting Engineers Malaysia
Atomic Energy Licensing Board
Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Kerja Raya Malaysia
Malaysian Association of Standards Users
Malaysian Cable Manufacturers Association
Malaysian Electrical Appliances and Distributors Association
Malaysian Green Technology Corporation
Ministry of Domestic Trade, Co-operatives and Consumerism
Ministry of International Trade and Industry
Persatuan Kontraktor Elektrikal dan Mekanikal Melayu Malaysia
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
Suruhanjaya Komunikasi dan Multimedia Malaysia
Suruhanjaya Tenaga
Tenaga Nasional Berhad
The Electrical and Electronics Association of Malaysia
The Institution of Engineers, Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Electrical Installation, Protection and Insulation Practice which supervised the adoption of the IEC Standard as Malaysian Standard is managed by The Electrical and Electronics Association of Malaysia in its capacity as an authorised Standards-Writing Organisation and consists of representatives from the following organisations:

Association of Consulting Engineers Malaysia
EITA Resources Sdn Bhd
G.H. Liew Engineering (1990) Sdn Bhd
Jabatan Bomba dan Penyelamat Malaysia
Jabatan Kerja Raya Malaysia
Sabah Electricity Sdn Bhd
Sarawak Electricity Supply Corporation
SIRIM QAS International Sdn Bhd
Suruhanjaya Tenaga
Technip Geoproduction (M) Sdn Bhd
Tenaga Nasional Berhad (Distribution Division)
Tenaga Nasional Berhad (Generation Division)
The Electrical and Electronics Association of Malaysia (Secretariat)
Time Era Sdn Bhd
Universiti Malaya
Universiti Teknologi Malaysia

The Working Group on Cable Lugs, Tools and Dies which recommended the adoption of the IEC Standard as Malaysian Standard consists of representatives from the following organisation:

The Electrical and Electronics Association of Malaysia (Secretariat)
The Institution of Engineers, Malaysia
UCSI University

National foreword

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Working Group on Cable Lugs, Tools and Dies under the authority of the Industry Standards Committee on Generation, Transmission and Distribution of Energy. Development of this standard was carried out by The Electrical and Electronics Association of Malaysia which is the Standards-Writing Organisation (SWO) appointed by SIRIM Berhad to develop standards for electrical installation, protection and insulation practice.

This Malaysian Standard is identical with IEC 60664-5:2007, *Insulation coordination for equipment within low-voltage systems - Part 5: Comprehensive method for determining clearances and creepage distances equal to or less than 2 mm*, published by the International Electrotechnical Commission (IEC). However, for the purposes of this Malaysian Standard, the following apply:

a) in the source text, "this International Standard" should read "this Malaysian Standard";

b) the comma which is used as a decimal sign (if any), to read as a point;

c) IEC 60664-5 is printed in English and French languages. However, only the English version is incorporated for the purpose of this Malaysian Standard; and

d) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

Referenced International Standards	Corresponding Malaysian Standards
IEC 60364-5-51, *Electrical installations of buildings - Part 5-51: Selection and erection of electrical equipment - Common rules*	MS IEC 60364-5-51, *Electrical installations of buildings - Part 5-51: Selection and erection of electrical equipment - Common rules*
IEC 60664-1, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests*	MS IEC 60664-1, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests*
IEC 60721-3-7, *Classification of environmental conditions - Part 3-7: Classification of groups of environmental parameters and their severities - Portable and non-stationary use*	MS IEC 60721-3-7, *Classification of environmental conditions - Part 3-7: Classification of groups of environmental parameters and their severities - Portable and non-stationary use*
IEC 60721-3-9, *Classification of environmental conditions - Part 3-9: Classification of groups of environmental parameters and their severities - Microclimates inside products*	MS IEC 60721-3-9, *Classification of environmental conditions - Part 3-9: Classification of groups of environmental parameters and their severities - Microclimates inside products*

National foreword *(continued)*

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, and wording (or is an identical translation) of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and structure although it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21-1.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS –

Part 5: Comprehensive method for determining clearances and creepage distances equal to or less than 2 mm

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60664-5 has been prepared by IEC technical committee 109: Insulation coordination for low-voltage equipment.

This second edition cancels and replaces the first edition, published in 2003 and constitutes a technical revision.

The revision of Part 1 of IEC 60664 also required a revision of Part 5 of IEC 60664, as Part 5 is closely linked to Part 1. In addition to a number of editorial improvements, the following major technical changes made in Part 1 also apply for Part 5:

- Amendment of Japanese mains conditions with regard to the rated impulse voltages, the rationalized voltages and the nominal voltages of supply systems for different modes of overvoltage control.
- Amendment of dimensioning of clearances smaller than 0,01 mm.

- Alignment of the table and the corresponding formula regarding test voltages for verifying clearances at different altitudes.
- Amendment of interpolation of the creepage distance values for functional insulation.
- Revision of the former Clause 4 "Tests and measurements" (now Clause 6) to achieve a more detailed description of the tests and their purpose, the test equipment and possible alternatives.

It has the status of a basic safety publication in accordance with IEC Guide 104.

It is to be used in conjunction with IEC 60664-1.

NOTE For the purposes of this standard, all references to IEC 60664-1 are written as “to Part 1”. Where a subclause is cited without reference to a Part, it is assumed that the reference is to the current Part 5.

The text of this standard is based on the following documents:

CDV	Report on voting
109/61/CDV	109/63/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60664 series, under the general title *Insulation coordination for equipment within low-voltage systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.