NEGARA BRUNEI DARUSALAM

BRUNEI DARUSSALAM STANDARD
PIAWAI BRUNEI DARUSSALAM

PBD IEC 60364-1:2005
IEC 60364-1:2005
Edition 5

LOW-VOLTAGE ELECTRICAL INSTALLATIONS - PART 1: FUNDAMENTAL PRINCIPLES, ASSESSMENT OF GENERAL CHARACTERISTICS, DEFINITIONS

ENERGY DIVISION, PRIME MINISTER'S OFFICE
IN COLLABORATION WITH MINISTRY OF DEVELOPMENT
NEGARA BRUNEI DARUSSALAM

FOREWORD

This Brunei Darussalam Electrical Standard was prepared by the Technical Committee on Electrical Standards (TECO), Energy Division at Prime Minister's Office in collaboration with the Authority for Building and Construction Industry (ABCi), Ministry of Development, Brunei Darussalam with the objective of developing the National Electrical Standards for electrical products, systems, equipments and facilities for the local industry and consumers with reference to international standards, guidelines and procedures. In developing the national electrical standards, the aim is to promote quality, technical integrity, health, safety and environmental standards for the local industries and consumers.

This Brunei Darussalam Electrical Standard is an adoption of the International Electro Technical Commission IEC 60364-1: 2005 (Edition 5) standard and implements it as the Brunei Darussalam National Standard.

Attention is drawn to the fact that this Brunei Darussalam Electrical Standard does not confer any immunity from legal obligations in any contract for compliance to the Standard.

The National Electrical Standards are subject to periodical review according to the current needs of the local industries and consumers to keep abreast of progress in the industries and consumers concerned. Suggestions of amendments will be recorded and in due course brought to the notice of the committees concerned.

COMMITTEE MEMBERS

The Technical Committee on Electrical Standards (TECO) was tasked by the Energy Division at the Prime Minister's Office in collaboration with the Authority for Building and Construction Industry (ABCi), Ministry of Development, Brunei Darussalam for the preparation of this Brunei Darussalam Electrical Standard. The members of the Technical Committee are as follows:

1. Awg Haji Abd Shawal Yaman (Chairman)	Department of Electrical Services, PMO
2. Awg Liaw Wai Khiong (Co-Chairman)	Brunei Shell Petroleum Co. Sdn Bhd / Institution of Engineering and Technology, Brunei Darussalam
3. Pg Shaharuddin Pg Haji Yusoff (Secretary)	ABCi, Ministry of Development
4. Awg William Voon (Assistant Secretary 1)	Berakas Power Management Company,
5. Awg Simon K A Leong (Assistant Secretary 2)	KR Kamarulzaman & Associates
6. Awg Haji Md Azrul Azrin Hj Md Zain	Department of Electrical Services, PMO
7. Awg Md Amir Sharifuddin Haji Ali	Department of Electrical Services, PMO
8. Awg Khairul Ezam Hj Mohd Zain	ABCi, Ministry of Development
9. Awg Dennis Wong Tet Yin	Department of Mechanical & Electrical Services, PWD
10. Awg Nohi Irwan Surkarki Haji Pawi	Department of Fire & Rescue Services
11. Awg Haji Morsidi Haji Kassim	Institut Teknologi Brunei
12. Awg Haji Ismit Haji Mohamad	Institut Teknologi Brunei
13. Awg Matyassin Haji Masri	Maktab Kejuruteraan Jefri Bolkiah
14. Awg Sylvester Kong	Brunei Shell Petroleum Co. Sdn Bhd
15. Dyg Seri Malati OKIP Hj Zolkeflee	Brunei Shell Petroleum Co. Sdn Bhd
16. Awang Aristoteles Momin	Brunei LNG Sdn Bhd
17. Awg Rick Liaw	Hamzah Hassan Consultant

SUB-COMMITTEE NO. 5 MEMBERS

The Sub-Committee No. 5 (SC5) is the working groups for the Electrical Wiring Code of Practice who assisted in the preparation for the adoption of the Brunei Darussalam Electrical Standard. The members of the Sub-Committee No. 5 are :

1. Awg William Voon (Chairman)	Berakas Power Management Company,
2. Awg Liaw Wai Khiong (Secretary)	Brunei Shell Petroleum Co. Sdn Bhd Institution of Engineering and Technology, Brunei Darussalam
3. Pg Shaharuddin Pg Haji Yusoff	ABCi, Ministry of Development
4. Awg Khairul Ezam Hj Mohd Zain	ABCi, Ministry of Development
5. Awg Simon K A Leong	KR Kamarulzaman & Associates
6. Awg Dennis Wong Tet Yin	Department of Mechanical & Electrical Services, PWD
7. Dr Rohaniyati Salleh	Department of Mechanical & Electrical Services, PWD
8. Dyg Hajah Norhayati binti Ahmad	Department of Electrical Services, PMO
9. Awg Abdul Azia bin Abdullah	Department of Electrical Services, PMO
10. Awg Matyassin Haji Masri	Institut Teknologi Brunei
11. Awg Haji Morsidi Haji Kassim	Maktab Kejuruteraan Jefri Bolkiah
12. Awg Tony Ng	PKS Sdn Bhd
13. Awg N. Sivakumar	LKH (B) Sdn Bhd
14. Awg Tan Tau Minn	SEC Mashibah Sdn Bhd

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INTERNATIONAL STANDARD

Low-voltage electrical installations –
Part 1: Fundamental principles, assessment of general characteristics, definitions

CONTENTS

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 1: Fundamental principles, assessment of general characteristics, definitions

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 60364-1 has been prepared by IEC Technical Committee 64: Electrical installations and protection against electric shock.

This fifth edition cancels and replaces the fourth edition, published in 2001. It constitutes a technical revision.

The main changes with respect to the previous edition are:

- in order to complete the scope, the new items external lighting and similar installations, medical locations, mobile or transportable units, photovoltaic power supply units and low-voltage generating sets are added;
- in Clause 131, "Fundamental principles", the list of hazards which may arise in electrical installations is completed; furthermore, a new subclause dealing with protection against voltage disturbances and measures against electromagnetic influences and a new subclause dealing with protection against power supply interruption are added;

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

- in Clause 132, "Design", the new subclause "Documentation for the electrical installation" is added;
- in Clause 134, "Erection and verification of electrical installations", the new subclause " periodic verification" is added;
- the former Clause 312, "Types of distribution system" is renamed "Conductor arrangement and system earthing" and, in the relevant subclauses, several new figures are included for better understanding of the different kind of a.c. and d.c. circuits and types of systems and their earthing being applied nowadays in IEC member countries;
- in 33.1, "Compatibility of characteristics", a new item for excessive PE conductor currents is added;
- a new Clause 36, "Continuity of service", is included;
- Annex B is aligned with the second edition of IEC 60050-826:2004.

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

FDIS	Report on voting
64/1488/FDIS	64/1499/RVD

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.

IEC 60364 consists of the following parts, under the general title *Low-voltage electrical installations:*

Part 1: Fundamental principles, assessment of general characteristics, definitions

Part 4: Protection for safety

Part 5: Selection and erection of electrical equipment

Part 6: Verification

Part 7: Requirements for special installations or locations

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.

The contents of the corrigendum of August 2009 have been included in this copy.

PBD IEC 60364-1: 2010 (Published by IEC in 2005)

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 1: Fundamental principles, assessment of general characteristics, definitions

11 Scope [1]

IEC 60364-1 gives the rules for the design, erection, and verification of electrical installations. The rules are intended to provide for the safety of persons, livestock and property against dangers and damage which may arise in the reasonable use of electrical installations and to provide for the proper functioning of those installations.

11.1 IEC 60364-1 applies to the design, erection and verification of electrical installations such as those of

a) residential premises;

b) commercial premises;

c) public premises;

d) industrial premises;

e) agricultural and horticultural premises;

f) prefabricated buildings;

g) caravans, caravan sites and similar sites;

h) construction sites, exhibitions, fairs and other installations for temporary purposes;

i) marinas;

j) external lighting and similar installations (see, however ,11.3e));

k) medical locations;

l) mobile or transportable units;

m) photovoltaic systems;

n) low-voltage generating sets.

NOTE "Premises" covers the land and all facilities including buildings belonging to it.

11.2 IEC 60364-1 covers

a) circuits supplied at nominal voltages up to and including 1 000 V a.c. or 1 500 V d.c.;

   For a.c., the preferred frequencies which are taken into account in this standard are 50 Hz, 60 Hz and 400 Hz. The use of other frequencies for special purposes is not excluded.

b) circuits, other than the internal wiring of apparatus, operating at voltages exceeding 1 000 V and derived from an installation having a voltage not exceeding 1 000 V a.c., for example, discharge lighting, electrostatic precipitators;

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[1] The numbering system is explained in Annex A.