

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Low-voltage electrical installations –
Part 7-710: Requirements for special installations or locations – Medical
locations**

**Installations électriques à basse tension –
Partie 7-710: Exigences pour les installations ou emplacements spéciaux –
Locaux à usages médicaux**



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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
710 Medical locations.....	7
710.1 Scope	7
710.2 Normative references	7
710.3 Terms and definitions.....	8
710.30 Assessment of general characteristics	11
710.31 Purposes, supplies and structure	11
710.313 Supplies.....	11
710.314 Division of installation	12
710.41 Protection for safety – Protection against electric shock.....	12
710.411 Protective measure: automatic disconnection of supply.....	12
710.414 Protective measure: extra-low-voltage provided by SELV and PELV	14
710.415 Additional protection	14
710.42 Protection for safety – Protection against thermal effects	15
710.421 Protection against fire caused by electrical equipment	15
710.44 Protection for safety – Protection against voltage disturbances and electromagnetic disturbances	15
710.444 Measures against electromagnetic influences	15
710.51 Selection and erection of electrical equipment – Common rules	16
710.512 Operational conditions and external influences	17
710.514 Identification	17
710.52 Selection and erection of electrical equipment – Wiring systems	18
710.53 Selection and erection of electrical equipment – Devices for protection for safety, isolation, switching, control and monitoring.....	19
710.531 Equipment for protection against electric shock.....	19
710.535 Co-ordination of protective devices	20
710.536 Isolation and switching.....	20
710.537 Monitoring.....	20
710.55 Selection and erection of electrical equipment – Other equipment.....	21
710.559 Luminaires and lighting installations.....	21
710.56 Selection and erection of electrical equipment – Safety services.....	21
710.6 Verification.....	24
Annex A (informative) Examples of allocation of group numbers and classification for an electric supply system for safety services of medical locations.....	27
Annex B (informative) Guidance concerning electromagnetic interferences (EMI)	28
Annex C (informative) List of notes concerning certain countries (exceptions)	29
Bibliography.....	39
Figure 710.1 – Example of a patient environment	26
Table A.710.1 – List of examples of medical locations and their group classification (guideline)	27
Table B.710.1 – Minimum distances.....	28

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –**Part 7-710: Requirements for special installations or locations –
Medical locations****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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IEC 60364-7-710 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock. It is an International Standard.

This second edition cancels and replaces the first edition published in 2002. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the scope provides improved information to the application of this document;
- b) some terms and definitions have been revised;
- c) the validity of the respective parts of the IEC 60364 series has been verified and clauses updated;
- d) Clause 710.30 has been extended;

- e) Clause 710.41 has been updated;
- f) Clause 710.413 has been renumbered as Clause 710.411;
- g) in 710.411 insulation fault location systems have been added;
- h) Clause 710.421 has been extended to include arc fault detection devices;
- i) Clause 710.44 has been added;
- j) Clause 710.51 has been updated and now covers distribution boards and electrical operating areas;
- k) Clause 710.514, has been extended and includes separate subclauses on diagrams, documentation and operating instructions;
- l) Subclauses 710.531 to 710.537 have been added;
- m) Clause 710.55 has been updated;
- n) Clause 710.56 has been added;
- o) Clause 710.6, Verification, has been revised;
- p) Annex A was deleted, and the contents integrated into 710.560.4;
- q) former Annex B is now Annex A and has been updated;
- r) an informative Annex B on guidance concerning electromagnetic interferences (EMI) in installations of buildings has been added.

The text of this International Standard is based on the following documents:

Draft	Report on voting
64/2480/FDIS	64/2482/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 60364 series, published under the general title *Low-voltage electrical installations*, can be found on the IEC website.

The reader's attention is drawn to the fact that Annex C lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

INTRODUCTION

For the purpose of this part of IEC 60364 (IEC 60364-7-710) the requirements of the general Parts 1 to 6 and Part 8 of IEC 60364 apply.

The IEC 60364-7-7XX parts of IEC 60364 contain particular requirements for special installations or locations which are based on the requirements of the general parts of IEC 60364 (IEC 60364-1 to IEC 60364-6 and IEC 60364-8). These IEC 60364-7-7XX parts are considered in conjunction with the requirements of the general parts.

The particular requirements of this part of IEC 60364 supplement, modify or replace certain of the requirements of the general parts of IEC 60364 being valid at the time of publication of this part. The absence of reference to the exclusion of a part or a clause of a general part means that the corresponding clauses of the general part are applicable (undated references).

Requirements of other 7XX parts being relevant for installations covered by this part also apply. This part may therefore also supplement, modify or replace certain of these requirements valid at the time of publication of this part.

The clause numbering of this part follows the pattern and corresponding references of IEC 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of the other parts of the IEC 60364 series, valid at the time of publication of this part, as indicated in the normative references of this document (dated references).

If requirements or explanations additional to those of the other parts of the IEC 60364 series are needed, the numbering of such items appears as 710.101, 710.102, 710.103, etc.

In the case where new or amended general parts with modified numbering were published after this part was issued, the clause numbers referring to a general part in this Part 710 may no longer align with the latest edition of the general part. Dated references should be observed.

The particular requirements of this document apply to the electrical installations in medical locations.

The clause numbering following 710 are those of the corresponding parts or clauses of IEC 60364. The absence of reference to a part or a clause means that all parts of IEC 60364 are applicable.

In medical locations patients are likely to be subjected to the application of medical electrical (ME) equipment. Measures for the safety of patients and medical staff need to be enhanced due to:

- i) the reduction in body resistance, since the skin is often cut or broken;
- ii) the risk associated with loss of supply, especially to life supporting equipment;
- iii) the increased risk of electric shock due to the presence of liquids, such as blood, saline and water (e.g. for irrigation).

Items (i) and (ii) affect the patient, whereas item (iii) affects the patient and medical staff.

For every activity and function in a medical location, the particular requirements for safety, including protection against electric shock and continuity of supply, need to be considered.

Safety can be achieved by the application of this document and the safe operation and maintenance of ME equipment.

Variations of this document to further enhance safety and reliability are acceptable.

Annex C provides a statement about the inclusion of text concerning particular conditions that are existing in certain countries and that state exceptions to the respective subclauses.

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-710: Requirements for special installations or locations – Medical locations

710 Medical locations

710.1 Scope

The particular requirements of this part of IEC 60364 apply to electrical installations in medical locations so as to provide safety of patients and medical staff. These requirements refer to:

- hospitals and clinics or equivalent institutions (including equivalent transportable and mobile locations);

which, subject to assessment (710.30), can also include:

- sanatoriums and health clinics;
- dedicated locations in homes for senior citizens and aged care homes, where patients receive medical care;
- medical centres, outpatients' clinics and departments, casualty wards;
- other outpatients' institutions (industrial, sports and others);
- medical and dental practices;
- dedicated medical rooms in the workplace;
- other locations where medical electrical equipment is used;
- veterinary clinics;
- rooms in existing installations where a change of utilization for medical applications occur.

This list is not exhaustive.

The requirements of this document do not apply to ME equipment or ME systems.

NOTE 1 ME equipment and ME systems are covered by IEC 60601 (all parts).

NOTE 2 In the USA, the requirements of NFPA 70[®], National Electrical Code[®] in general and specifically article 517 (Healthcare Facilities) apply.

710.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60050-826, *International Electrotechnical Vocabulary – Part 826: Electrical installations* (available at <http://www.electropedia.org>)

IEC 60364-1:2005, *Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*
IEC 60364-4-41:2005/AMD1:2017

IEC 60364-4-42:2010, *Low-voltage electrical installations – Part 4-42: Protection for safety – Protection against thermal effects*
IEC 60364-4-42:2010/AMD1:2014

IEC 60364-4-44:2007, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*
IEC 60364-4-44:2007/AMD1:2015
IEC 60364-4-44:2007/AMD2:2018

IEC 60364-5-51:2005, *Electrical installations of buildings – Part 5-51: Selection and erection of electrical equipment – Common rules*

IEC 60364-5-52:2009, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

IEC 60364-5-53:2019, *Low-voltage electrical installations – Part 5-53: Selection and erection of electrical equipment – Devices for protection for safety, isolation, switching, control and monitoring*
IEC 60364-5-53:2019/AMD1:2020

IEC 60364-5-56:2018, *Low-voltage electrical installations – Part 5-56: Selection and erection of electrical equipment – Safety services*

IEC 60364-6:2016, *Low voltage electrical installations – Part 6: Verification*

IEC 60947-6-1, *Low-voltage switchgear and controlgear – Part 6-1: Multiple function equipment – Transfer switching equipment*

IEC 61439 (all parts), *Low-voltage switchgear and controlgear assemblies*

IEC 61557-8:2014, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 8: Insulation monitoring devices for IT systems*

IEC 61557-9:2014, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 9: Equipment for insulation fault location in IT systems*

IEC 61558-2-15, *Safety of transformers, reactors, power supply units and combinations thereof – Part 2-15: Particular requirements and tests for isolating transformers for the supply of medical locations*

710.3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-826, IEC 60364-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

710.3.1

medical location

location intended for purposes of diagnosis, treatment, monitoring and care of patients