

# TECHNICAL SPECIFICATION

---

**Low-voltage electrical installations -  
Part 7-725: Requirements for special installations or locations - Resilient power  
supply system**

get full document from [standards.iteh.ai](https://standards.iteh.ai)



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2026 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

#### IEC publications search -

[webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

#### IEC Products & Services Portal - [products.iec.ch](http://products.iec.ch)

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

FOREWORD .....	3
INTRODUCTION .....	5
725 Resilient power supply system .....	6
725.1 Scope .....	6
725.2 Normative references.....	6
725.3 Terms and definitions .....	6
725.31 Purposes, supplies and structure .....	7
725.312 Conductor arrangement and system earthing .....	7
725.313 Supplies .....	7
725.314 Division of installation .....	7
725.36 Continuity of service .....	7
725.5 Selection and erection of electrical equipment.....	7
725.51 Common rules.....	7
725.512 Operational conditions and external influences .....	7
725.52 Wiring systems.....	9
725.522 Selection and erection of wiring systems in relation to external influences.....	9
725.55 Other equipment .....	9
725.6 Verification .....	10
Annex A (informative) Reference for non-specific disaster .....	11
A.1 Examples of systems .....	11
A.2 Example of connected loads .....	14
Annex B (informative) Reference for earthquake-specific disaster.....	16
B.1 Calculation of seismic force of electrical equipment and method to support and fix it .....	16
B.2 Installation example of a wiring installation.....	20
Annex C (informative) Reference for flood damage-specific disaster .....	23
C.1 Power supplies and switchboards.....	23
C.2 Electrical equipment.....	23
C.3 Wiring systems.....	23
Annex D (informative) List of notes concerning certain countries .....	24
Bibliography.....	25
Figure A.1– Example of a system that switches from TT to the TN system during independent operation .....	12
Figure A.2 – Example of a system where supply diversity has been improved.....	13
Figure B.1 – Example of calculating anchor bolts loads .....	19
Figure B.2 – Example of seismic support for horizontal piping, etc.....	20
Figure B.3 – Example of installation of underground service cable to a building .....	22
Figure B.4 – Example of wiring installation at an expansion joint .....	22
Table A.1 – ‘Communication sheet’ to decide a specification of respective rooms in a building in normal times and a performance in time of disaster.....	15
Table B.1 – Standard seismic intensity for design ( $K_S$ ) .....	16
Table B.2 – Correlation table of zone factor ( $Z$ ) for peak ground acceleration (PGA).....	17

Table B.3 – Examples of specific facilities.....	18
Table B.4 – Guideline of seismic class to importance of facility and equipment .....	18
Table B.5 – Horizontal conduits, application of seismic support.....	21
Table D.1 – Notes concerning certain countries .....	24

# Sample Document

get full document from [standards.iteh.ai](https://standards.iteh.ai)

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Low-voltage electrical installations -  
Part 7-725: Requirements for special installations or locations -  
Resilient power supply system**

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC TS 60364-7-725 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
64/2772/DTS	64/2816A/RVDTS

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 Technical Specification 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/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 D 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 [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

# Sample Document

get full document from [standards.iteh.ai](http://standards.iteh.ai)

## INTRODUCTION

For the purpose of this part of IEC 60364 (IEC 60364-7-725) the requirements of the general Parts 1, 4, 5, 6 and 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 document also apply. This document can therefore also supplement, modify or replace certain of these requirements valid at the time of publication of this document.

The clause numbering of this document follows the pattern and corresponding references of IEC 60364. The numbers following the particular number of this document 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 document, 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 725.101, 725.102, 725.103, etc. In the case where new or amended general parts with modified numbering were published after this document was issued, the clause numbers referring to a general part in this document will possibly no longer align with the latest edition of the general part. Dated references should be observed.

The clause numbers following 725 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.

## 725 Resilient power supply system

### 725.1 Scope

This part of IEC 60364 provides additional requirements for the design, erection and verification of electrical installations applicable for resilient power supply systems that must be operational in a time of disaster. It specifies additional requirements for

- generating sets,
- a circuit concerning external generating sets, and
- circuits of an installation to be supplied

so as to prevent or limit the effects of a natural disaster such as

- earthquake,
- flood damage, or
- wind hazard (e.g. tropical cyclone such as hurricane, typhoon).

### 725.2 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 60364-1:2005, *Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions*

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

IEC 60364-5-52, *Electrical installations of buildings - Part 5-52: Selection and erection of electrical equipment - Wiring systems*

IEC 60364-5-55, *Electrical installations of buildings - Part 5-55: Selection and erection of electrical equipment - Other equipment*

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

### 725.3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

#### 725.3.1

##### **essential load**

current-using equipment intended to be supplied even during or after a natural disaster

**725.31 Purposes, supplies and structure****725.312 Conductor arrangement and system earthing****725.312.2 Type of system earthing****725.312.2.101 Electric system according to operating modes**

Where the type of earthing system of the network is different from the type of system earthing of the local source, protection for safety shall be effective for each operational source.

NOTE An example of the transition from grid connected mode supplied by a TT system to island mode supplied by a local source in a TN system is given in Figure A.1.

**725.313 Supplies****725.313.101 Connection of external supplies**

In addition to the provision of a suitable means of earthing, consideration should be given to the provision of connections which allow the rapid connection of external supplies.

**725.314 Division of installation****725.314.101**

For the division of installation, the following requirements shall be fulfilled.

- The power supply shall achieve the reliability required in island mode operation, e.g. by having multiple distributed power sources connected in parallel.
- The installation shall be configured so that a fault of one or more of its power sources will not likely result in an entire failure of the power supply.
- The current-using equipment, devices and supplies of the installation intended to be used during a disaster shall be installed in such a way that they can be quickly maintained, repaired or replaced.
- The circuits to be supplied in the event of a natural disaster shall be identified.

NOTE Annex A provides examples of systems which satisfy the requirements.

**725.36 Continuity of service**

After a disaster occurs, circuits supplying essential loads shall be re-energized within a time that is decided according to the nature of each essential load.

**725.5 Selection and erection of electrical equipment****725.51 Common rules**

NOTE Requirements for electrical and mechanical characteristics for the selection and erection of electrical equipment against wind hazard and floods are under consideration.

**725.512 Operational conditions and external influences****725.512.2 External influences**

**725.512.2.101** Installed electrical equipment shall have an AP rating of at least that required by the location at which it is installed. For electrical equipment installed in a building, the storey level where the electrical equipment is installed shall also be taken into account. Otherwise, the minimum required AP level shall be assumed to be AP3.

Where the acceleration factor is known, the minimum AP level shall be selected according to the place where the resilient power supply system is installed. Otherwise, the minimum AP level shall be AP3.