

INTERNATIONAL STANDARD

IEC
60364-7-705

Second edition
2006-07

Low-voltage electrical installations –

Part 7-705:

**Requirements for special installations or
locations –**

Agricultural and horticultural premises

(<https://standards.iteh.ai>)
Document Preview

[IEC 60364-7-705:2006](https://standards.iteh.ai/catalog/standards/iec/f24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006)

<https://standards.iteh.ai/catalog/standards/iec/f24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006>

*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*



Reference number
IEC 60364-7-705:2006(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is also available from the following:

- **IEC Web Site** (www.iec.ch)

- **Catalogue of IEC publications**

The on-line catalogue on the IEC web site (www.iec.ch/searchpub) enables you to search by a variety of criteria including text searches, technical committees and date of publication. On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.

- **IEC Just Published**

This summary of recently issued publications (www.iec.ch/online_news/justpub) is also available by email. Please contact the Customer Service Centre (see below) for further information.

- **Customer Service Centre**

If you have any questions regarding this publication or need further assistance, please contact the Customer Service Centre: custserv@iec.ch

Email: custserv@iec.ch

Tel: +41 22 919 02 11

Fax: +41 22 919 03 00

<https://standards.iteh.ai/catalog/standards/iec/124b0e54-0cd5-4932-b168-3922c1597618/iec-60364-7-705-2006>

INTERNATIONAL STANDARD

IEC
60364-7-705

Second edition
2006-07

Low-voltage electrical installations –

Part 7-705:

Requirements for special installations or locations –

Agricultural and horticultural premises

(<https://standards.iteh.ai>)
Document Preview

[IEC 60364-7-705:2006](https://standards.iteh.ai/catalog/standards/iec/24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006)

<https://standards.iteh.ai/catalog/standards/iec/24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006>

© IEC 2006 Copyright - all rights reserved

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 the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CONTENTS

FOREWORD	7
INTRODUCTION.....	11
705.11 Scope.....	13
705.12 Normative references	13
705.20 Terms and definitions	15
705.312 Types of distribution system	17
705.312.2 Types of system earthing	17
705.312.2.1 TN systems	17
705.4.41 Protection against electric shock	17
705.411 Protective measure: automatic disconnection of supply	17
705.411.1 General	17
705.414 Protective measure: extra-low-voltage provided by SELF and PELV.....	17
705.414.4 Requirements for SELF and PELV circuits.....	17
705.415.2 Additional protection: supplementary protective equipotential bonding	17
705.4.42 Protection against thermal effects	19
705.422 Measures for protection against fire	19
705.4.43 Protection against overcurrent.....	19
705.433 Protection against overload current	19
705.443 Protection against overvoltages of atmospheric origin or due to switching	19
705.5.51 Selection and erection of electrical equipment – Common rules	21
705.512 Operational conditions and external influences.....	21
705.512.2 External influences	21
705.513 Accessibility	21
705.513.2 Accessibility by livestock	21
705.514 Identification.....	21
705.514.5 Diagrams.....	21
705.52 Selection and erection of electrical equipment – Wiring systems	23
705.522 Selection and erection of wiring systems in relation to external influences.....	23
705.522.16 Conduits, ducts and trunking systems	23
705.53 Selection and erection of electrical equipment – Isolation switching and control	25
705.536 Isolation and switching	25
705.536.2 Isolation	25

705.54	Selection and erection of electrical equipment – Earthing arrangements, protective conductors and protective bonding conductors	25
705.544	Protective bonding conductors (equipotential bonding conductors)	25
705.544.2	Protective bonding conductors for supplementary bonding	25
705.55	Selection and erection of electrical equipment – Other equipment	25
705.55.1	Socket-outlets	25
705.556	Safety services	27
705.556.8	Automatic life support for high density livestock rearing	27
705.559	Luminaires and lighting installations	27
Annex A (informative) Examples of equipotential bonding		29
Annex B (normative) Obstacles and placing out of reach		39
Annex C (normative) Protective measures for application only when the installation is controlled or under the supervision of skilled or instructed persons		41
Annex D (informative) List of Country Notes		43
Bibliography		45

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[IEC 60364-7-705:2006](https://standards.iteh.ai/catalog/standards/iec/t24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006)

<https://standards.iteh.ai/catalog/standards/iec/t24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

**Part 7-705: Requirements for special installations or locations –
Agricultural and horticultural premises**

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 nongovernmental 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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60364-7-705 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This second edition cancels and replaces the first edition published in 1984 and constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- introduction of new requirements concerning location for high density livestock rearing;
- introduction of requirements for residences and other locations belonging to agricultural and horticultural premises;

- additional requirements for electrical equipment such as: wiring system, luminaires, socket-outlets, used in severe environment where risk of fire, and mechanical damage may occur;
- protection by RCD is required for final circuits.

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

FDIS	Report on voting
64/1527/FDIS	64/1532/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.

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 standard.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the new edition.

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 amendment and the base 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.

INTRODUCTION

The requirements of this part of IEC 60364 supplement, modify or replace certain of the general requirements contained in Parts 1 to 6 of IEC 60364.

The clause numbering appearing after 705 refers to the corresponding parts or clauses of IEC 60364, Parts 1 to 6. Numbering of clauses does not, therefore, necessarily follow sequentially. Numbering of figures and tables takes the number of this part followed by a sequential number.

The absence of reference to a part or a clause means that the general requirements contained in Parts 1 to 6 of IEC 60364 are applicable.

For products used in agricultural and horticultural premises presenting risk of hazardous atmospheres due to combustible gas and/or dust, the IEC 60079 series and the IEC 61241 series apply.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[IEC 60364-7-705:2006](https://standards.iteh.ai/catalog/standards/iec/24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006)

<https://standards.iteh.ai/catalog/standards/iec/24b0e54-0cf5-4932-b168-3922c1597618/iec-60364-7-705-2006>

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-705: Requirements for special installations or locations – Agricultural and horticultural premises

705.11 Scope

The requirements of this part of IEC 60364 apply to fixed electrical installations inside and outdoors of agricultural and horticultural premises. Some of the requirements are also applicable to other locations that are in common buildings belonging to the agricultural and horticultural premises.

Rooms, locations and areas for household applications and similar are not covered by this standard.

If some of the special requirements of Part 705 are also applicable for residences and other locations in such common buildings this is stated in the normative text.

705.12 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.

IEC 60309-1, *Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements*

IEC 60309-2, *Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories*

IEC 60335-2-71, *Household and similar electrical appliances – Safety – Part 2-71: Particular requirements for electrical heating appliances for breeding and rearing animals*

IEC 60364-5-53, *Low-voltage electrical installations of buildings – Part 5-53: Selection and erection of electrical equipment – Isolation, switching and control*

IEC 60364-5-55, *Low voltage electrical installations – Part 5-55: Selection and erection of electrical equipment – Other equipment*

IEC 60598 (all parts), *Luminaires*

IEC 60598-2-24, *Luminaires – Part 2-24: Particular requirements – Luminaires with limited surface temperatures*

IEC 60884-1, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

IEC 61084-2-1, *Cable trunking and ducting systems for electrical installations – Part 2: Particular requirements – Section 1: Cable trunking and ducting systems intended for mounting on walls or ceilings*

IEC 61386-21, *Conduit systems for cable management – Part 21: Particular requirements – Rigid conduit systems*

705.20 Terms and definitions

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

705.20.1

agricultural and horticultural premises

rooms, locations or areas where

- livestock are kept;
- feed, fertilizers, vegetable and animal products are produced stored, prepared or processed;
- plants are grown, such as greenhouses.

NOTE In agricultural and horticultural premises special requirements for the selection and erection of electrical equipment apply due to special external influences, e.g. influence of moisture, dust, aggressive chemical vapours, acids or salts on electrical equipment. In addition an increased fire risk may exist due to the presence of highly flammable substances. Agricultural and horticultural premises include, for example:

- housing for animals such as cattle, pigs, horses, sheep, goats and chicken-houses including adjacent rooms (e.g. feed processing locations, milking-machine locations, milk-storage rooms);
- barns, stores and storerooms for hay, straw, feed, fertilizers, grain, potatoes, beets, vegetables, fruits, ornamental plants, fuels, greenhouses;
- locations where agricultural and horticultural products are produced and prepared and processed commercially and/or in bulk (drying, stewing, pressing out, fermenting, butchering, meat processing etc.).

705.20.2

residences and other locations belonging to agricultural and horticultural premises

residences and other locations which have a conductive connection to the agricultural and horticultural premises by either protective conductors of the same installation or by extraneous-conductive-parts

NOTE 1 Examples of other locations includes offices, social rooms, machine-halls, workrooms, garages, and shops.

NOTE 2 Extraneous-conductive-parts are not part of the electrical installation but are liable to introduce a dangerous electrical potential (see definition IEV 826-11-03 of IEC 60050-826).

NOTE 3 Examples of conductive connections are metal-pipe systems, protective conductors or metal sheaths of the same electrical wiring system.

705.20.3

high-density livestock rearing

breeding and rearing of livestock for which the use of automatic systems for life support is necessary

NOTE 1 Examples of automatic life support systems are those for ventilation, feeding and air-conditioning.

NOTE 2 Examples of high density rearing of livestock include: piggeries, chicken-houses, inland water fishery and artificial lake fish production.