

# INTERNATIONAL STANDARD

IEC  
**60364-4-42**

Second edition  
2001-08

## Electrical installations of buildings – Part 4-42: Protection for safety – Protection against thermal effects

*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.*



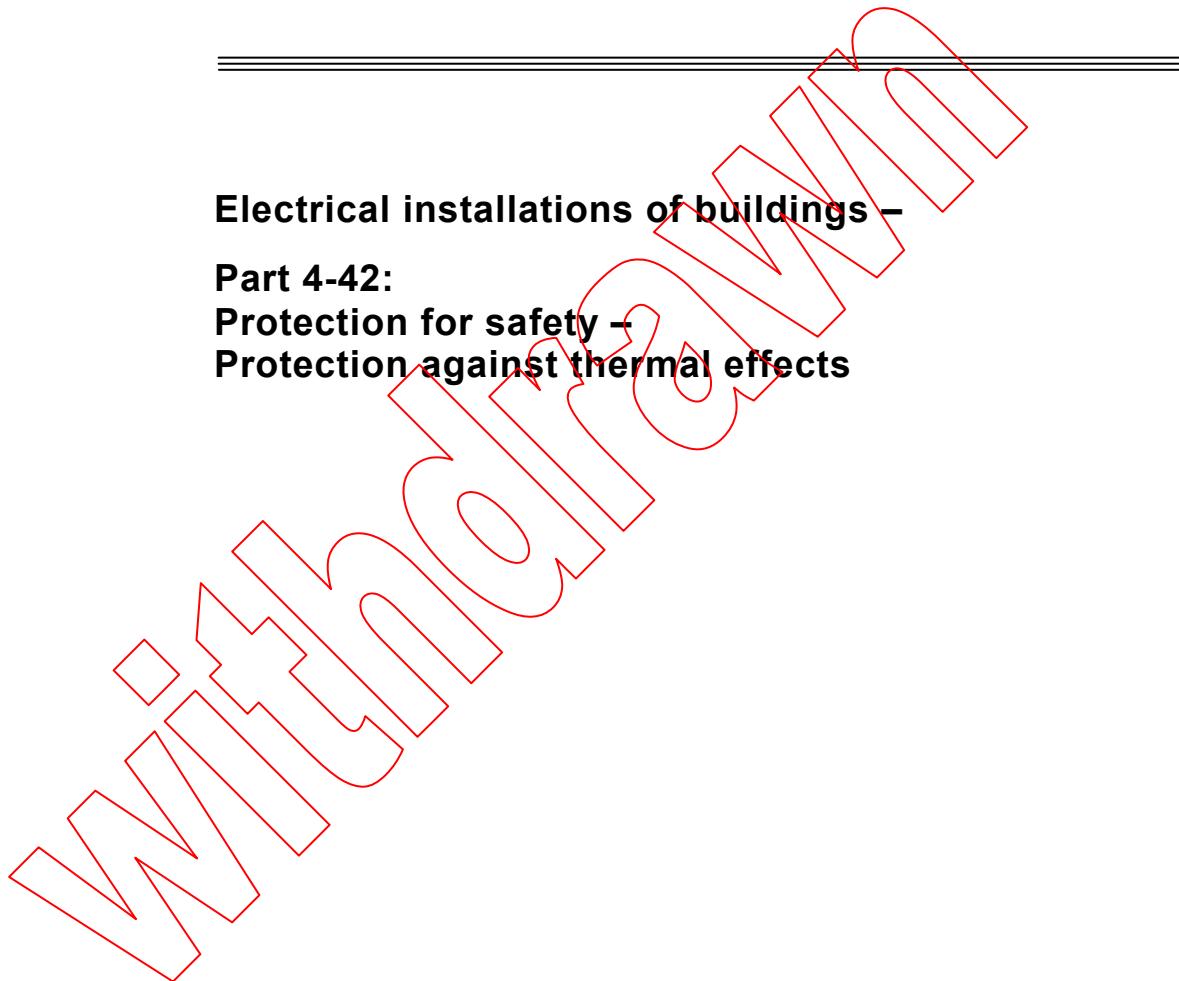
Reference number  
IEC 60364-4-42:2001(E)

# INTERNATIONAL STANDARD

IEC  
**60364-4-42**

Second edition  
2001-08

## **Electrical installations of buildings – Part 4-42: Protection for safety – Protection against thermal effects**



© IEC 2001 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](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

**M**

*For price, see current catalogue*

## CONTENTS

FOREWORD .....	5
420.1 Scope .....	7
420.2 Normative references .....	7
421 Protection against fire .....	9
422 Measures for protection against fire .....	11
422.1 General .....	11
422.2 Conditions of evacuation in an emergency .....	11
422.3 Nature of processed or stored materials .....	13
422.4 Combustible constructional materials .....	15
422.5 Fire propagating structures .....	15
423 Protection against burns.....	17
424 Protection against overheating .....	17
424.1 Forced air heating systems .....	17
424.2 Appliances producing hot water or steam .....	17
Annex A (informative) IEC 60364 – Parts 1 to 6: Restructuring .....	19
Table 42A – Temperature limits in normal service for accessible parts of equipment within arm's reach .....	17
Table A.1 – Relationship between restructured and original parts .....	19
Table A.2 – Relationship between new and old clause numbering.....	23

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### ELECTRICAL INSTALLATIONS OF BUILDINGS -

#### Part 4-42: Protection for safety - Protection against thermal effects

#### FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60364-4-42 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

The IEC 60364 series (parts 1 to 6), is currently being restructured, without any technical changes, into a more simple form (see annex A).

According to a unanimous decision by the Committee of Action (CA/1720/RV (2000-03-21)), the restructured parts of IEC 60364 have not been submitted to National Committees for approval.

The text of this second edition of IEC 60364-4-42 is compiled from and replaces

- part 4-42, first edition (1980),
- part 4-482, first edition (1982).

This publication has been drafted, as close as possible, in accordance with the ISO/IEC Directives, Part 3.

Annex A is for information only.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

## ELECTRICAL INSTALLATIONS OF BUILDINGS –

### Part 4-42: Protection for safety – Protection against thermal effects

#### 420.1 (421)<sup>1</sup> Scope

Persons, fixed equipment, and fixed materials adjacent to electrical equipment shall be protected against harmful effects of heat developed by electrical equipment, or thermal radiation, particularly the following effects:

- combustion or degradation of materials;
- risk of burns;
- impairment of the safe function of installed equipment.

NOTE Protection against overcurrent is dealt with in IEC 60364-4-43.

#### 420.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60364. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60364 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60079-14:1996, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines)*

IEC 60332-1:1993, *Tests on electric cables under fire conditions – Part 1: Tests on a single vertical insulated wire or cable*

IEC 60332-3-10:2000, *Tests on electric cables under fire conditions – Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables – Apparatus*

IEC 60332-3-21:2000, *Tests on electric cables under fire conditions – Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A F/R*

IEC 60332-3-22:2000, *Tests on electric cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A*

IEC 60332-3-23:2000, *Tests on electric cables under fire conditions – Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category B*

IEC 60332-3-24:2000, *Tests on electric cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C*

<sup>1</sup> In this standard, references in brackets refer to the previous numbering system.

IEC 60332-3-25:2000, *Tests on electric cables under fire conditions – Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category D*

IEC 60364-4-41: *Electrical installations of buildings – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-43: *Electrical installations of buildings – Part 4-43: Protection for safety – Protection against overcurrent*

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

IEC 60614 (all parts), *Conduits for electrical installations*

Withdrawn