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Low-voltage electrical installations - Part 7-704: Requirements for special installations or locations - Construction and demolition site installations

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Low-voltage electrical installations –

Part 7-704: Requirements for special installations or locations – Construction and demolition site installations

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-704: Requirements for special installations or locations – Construction and demolition site installations

FOREWORD

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International Standard IEC 60364-7-704 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 1989 and constitutes a technical revision.

The main changes with respect to the previous edition are as follows:

– circuits supplying 32 A rating or less socket-outlets, as well as the socket-outlets are to be protected by 30 mA RCDs;
– circuits supplying socket-outlets over 32 A rating to be protected by 500 mA RCDs.

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

FDIS	Report on voting
64/1477/FDIS	64/1492/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.

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 next 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 2: Void

Part 3: Void

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- withdrawn;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.

INTRODUCTION

The requirements of this part of IEC 60364 supplement, modify or replace certain of the general requirements of the other parts of IEC 60364.

The clause numbering of part 704 follows the pattern and corresponding references of IEC 60364. The numbers following the particular number of part 704 are those of the corresponding parts, or clauses of IEC 60364.

The absence of reference to a part, a clause or a subclause means that the corresponding general requirements are applicable.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-704: Requirements for special installations or locations – Construction and demolition site installations

704.1 Scope

The following requirements are added:

704.1.1 The special requirements of this part apply to temporary installations for construction and demolition sites during the period of the construction or demolition work, including for example the following:

– construction work of new buildings;
– repair, alteration, extension, demolition of existing buildings or parts of existing buildings;
– engineering works;
– earthworks;
– work of similar nature.

The requirements apply to fixed or moveable installations.

The rules do not apply to

– installations covered by the IEC 60621 series [1], where equipment of a similar nature to that used in surface mining applications is involved;
– installations in administrative locations of construction sites (offices, cloakrooms, meeting rooms, canteens, restaurants, dormitories, toilets, etc.) where the general rules of Parts 1 to 6 of IEC 60364 apply.

NOTE For special situations, more severe requirements apply, e.g. part 706 [2] for conductive locations with restricted movement.

704.2 Normative references

The following referenced documents are indispensable for the application of this document. For dated reference, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendement) applies.

IEC 60245-4, *Rubber insulated cables – Rated voltages upto and including 450/750 V – Part 4: Cords and flexible cables*

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*

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1) IEC 60621 (all parts), *Electrical installations for outdoor sites under heavy conditions (including open-cast mines and quarries)*

2) IEC 60364-7-706:—, *Low-voltage electrical installations - Part 7-706: Requirements for special installations or locations - Conducting locations with restricted movement (to be published)*

IEC 60439-4, *Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS)*

704.3 Assessment of general characteristics

704.313 Supplies

The following note is added.

NOTE A single construction site may be served by several sources of supply, including generating sets; see IEC 60364-5-55, Clause 551.

704.4 Protection for safety

704.410.3 Application of measures of protection against electric shock

704.410.3.1 General

The following clause is added:

704.410.3.1.6 Circuits supplying socket-outlets with rated current up to and including 32 A and other circuits supplying hand-held electrical equipment with rated current up to and including 32 A shall be protected by

– residual current devices having a rated residual operating current not exceeding 30 mA (412.5), or
– be supplied by SELV or PELV (411.1), or
– have electrical separation of circuits (413.5), each socket-outlet and hand-held electrical equipment being supplied by an individual isolating transformer or by separate windings of an isolating transformer.

NOTE 1 In the Netherlands, circuits supplying socket-outlets with rated current up to and including 32 A that supply other assemblies for construction sites (ACS) are exempted provided that constructional provisions for these socket-outlet have been provided to avoid misuse.

NOTE 2 In Germany, circuits supplying socket-outlets with rated current up to and including 32 A are exempted provided that constructional provisions for these socket-outlet have been provided to avoid misuse.

NOTE 3 In Finland, circuits supplying socket-outlets with rated current up to and including 32 A that supply other ACSs are exempted provided that constructional provisions or warning signs for these socket-outlet have been provided to avoid misuse.

NOTE 4 In Denmark, circuits supplying socket-outlets with rated current up to and including 32 A that supply other ACSs are exempted provided that a warning is provided in Danish on the ACS e.g. with the following text:
Kun til forsyning af andre tavler.
Er ikke HFI-beskyttet.
(Only for the supply of other ACS.No RCD protection)

NOTE 5 In Ireland, electrical separation is not permitted in site installations.

NOTE 6 In Italy PELV is not admitted.

NOTE 7 In Sweden the requirement of this clause applies for socket-outlets with rated current up to and including 16 A.

NOTE 8 In Hungary, if the environmental conditions require it, then residual current devices with rated residual operating current of 100 mA can be used.

NOTE 9 In France, all final circuits supplying socket-outlets shall be protected by

– residual current devices having a rated residual operating current not exceeding 30 mA (412.5), or
– be supplied by SELV or PELV (411.1), or
– have electrical separation of circuits (413.5), each socket-outlet and handheld electrical equipment being supplied by an individual isolating transformer or by separate windings of an isolating transformer.

704.410.3.3.2

The following notes are added:

NOTE 1 If electrical separation is used special attention should be paid to the requirements of subclause 413.5.1.3.

NOTE 2 In Ireland and United Kingdom, protection by reduced low voltage system in which the highest voltage shall not exceed 110 V a.c. between phases and 55 V a.c. to earth (single-phase) or 63,5 V a.c. to earth (three-phases) is considered as a particular application of the protection measure by automatic disconnection of supply in the TN system according to Clause 413.1. In this case, socket-outlets do not need the additional protective measures specified below.

NOTE 3 In Belgium, Italy, Portugal and Spain, when protection against indirect contact is assured by automatic disconnection of supply, according to Clause 413.1, the conventional touch voltage limit U_L shall be limited to 25 V a.c. r.m.s. or 60 V ripple free d.c.

NOTE 4 In Sweden when protection of persons against indirect contact is provided by the measure of protection by automatic disconnection of supply appropriate to the type of earthing system (413.1), conventional touch voltage (U_L) exceeding 25 V a.c., r.m.s., or 60 V ripple free d.c. shall be disconnected before danger arises.
For TN and IT systems the disconnection times in Table 41C of IEC 60364-4-41, Subclause 413.1.7.1, apply.

704.411.1.4 Requirements for unearthed circuits (SELV)

The following requirements are added:

704.411.1.4.3 The requirement for protection against direct contact in accordance with 411.1.4.3 shall be provided, irrespective of the nominal voltage.

704.411.1.5 Requirements for earthed cicuits (PELV)

The following requirements are added:

704.411.1.5.2 The requirement for protection against direct contact in accordance with 411.1.5.1 shall be provided, irrespective of the nominal voltage.

704.412 Protection against direct contact

The following requirements are added:

704.412.3 Obstacles

The measure of protection by means of obstacles (Clause 412.3) is not permitted**.**

704.412.4 Placing out of reach

The measure of protection by placing out of reach (Clause 412.4) is not permitted.

704.413.1.1.1 Disconnection of supply

The following requirement is added:

704.413.1.1.1.1 For circuits supplying socket-outlets with a rated current exceeding 32 A, residual current operating devices having a rated residual operating current not exceeding 500 mA shall be used as disconnection devices.

NOTE 1 In Norway, first fault disconnection is required in new consumer installations connected to a public IT-distribution network. In this case it may be necessary to choose a lower rated residual operating current in order for the RCD to operate. In IT-distribution systems the necessary rated residual operating current will normally be determined by the capacitance of the network.