SLOVENSKI STANDARD
SIST HD 384.5.551 S1:2004

01-januar-2004

Električne inštalacije v zgradbah - 5. del: Izbira in namestitev električne opreme - poglavje 55: Druga oprema - 551. točka: Nizkonapetostni generatorji (IEC 60364-5-551:1994)

Electrical installations of buildings - Part 5: Selection and erection of electrical equipment - Chapter 55: Other equipment - Section 551: Low-voltage generating sets

Elektrische Anlagen von Gebäuden - Teil 5: Auswahl und Errichtung elektrischer Betriebsmittel -- Kapitel 55: Andere Betriebsmittel - Hauptabschnitt 551: Niederspannungs-Stromversorgungsanlagen

Installation électrique des bâtiments - Partie 5: Choix et mise en oeuvre des matériels électriques -- Chapitre 55: Autres matériels - Section 551: Groupes générateurs à basse tension

Ta slovenski standard je istoveten z: HD 384.5.551 S1:1997

ICS:

29.160.40	Električni agregati	Generating sets
91.140.50	Sistemi za oskrbo z elektriko	Electricity supply systems

SIST HD 384.5.551 S1:2004 de

HARMONIZATION DOCUMENT
DOCUMENT D'HARMONISATION
HARMONISIERUNGSDOKUMENT

HD 384.5.551 S1

February 1997

ICS 91.140.50

Descriptors: Electrical installations, low voltage, equipment, selection, erection, generating set, independent installation, alternative to the public supply, protection

English version

Electrical installations of buildings
Part 5: Selection and erection of electrical equipment
Chapter 55: Other equipment
Section 551: Low-voltage generating sets
(IEC 364-5-551:1994)

Installation électrique des bâtiments
Partie 5: Choix et mise en oeuvre des matériels électriques
Châpitre 55: Autres matériels
Section 551: Groupes générateurs à basse tension
(CEI 364-5-551:1994)

Elektrische Anlagen von Gebäuden
Teil 5: Auswahl und Errichtung elektrischer Betriebsmittel
Kapitel 55: Andere Betriebsmittel
Hauptabschnitt 551: Niederspannungs-Stromversorgungsanlagen
(IEC 364-5-551:1994)

This Harmonization Document was approved by CENELEC on 1996-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. HD 384.5.551 S1:1997 E

Foreword

The text of the International Standard IEC 364-5-551:1994, prepared by IEC TC 64, Electrical installations of buildings, was submitted to the formal vote and was approved by CENELEC as HD 384.5.551 S1 on 1996-10-01 without any modification.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1997-03-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 1997-09-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 1997-09-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes ZA and ZB are normative and annexes A and ZC are informative.
Annexes ZA, ZB and ZC have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 364-5-551:1994 was approved by CENELEC as a Harmonization Document without any modification.

In the official version, for annex A, Bibliography, the following notes have to be added for the standards indicated:

IEC 309	NOTE: Harmonized as EN 60309 series (modified).
IEC 364-3	NOTE: Harmonized as HD 384.3 S2:1995 (modified).
IEC 364-5-56	NOTE: Harmonized as HD 384.5.56 S1:1985 (modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This Harmonization document incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Harmonization document only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 364-4-46 (mod)	1981	Chapter 46: Isolation and switching	HD 384.4.46 S1	1987
IEC 364-5-54 (mod)	1980	Part 5: Selection and erection of electrical equipment Chapter 54: Earthing arrangements and protective conductors	HD 384.5.54 S1	1988

Annex ZB (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Germany

General

The statements and requirements relating to public supply systems refer to all systems in Germany, i.e. to public and non-public supply systems.

NOTE: Thus the word "public" in connection with supply systems should be deleted in the following subclauses: 551.1.1.1, 551.2.2, 551.2.3, 551.4.2, 551.4.3, 551.5.1, 551.5.2, 551.6, 551.6.1, 551.7 and 551.7.1 to 551.7.5.

Additional requirements for 551.4.4.2

IT system

NOTE: In IT systems, residual current devices operate only
- in the event of the first fault when the IT system is earthed through an adequately high impedance or when the relationship of the system capacities upstream and downstream the protective device causes a sufficiently high differential current;
- in the event of the second fault on different phase conductors when a separate residual current device is provided for each current-using equipment.

Where the residual current device cannot operate in the IT system, an insulation monitoring device and disconnection in the event of two faults may be omitted if the two following requirements are met:

a) In the IT system, all exposed conductive parts shall be interconnected by a protective conductor. An earth resistance of

$$R_A \leq 100$$

is sufficient.

b) In the event of two faults at any point in the IT system, the voltage between the terminals of the active conductors of the generating set shall drop to $\leq$ 50 V.

The fault-current circuit with one insulation fault at each of two different consumers that produces the greatest sum of the protective conductor resistances shall then be taken as a basis.

Protective separation

Where protective separation is applied, the following conditions shall be met:

a) Unless the generating set is constructed as Class II equipment or is provided with an equivalent insulation, its exposed conductive part shall be connected to the equipotential bonding conductor.

b) Where several items of current-using equipment are connected to a generating set, the requirements of either item 1) or item 2) shall be fulfilled.

1) If the insulation resistance between active parts and the unearthed equipotential bonding conductor drops below 100 per V of the nominal voltage, the circuits of the current-using equipment shall be automatically disconnected from the generating set within 1 s. There is no need for a limitation on the extent of the supply system and for the disconnection condition to be observed if two faults occur.

2) The total length of the cables and conductors shall be limited so that the product of the nominal voltage in V and the total length of the cable in m does not exceed the value of 100 000 provided, also, that the total length of the cables and conductors does not exceed 500 m. Either of the following requirements shall be fulfilled.

- If two faults occur, disconnection shall be in accordance with Subclause 413.5.3.4 of HD 384.4.41 S2;

- In the event of two faults at any point, the voltage between the terminals of the active conductors of the generating set shall drop to $\leq$ 50 V. The fault-current circuit with one insulation fault at each of two different consumers that produces the greatest sum of the protective conductor resistances shall then be taken as a basis.

Additional requirements for 551.6

a) TN system

The requirement as laid down in subclause 551.4.2 shall be met.

In the TN-S system, the neutral conductor of the consumer's installation shall be changed over additionally.

Unless it is ensured that the protective measures applied in the case of the general power supply remain effective, the outgoing circuits shall be constructed as TN-S system and RCD's shall be used for the protection by automatic disconnection of supply.

Where this is not possible, subclause 413.1.3.6 of HD 384.4.41 S2:1996 may be applied.

In the TN-C system, the special national conditions for Subclause 551.7 shall be fulfilled.

b) TT system

The requirement as laid down in Subclause 551.4.2 shall be met.

In the TT system, the neutral conductor of the consumer's installation shall be changed over additionally.

Unless it is ensured that the protective measures applied in the case of the general power supply remain effective, RCD's shall be used for the protection of the current supply through automatic disconnection..

Where this is not possible, subclause 413.1.4.3 of HD 384.4.41 S2:1996 may be applied.

c) IT system

In the IT system, the neutral conductor of the consumer's installation, if any, shall be changed over additionally.

Unless it is ensured that the protective measure "Protection through disconnection at the second fault" becomes effective, Subclause 413.1.5.7 shall be applied.

Additional requirements for 551.7

a) TN system

In the TN system, the neutral point of the generating set shall be additionally connected to the earth system of the installation to be supplied, e.g. at the main earthing terminal or bar.

In the TN system, the generating set shall be interconnected with the general power supply in the TN-C system.

Unless it is ensured that the protective measures applied in the case of the general power supply remain effective, the outgoing circuits shall be constructed as TN-S system and RCD's shall be used for the protection by automatic disconnection of supply.

Where this is not possible, subclause 413.1.3.6 of HD 384.4.41 S2:1996 may be applied.

b) TT system

In the TT system, the neutral point of the generating set shall be connected to earth only via the existing neutral earthing.

Unless it is ensured that the protective measures applied in the case of the general power supply remain effective, RCD's shall be used for the protection through automatic disconnection of the power supply.

Where this is not possible, subclause 413.1.4.3 of HD 384.4.41 S2:1996 may be applied.

c) IT system

Unless it is ensured that the protective measure "Protection through disconnection in the second fault" becomes effective, Subclause 413.1.5.7 shall be applied.