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Irish Standard
I.S. HD 60364-5-551:2010

Low-voltage electrical installations -- Part 5-55: Selection and erection of electrical equipment - Other equipment -- Clause 551: Low-voltage generating sets (IEC 60364-5-55:2001/A2:2008 (CLAUSE 551) (EQV))

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HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

HD 60364-5-551

February 2010

ICS 91.140

Supersedes HD 384.5.551 S1:1997

English version

Low-voltage electrical installations - Part 5-55: Selection and erection of electrical equipment - Other equipment - Clause 551: Low-voltage generating sets

(IEC 60364-5-55:2001/A2:2008 (CLAUSE 551))

Installations électriques à basse tension -
Partie 5-55: Choix et mise en oeuvre des matériels électriques -
Autres matériels -
Article 551: Groupes générateurs à basse tension
(CEI 60364-5-55:2001/A2:2008 (CLAUSE 551))

Errichten von Niederspannungsanlagen -
Teil 5-55: Auswahl und Errichtung elektrischer Betriebsmittel -
Andere Betriebsmittel -
Abschnitt 551: Niederspannungsstromerzeugungseinrichtungen
(IEC 60364-5-55:2001/A2:2008 (CLAUSE 551))

This Harmonization Document was approved by CENELEC on 2009-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations 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).

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CENELEC

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

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Ref. No. HD 60364-5-551:2010 E

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Foreword

The text of the International Standard IEC 60364-5-55:2001/A2:2008, Clause 551, prepared by IEC TC 64, Electrical installations and protection against electric shock, was submitted to the CENELEC Unique Acceptance Procedure and was approved by CENELEC as HD 60364-5-551 on 2009-10-01.

This document supersedes HD 384.5.551 S1:1997.

In this standard, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

– latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	2010-10-01
– latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	2012-10-01

For this Harmonization Document the informative Annex A of IEC 60364-5-55:2001/A2:2008 shall be disregarded and has been replaced by the normative Annex ZA, *Special national conditions*.

Annexes ZA and ZB have been added by CENELEC.

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551 Low-voltage generating sets

551.1 Scope

This clause provides requirements for the selection and erection of low-voltage and extra-low voltage generating sets intended to supply, either continuously or occasionally, all or part of the installation. Requirements are also included for installations with the following supply arrangements:

– supply to an installation which is not connected to a system for distribution of electricity to the public;
– supply to an installation as an alternative to a system for distribution of electricity to the public;
– supply to an installation in parallel with a system for distribution of electricity to the public supply;
– appropriate combinations of the above.

This part does not apply to self-contained items of extra-low voltage electrical equipment which incorporate both the source of energy and the energy-using load and for which a specific product standard exists that includes the requirements for electrical safety.

NOTE Requirements of the electricity distributor should be ascertained before a generating set is installed in an installation that is connected to a system for distribution of electricity to the public.

551.1.1 Generating sets with the following power sources are considered:

– combustion engines;
– turbines;
– electric motors;
– photovoltaic cells (HD 60364-7-712 also applies);
– electrochemical accumulators;
– other suitable sources.

551.1.2 Generating sets with the following electrical characteristics are considered:

– mains-excited and separately excited synchronous generators;
– mains-excited and self-excited asynchronous generators;
– mains-commutated and self-commutated static converters with or without by-pass facilities;
– generating sets with other suitable electrical characteristics.

551.1.3 The use of generating sets for the following purposes is considered:

– supply to permanent installations;
– supply to temporary installations;
– supply to mobile equipment which is not connected to a permanent installation;
– supply to mobile units (HD 60364-7-717 also applies).

551.2 General requirements

551.2.1 The means of excitation and commutation shall be appropriate for the intended use of the generating set and the safety and proper functioning of other sources of supply shall not be impaired by the generating set.

NOTE See 551.7 for particular requirements where the generating set may operate in parallel with a system for the distribution of electricity to the public.

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551.2.2 The prospective short-circuit current and prospective earth fault current shall be assessed for each source of supply or combination of sources which can operate independently of other sources or combinations. The short-circuit breaking capacity of protective devices within the installation and, where appropriate, connected to a system for distribution of electricity to the public, shall not be exceeded for any of the intended methods of operation of the sources.

NOTE Attention should be given to the power factor specified for protective devices in the installation.

551.2.3 The capacity and operating characteristics of the generating set shall be such that danger or damage to equipment does not arise after the connection or disconnection of any intended load as a result of the deviation of the voltage or frequency from the intended operating range. Means shall be provided to automatically disconnect such parts of the installation as may be necessary if the capacity of the generating set is exceeded.

NOTE 1 Attention should be given to the size of individual loads as a proportion of the capacity of the generating set and to motor starting currents.

NOTE 2 Attention should be given to the power factor specified for protective devices in the installation.

NOTE 3 The installation of a generating set within an existing building or installation may change the conditions of external influence for the installation (see HD 60364-1), for example by the introduction of moving parts, parts at high temperature or by the presence of inflammable fluids and noxious gases, etc.

551.2.4 Provision for isolation shall meet the requirements of Clause 537 for each source or combination of sources of supply.

551.3 Protective measure: extra-low-voltage provided by SELV and PELV

551.3.1 Additional requirements for SELV and PELV where the installation is supplied from more than one source

Where a SELV or PELV system may be supplied by more than one source, the requirements of 414.3 of HD 60364-4-41 shall apply to each source. Where one or more of the sources is earthed, the requirements for PELV systems in 414.4 of HD 60364-4-41 shall apply.

If one or more of the sources does not meet the requirements of 414.3, the system shall be treated as a FELV system and the requirements of 411.7 of HD 60364-4-41 shall apply.

551.3.2 Additional requirements where it is necessary to maintain the supply to an extra-low voltage system

Where it is necessary to maintain the supply to an extra-low voltage system following the loss of one or more sources of supply, each source of supply or combination of sources of supply which can operate independently of other sources or combinations shall be capable of supplying the intended load of the extra-low voltage system. Provisions shall be made that the loss of low-voltage supply to an extra-low voltage source does not lead to danger or damage to other extra-low voltage equipment.

NOTE Such precautions can be necessary in supplies for safety services (see Part 56[1)] of IEC 60364).

551.4 Fault protection (protection against indirect contact)

551.4.1 Fault protection shall be provided for the installation in respect of each source of supply or combination of sources of supply that can operate independently of other sources or combinations of sources.

[1)] HD 60364-5-56 under preparation.

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