Irish Standard
I.S. EN 62282-3-300:2012

Fuel cell technologies -- Part 3-300: Stationary fuel cell power systems - Installation (IEC 62282-3-300:2012 (EQV))

I.S. EN 62282-3-300:2012

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EN 62282-3-300

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English version

Fuel cell technologies - Part 3-300: Stationary fuel cell power systems - Installation

(IEC 62282-3-300:2012)

Technologies des piles à combustible - Partie 3-300: Systèmes à piles à combustible stationnaires - Installation
(CEI 62282-3-300:2012)

Brennstoffzellentechnologien - Teil 3-300: Stationäre-Brennstoffzellen-Energiesysteme - Installation
(IEC 62282-3-300:2012)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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. EN 62282-3-300:2012 E

Foreword

The text of document 105/377/FDIS, future edition 1 of IEC 62282-3-300, prepared by IEC/TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62282-3-300:2012.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-04-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-07-19

This document supersedes EN 62282-3-3:2008.

EN 62282-3-300:2012 includes the following significant technical changes with respect to EN 62282-3-3:2008:

– addition in the scope to avoid overlapping between EN 62282-3-100 and EN 62282-3-300 concerning safety related requirements;

– updating normative references and definitions;

– requirements applicable to the stationary fuel cell removed, so that the target of this standard focuses on “installation risks”;

– level of CO reduced for small fuel cell power systems which exhaust directly into a utility shed where they are installed, and where the shed is to ensure safety;

– requirement for using a combustible gas detection system modified;

– reference to the gas valve standard ISO 23551-1 added.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

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

Endorsement notice

The text of the International Standard IEC 62282-3-300:2012 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 60079-10	Series	Explosive atmospheres - Part 10: Classification of areas	EN 60079-10	Series
IEC 60079-29-1	-	Explosive atmospheres - Part 29-1: Gas detectors - Performance requirements of detectors for flammable gases	EN 60079-29-1	-
IEC 60079-29-2	-	Explosive atmospheres - Part 29-2: Gas detectors - Selection, installation, use and maintenance of detectors for flammable gases and oxygen	EN 60079-29-2	-
IEC 62282-3-100	2012	Fuel cell technologies - Part 3-100: Stationary fuel cell power systems - Safety	EN 62282-3-100	2012
ISO 1182	-	Reaction to fire tests for building products - Non-combustibility test	EN ISO 1182	-
ISO 14121	-	Safety of machinery - Principles of risk assessment	-	-
ISO 23551-1	-	Safety and control devices for gas burners and gas-burning appliances - Particular requirements - Part 1: Automatic valves	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FUEL CELL TECHNOLOGIES –

Part 3-300: Stationary fuel cell power systems – Installation

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 non-governmental 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.
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International Standard IEC 62282-3-300 has been prepared by IEC technical committee 105: Fuel cell technologies.

IEC 62282-3-300 cancels and replaces IEC 62282-3-3, published in 2007, and constitutes a technical revision.

IEC 62282-3-300 includes the following significant technical changes with respect to IEC 62282-3-3:

– addition in the scope to avoid overlapping between IEC 62282-3-100 and IEC 62282-3-300 concerning safety related requirements;
– updating normative references and definitions;
– requirements applicable to the stationary fuel cell removed, so that the target of this standard focuses on "installation risks";

– level of CO reduced for small fuel cell power systems which exhaust directly into a utility shed where they are installed, and where the shed is to ensure safety;
– requirement for using a combustible gas detection system modified;
– reference to the gas valve standard ISO 23551-1 added.

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

FDIS	Report on voting
105/377/FDIS	105/388/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.

A list of all parts of the IEC 62282 series, under the general title *Fuel cell technologies*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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

This International Standard covers the installation of stationary fuel cell power systems that are built in compliance with IEC 62282-3-100.

The requirements of this standard are not intended to constrain innovation. Installations employing materials and/or methods differing from those detailed in this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

FUEL CELL TECHNOLOGIES –

Part 3-300: Stationary fuel cell power systems – Installation

1 Scope

This part of IEC 62282 provides minimum safety requirements for the installation of indoor and outdoor stationary fuel cell power systems in compliance with IEC 62282-3-100 and applies to the installation of the following systems:

– intended for electrical connection to mains directly or with a readily accessible, manually operable switch or circuit-breaker;
– intended for a stand-alone power distribution system;
– intended to provide AC or DC power;
– with or without the ability to recover useful heat.

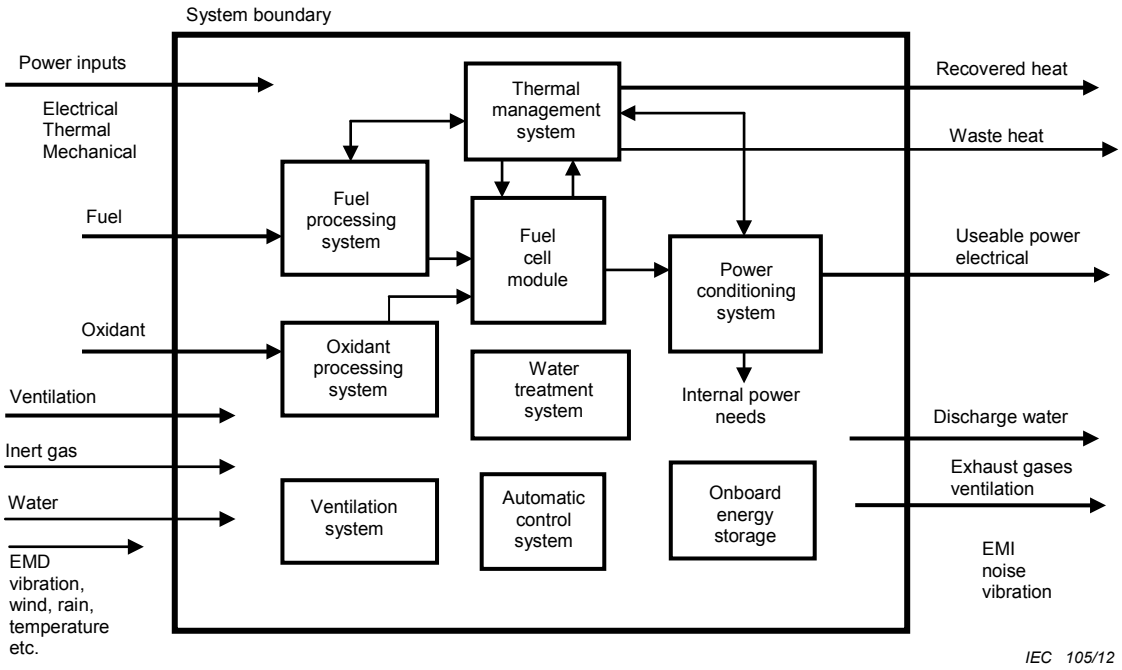
This standard is limited to those conditions that may be created by the installation process that can lead to personnel hazards or damage to equipment or property external to the fuel cell power system.

This standard does not cover the safety requirements of the stationary fuel cell power system which are covered by IEC 62282-3-100.

Additionally, this standard does not cover:

– fuel supply and/or fuel storage systems;
– auxiliary media supply and disposal;
– switches or circuit-breakers;
– portable fuel cell power systems;
– propulsion fuel cell power systems;
– APU (auxiliary power units) applications.

A typical stationary fuel cell power system installation is represented in Figure 1.



Key
EMD electromagnetic disturbance
EMI electromagnetic interference

Figure 1 – Fuel cell power system

Fuel cell power systems are divided into two categories:

– small systems;
– large systems.

Terms and definitions are given in Clause 3.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60079-10 (all parts), *Explosive atmospheres – Part 10: Classification of areas*

IEC 60079-29-1, *Explosive atmospheres – Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases*

IEC 60079-29-2, *Explosive atmospheres – Part 29-2: Gas detectors – Selection, installation, use and maintenance of detectors for flammable gases and oxygen*

IEC 62282-3-100:2012, *Fuel cell technologies – Part 3-100: Stationary fuel cell power systems – Safety*

ISO 1182, *Reaction to fire tests for building and transport products – Non-combustibility test*

ISO 14121, *Safety of machinery – Risk assessment*