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

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 62282-3-300:2012 sisaldab Euroopa standardi EN 62282-3-300:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 62282-3-300:2012 consists of the English text of the European standard EN 62282-3-300:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.10.2012.	Date of Availability of the European standard is 19.10.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 27.070

EUROPEAN STANDARD

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EUROPÄISCHE NORM

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)

This European Standard was approved by CENELEC on 2012-07-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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	-	-

CONTENTS

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.

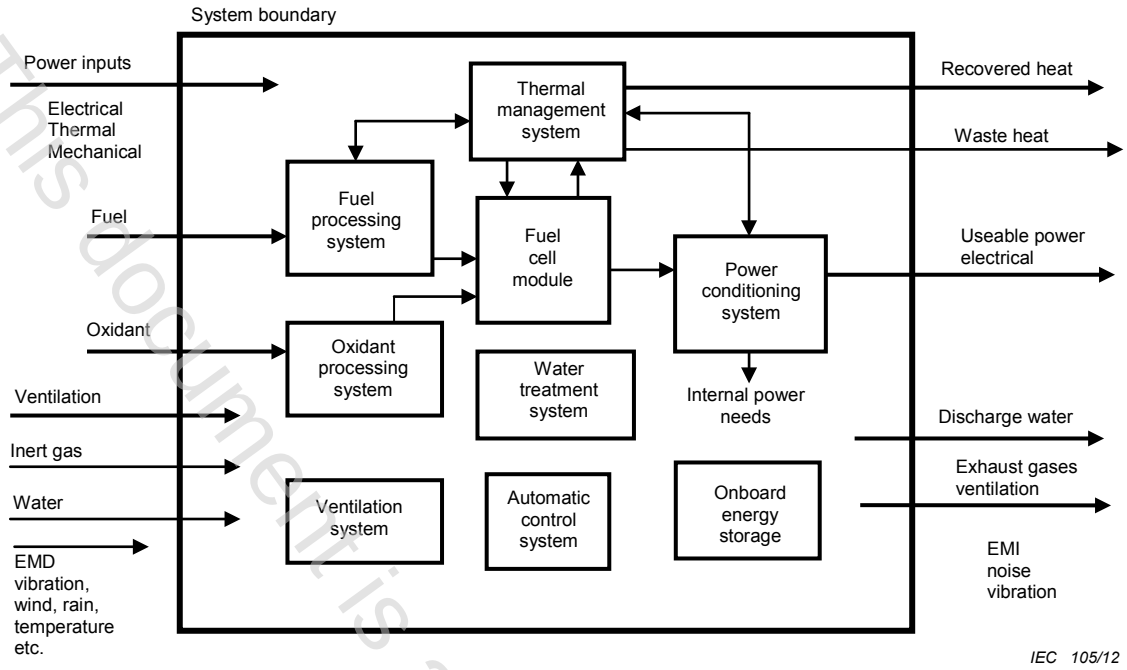
This standard is limited to those conditions that may be created by the installation process that can lead to personnel hazards or damage to equipment or property external to the fuel cell power system.

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*

ISO 23551-1, *Safety and control devices for gas burners and gas-burning appliances – Particular requirements – Part 1: Automatic valves*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
accessible (operator access area)
area to which, under normal operating conditions, one of the following applies:

– access can be gained without the use of a tool;
– the means of access are deliberately provided to the operator;
– the operator is instructed to enter, regardless of whether or not a tool is needed to gain access.

Note 1 to entry The terms "access" and "accessible", unless qualified, relate to operator access area as defined above.

3.2
approved
acceptable to the authority having jurisdiction

3.3
authority having jurisdiction
AHJ
organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure

3.4
exhaust
gases removed from a fuel cell power system and not reused

3.5
exhaust system
gas-conveying system for moving gases from a source to a point of discharge

3.6
fire prevention
measures directed toward avoiding the inception of fire

3.7
fire protection
methods of providing for fire control or fire extinguishment

3.8
fire risk evaluation
detailed engineering review of a plant's construction features and operating processes conducted to ensure that applicable fire prevention and fire protection requirements for safeguarding life and physical property are met

3.9
forced ventilation
movement of air and its replacement with fresh air by mechanical means

3.10
indoor installation
fuel cell power system completely surrounded and enclosed by walls, a roof and a floor