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Tehnologije gorivnih celic - 4-102. del: Elektroenergetski sistemi z gorivnimi celicami za industrijske električne kamione - Preskusne metode zmogljivosti (IEC 62282-4-102:2017)

Fuel cell technologies - Part 4-102: Fuel cell power systems for industrial electric trucks - Performance test methods (IEC 62282-4-102:2017)

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EUROPEAN STANDARD

EN 62282-4-102

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June 2017

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**Fuel cell technologies - Part 4-102: Fuel cell power systems for
industrial electric trucks - Performance test methods
(IEC 62282-4-102:2017)**

Technologies des piles à combustible - Partie 4-102:
Systèmes à piles à combustible pour chariots de
manutention électriques - Méthodes d'essai des
performances
(IEC 62282-4-102:2017)

Brennstoffzellen-Technologien - Teil 4-102: Antriebe mit
Brennstoffzellen-Energiesystemen für elektrisch betriebene
Flurförderfahrzeuge - Leistungskennwertepförfahren
(IEC 62282-4-102:2017)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 62282-4-102:2017**European foreword**

The text of document 105/635/FDIS, future edition 1 of IEC 62282-4-102, prepared by IEC TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62282-4-102:2017.

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) 2018-02-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-05-15

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

IEC 62282-3-200	NOTE	Harmonized as EN 62282-3-200.
IEC 62282-4-101	NOTE	Harmonized as EN 62282-4-101
ISO 6060	NOTE	Harmonized as EN ISO 6060
ISO 6976	NOTE	Harmonized as EN ISO 6976
ISO 10523	NOTE	Harmonized as EN ISO 10523

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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here:

www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61672-1	-	Electroacoustics - Sound level meters -- Part 1: Specifications	EN 61672-1	-
IEC 62282-3-201	-	Fuel cell technologies -- Part 3-201: Stationary fuel cell power systems -- Performance test methods for small fuel cell power systems	EN 62282-3-201	-
IEC 62282-6-300	-	Fuel cell technologies -- Part 6-300: Micro fuel cell power systems - Fuel cartridge interchangeability	EN 62282-6-300	-
ISO 9000	-	Hydrogen fuel - Product specification - Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles	EN ISO 9000	-
ISO 14687-2	-		-	-

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Part 4-102: Fuel cell power systems for industrial electric trucks – Performance test methods

Technologies des piles à combustible –
Partie 4-102: Systèmes à piles à combustible pour chariots de manutention électriques – Méthodes d'essai des performances

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FUEL CELL TECHNOLOGIES –

Part 4-102: Fuel cell power systems for industrial electric trucks –
Performance test methods

FOREWORD

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International Standard IEC 62282-4-102 has been prepared by IEC technical committee 105: Fuel cell technologies.

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

FDIS	Report on voting
105/635/FDIS	105/642/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 website 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.

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INTRODUCTION

This part of IEC 62282-4 provides consistent and repeatable test methods for the electric/thermal and environmental performance of fuel cell power systems for industrial electric trucks.

The IEC 62282-4 series deals with categories such as safety, performance, and interchangeability of fuel cell power systems for propulsion other than road vehicles and auxiliary power units (APUs). Among the categories mentioned above, this document (IEC 62282-4-102) focuses on fuel cell power systems for industrial electric trucks because such an application is urgently demanded in the world.

This part of IEC 62282-4 describes type tests and their test methods only. No routine tests are required or identified, and no performance targets are set in this standard.

Fuel cells used in industrial electric trucks, such as forklift trucks, are hybrids and so operate in several different modes. Similarly, forklift trucks operate in different modes. The purpose of this document is to evaluate the fuel cell system in the various combinations of fuel cell modes and forklift truck modes. This document will break down these different modes and provide a framework for designing and evaluating a fuel cell system for use specifically in a forklift truck.

This part of IEC 62282-4 is to be used by manufacturers of fuel cell power systems used for industrial electric trucks and/or those who evaluate the performance of their systems for certification purposes.

Users of this document selectively execute test items that are suitable for their purposes from those described in this document. This document is not intended to exclude any other methods.

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