ICS 27.070 SLOVENSKÁ TECHNICKÁ NORMA Júl 2025

STN	**Technológia palivových článkov Časť 7-2: Skúšobné metódy Skúšky na preukázanie výkonových vlastností jednotlivých článkov a zväzkov palivových článkov s tuhým oxidom (SOFC)**	**STN EN IEC 62282-7-2** 36 4512

Fuel cell technologies - Part 7-2: Test methods - Single cell and stack performance tests for solid oxide fuel cells (SOFCs)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/25

Obsahuje: EN IEC 62282-7-2:2025, IEC 62282-7-2:2025

Oznámením tejto normy sa od 30.04.2028 ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62282-7-2

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Supersedes EN IEC 62282-7-2:2021

English Version

Fuel cell technologies - Part 7-2: Test methods - Single cell and stack performance tests for solid oxide fuel cells (SOFCs) (IEC 62282-7-2:2025)

Technologies des piles à combustible - Partie 7-2: Méthodes d'essai - Essais de performance de cellule élémentaire et de pile pour les piles à combustible à oxyde solide (SOFC) (IEC 62282-7-2:2025)

Brennstoffzellentechnologien - Teil 7-2: Prüfverfahren - Prüfungen zum Nachweis des Einzelzellen- und Stackleistungsverhaltens von Festoxid-Brennstoffzellen (SOFC) (IEC 62282-7-2:2025)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 105/1093/FDIS, future edition 2 of IEC 62282-7-2, prepared by TC 105 "Fuel cell technologies" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62282-7-2:2025.

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)	2026-04-30
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2028-04-30

This document supersedes EN IEC 62282-7-2:2021 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62282-7-2:2025 was approved by CENELEC as a European Standard without any modification.

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

IEC 60352 (series)	NOTE	Approved as EN IEC 60352 (series)
IEC 60359	NOTE	Approved as EN 60359
IEC 60512-1-1	NOTE	Approved as EN 60512-1-1
IEC 60512-8-1	NOTE	Approved as EN 60512-8-1
IEC 60512-8-2	NOTE	Approved as EN 60512-8-2
IEC 62282-2-100	NOTE	Approved as EN IEC 62282-2-100
IEC 62282-8-101	NOTE	Approved as EN IEC 62282-8-101
ISO 6145-7	NOTE	Approved as EN ISO 6145-7

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-485	-	International Electrotechnical Vocabulary (IEV) - Part 485: Fuel cell technologies	-	-
IEC 60584-1	-	Thermocouples - Part 1: EMF specifications and tolerances	EN 60584-1	-
IEC 60584-3	-	Thermocouples - Part 3: Extension and compensating cables - Tolerances and identification system	EN IEC 60584-3	-
IEC 61515	-	Mineral insulated metal-sheathed thermocouple cables and thermocouples	EN 61515	-
ISO 5168	-	Measurement of fluid flow - Procedures for the evaluation of uncertainties	-	-
ISO 6974	series	Natural gas - Determination of composition and associated uncertainty by gas chromatography	EN ISO 6974	series
ISO 7066-2	-	Assessment of uncertainty in the calibration and use of flow measurement devices - Part 2: Non-linear calibration relationships	-	-
ISO 8573-1	-	Compressed air – Part 1: Contaminants and purity classes	-	-
ISO 8756	-	Air quality; handling of temperature, pressure and humidity data	-	-
ISO 12185	-	Crude petroleum, petroleum products and related products - Determination of density - Laboratory density meter with an oscillating U-tube sensor	EN ISO 12185	-

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fuel cell technologies – Part 7-2: Test methods – Single cell and stack performance tests for solid oxide fuel cells (SOFCs)

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IEC 62282-7-2:2025-03(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC 62282-7-2 has been prepared by IEC technical committee 105: Fuel cell technologies. It is an International Standard.

This second edition cancels and replaces the first edition published in 2021. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Table 1 has been revised to specify the units missing for some terms;
b) bibliographical entries (ISO/TR 15916, SOCTESQA test modules and ISO/IEC Guide 98-6:2021) have been added to provide further information.

The text of this International Standard is based on the following documents:

Draft	Report on voting
105/1093/FDIS	105/1099/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

Solid oxide fuel cells (SOFCs) have a broad range of geometry and size. As such, in general, peripherals like current collectors and gas manifolds are unique to each cell or stack and are often incorporated into a cell or stack to form one integrated unit. In addition, they tend to have a significant effect on the power generation characteristics of the cell or stack. This document therefore introduces as its subject "cell/stack assembly units", which are defined as those units containing not only a cell or stack but also peripherals.

FUEL CELL TECHNOLOGIES –

Part 7-2: Test methods – Single cell and stack performance tests for solid oxide fuel cells (SOFCs)

1 Scope

This part of IEC 62282 applies to SOFC cell/stack assembly units, testing systems, instruments and measuring methods, and specifies test methods to test the performance of SOFC cells and stacks.

This document is not applicable to small button cells that are designed for SOFC material testing and provide no practical means of fuel utilization measurement.

This document is used based on the recommendation of the entity that provides the cell performance specification or for acquiring data on a cell or stack in order to estimate the performance of a system based on it. Users of this document can selectively execute test items suitable for their purposes from those described in this document.

Users can substitute selected test methods of this document with equivalent test methods of IEC 62282-8-101 for solid oxide cell (SOC) operation for energy storage purposes, operated in reverse or reversible mode.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-485, *International Electrotechnical Vocabulary (IEV) – Part 485: Fuel cell technologies,* available at https://www.electropedia.org

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

IEC 60584-3, *Thermocouples – Part 3: Extension and compensating cables – Tolerances and identification system*

IEC 61515, *Mineral insulated metal-sheathed thermocouple cables and thermocouples*

ISO 5168, *Measurement of fluid flow – Procedures for the evaluation of uncertainties*

ISO 6974 (all parts), *Natural gas – Determination of composition with defined uncertainty by gas chromatography*

ISO 7066-2, *Assessment of uncertainty in the calibration and use of flow measurement devices – Part 2: Non-linear calibration relationships*

ISO 8573-1, *Compressed air – Part 1: Contaminants and purity classes*

ISO 8756, *Air quality – Handling of temperature, pressure and humidity data*

ISO 12185, *Crude petroleum, petroleum products and related products – Determination of density – Laboratory density meter with an oscillating U-tube sensor*