

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fuel cell technologies –
Part 5-100: Portable fuel cell power systems – Safety**

**Technologies des piles à combustible –
Partie 5-100: Systèmes à piles à combustible portables – Sécurité**





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CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references	10
3 Terms and definitions	13
4 Design and construction requirements	18
4.1 Physical environment and operating conditions.....	18
4.1.1 General requirements	18
4.1.2 Electrical power input	18
4.1.3 Handling, transportation, and storage	18
4.2 Material compatibility	18
4.2.1 General requirements for material compatibility	18
4.2.2 Polymeric and elastomeric components	19
4.2.3 Fuel connection devices	19
4.3 Protection against mechanical hazards	19
4.4 Protection against toxicity of fuels and fuel feedstocks.....	20
4.5 Protection against explosion hazards	20
4.5.1 General requirements for protection against explosion hazards	20
4.5.2 Flammable atmospheres within the portable fuel cell power system.....	20
4.5.3 Normal operation	20
4.5.4 Abnormal operation	20
4.5.5 Purging.....	20
4.5.6 Electrostatic discharge	21
4.6 Protection against electric shock.....	21
4.6.1 General requirements for protection against electric shock	21
4.6.2 Protection against direct contact with live parts	21
4.6.3 Protection against indirect contact with live parts.....	22
4.6.4 Protection by the use of SELV	22
4.7 Selection of electrical components and equipment	23
4.7.1 Area classification and suitability	23
4.7.2 Turning moments	23
4.7.3 Fuses	23
4.7.4 Capacitor discharge.....	23
4.7.5 Securing of parts	23
4.7.6 Current-carrying parts.....	24
4.7.7 Internal wiring.....	24
4.7.8 Cord-connected portable fuel cell power systems	24
4.7.9 Strain relief.....	25
4.7.10 Creepage and clearances	25
4.7.11 Separation of circuits	25
4.7.12 Protection of receptacles	26
4.7.13 Earthing and bonding.....	26
4.8 Protection against fire hazard	26
4.8.1 General intent and purpose of protection against fire hazard	26
4.8.2 Flammability	26
4.8.3 Openings in equipment	27
4.9 Protection against temperature hazards	28
4.9.1 General requirements for protection against temperature hazards	28

4.9.2	Surface temperatures	28
4.9.3	Component temperatures	28
4.9.4	Wall, floor and ceiling temperatures	28
4.10	Protection against electromagnetic disturbances	28
4.11	Hazard and risk assessment	28
4.11.1	General requirements for hazard and risk assessment and the approach	28
4.11.2	Safety and reliability analysis	29
4.12	Safety control circuits	29
4.13	Protection against oxygen depletion	29
4.14	Emission of effluents	30
4.15	Fuel supply	30
4.16	Fuel processing systems (if applicable)	30
4.17	Enclosures	31
4.17.1	General requirements for all enclosures	31
4.17.2	Enclosure requirements for outdoor use	31
4.18	Battery supplies	31
4.18.1	General requirements for batteries	31
4.18.2	Battery compartments	31
4.18.3	Vented wet cell batteries	32
4.18.4	Ventilation of battery compartments	32
4.19	Pressure vessels and piping	32
4.19.1	General requirements for pressure vessels and piping	32
4.19.2	Piping systems	32
4.20	Hoses	33
4.21	Automatic shut-off valves	33
4.22	Regulators	33
4.23	Process control equipment	33
4.24	Filters	33
4.24.1	Air filters	33
4.24.2	Liquid fuel filters	34
4.25	Motors	34
4.26	Fuel pumps	34
5	Instructions	34
5.1	Operation and maintenance manual	34
5.2	User's information manual	36
5.2.1	User's information manual general requirements	36
5.2.2	User's information manual front cover	36
5.2.3	Users information manual safety section	36
6	Labelling	37
6.1	General labelling requirements	37
6.2	Marking	37
6.3	Warnings	38
7	Type tests	38
7.1	General requirements for type tests	38
7.2	Tests sequence	39
7.3	Leakage test for liquid fueled systems	39
7.3.1	General requirements for leakage tests for liquid fueled systems	39
7.3.2	Method of test	39
7.4	Flammable fuel gas concentration test	40

7.4.1	General requirements for flammable gas concentration testing	40
7.4.2	Method of test.....	40
7.5	Surface temperature test.....	40
7.6	Component temperature test.....	40
7.7	Wall, floor and ceiling temperatures test	40
7.8	Dielectric strength test	41
7.8.1	General requirements for dielectric strength and testing	41
7.8.2	Test method	41
7.9	Humidity test.....	41
7.10	Leakage current at operating temperature.....	41
7.10.1	Leakage current testing requirement and duration	41
7.10.2	Test method	42
7.11	Abnormal operation testing	42
7.11.1	Abnormal operation testing – General requirements.....	42
7.11.2	Abnormal operation tests – Outcomes and further testing requirements.....	42
7.11.3	Abnormal operation test methods	42
7.12	Strain relief test	43
7.13	Insulating material test.....	43
7.14	Earthing test	43
7.15	Tank pressure test	43
7.16	Stability.....	44
7.17	Impact test.....	44
7.18	Free drop test	45
7.19	Adhesion and legibility of marking materials.....	46
7.20	Flammable gas accumulation.....	46
7.20.1	Flammable gas accumulation test basis and applicability.....	46
7.20.2	Test set-up	47
7.20.3	Test method	47
7.21	Oxygen depletion test	47
7.21.1	Oxygen depletion test basis and applicability.....	47
7.21.2	Test set-up	47
7.21.3	Test method	48
7.22	Emission of effluents tests	48
7.22.1	Emission of effluents testing sequence	48
7.22.2	Emission of effluents for indoors.....	48
7.23	Wind test	50
7.23.1	Wind test applicability.....	50
7.23.2	Method of test.....	50
7.24	Strength test	51
7.24.1	Strength test sequencing and alternative compliance methods	51
7.24.2	Method of test (liquid).....	51
7.24.3	Method of test (gas).....	51
7.24.4	Passing criteria.....	51
7.25	Stress relief test.....	52
7.26	Fuel supply securement test	52
7.27	Shutdown parameters	52
7.28	Non-metallic tubing conductivity test	52
7.28.1	Passing criteria.....	52
7.28.2	Test method	52

7.29	Non-metallic tubing test for accumulation of static electricity.....	53
7.29.1	Passing criteria.....	53
7.29.2	Test method	53
8	Routine tests	53
8.1	Routine test requirements	53
8.2	Liquid leakage test.....	53
8.3	Gas leakage test.....	53
8.4	Dielectric strength test	54
8.5	Routine test records.....	54
Annex A	(normative) Ventilation rates for batteries	55
A.1	Ventilation rate for valve regulated lead acid batteries	55
A.2	Ventilation rate for vented wet cell batteries.....	55
Annex B	(informative) Shock and vibration limits for high shock environments	56
B.1	Field of application.....	56
B.2	Vertical axis test	56
B.3	Longitudinal and lateral axes tests	56
Annex C	(normative) Uncertainty of measurements	58
Bibliography	59
Figure 1	– Portable fuel cell power systems	9
Figure 2	– Articulated probe.....	46
Table 1	– Emission limits based on STEL	50
Table B.1	– Vertical axis vibration conditions	56
Table B.2	– Longitudinal and lateral axes vibration conditions	57
Table C.1	– Measurements and their maximum uncertainties	58

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FUEL CELL TECHNOLOGIES –

Part 5-100: Portable fuel cell power systems – Safety

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International Standard IEC 62282-5-100 has been prepared by IEC technical committee 105: Fuel cell technologies.

This edition cancels and replaces the second edition of IEC 62282-5-1, published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 62282-5-1:

- the requirements and verification method regarding 4.13 and 7.21 for oxygen depletion have been modified;
- the requirements and verification method regarding 4.14 and 7.22 for emission of effluents have been modified;
- Subclauses 4.21 and 7.20.3, for fuel cell power systems with flammable gas generators relying on water reactive technology, new safety requirements and test procedures have been added;
- Subclause 7.11.1 e) has been updated; for an overcurrent test in abnormal operations, a new test procedure in consideration of safety has been added.

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

CDV	Report on voting
105/649/CDV	105/670/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

FUEL CELL TECHNOLOGIES –

Part 5-100: Portable fuel cell power systems – Safety

1 Scope

This part of IEC 62282 covers construction, marking and test requirements for portable fuel cell power systems. These fuel cell systems are movable and not fastened or otherwise secured to a specific location. The purpose of the portable fuel cell power system is to produce electrical power.

This document applies to AC and DC type portable fuel cell power systems, with a rated output voltage not exceeding 600 V AC, or 850 V DC for indoor and outdoor use. These portable fuel cell power systems cannot be used in hazardous locations as defined in IEC 60050-426:2008, 426-03-01 unless there are additional protective measures in accordance with IEC 60079-0[5]¹⁾.

This document does not apply to portable fuel cell power systems that are

- 1) permanently connected (hard wired) to the electrical distribution system,
- 2) permanently connected to a utility fuel distribution system,
- 3) exporting power to the grid,
- 4) for propulsion of road vehicles,
- 5) intended to be used on board passenger aircraft.

Fuel cells that provide battery charging for hybrid vehicles where the battery provides power and energy for propulsion of the vehicle are not included in the scope of this document

The following fuels and fuel feedstocks are considered within the scope of this document:

- natural gas,
- liquefied petroleum gas, such as propane and butane,
- liquid alcohols, for example methanol, ethanol,
- gasoline,
- diesel,
- kerosene,
- hydrogen,
- chemical hydrides.

This document does not preclude the use of similar fuels or oxidants from sources other than air provided the unique hazards are addressed through additional requirements.

1) Numbers in square brackets refer to the Bibliography.