IEC 62282-3-200

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fuel cell technologies –
Part 3-200: Stationary fuel cell power systems – Performance test methods

Technologies des piles à combustible –
Partie 3-200: Systèmes à piles à combustible stationnaires – Méthodes d'essai des performances

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FUEL CELL TECHNOLOGIES –

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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 62282-3-200 has been prepared by IEC technical committee 105: Fuel cell technologies.

This first edition of IEC 62282-3-200 cancels and replaces the first edition of IEC 62282-3-2, published in 2006, and constitutes a technical as well as a structural revision.

The principal changes in this first edition of IEC 62282-3-200 as compared with the first edition of IEC 62282-3-2 aim to harmonize with ASME PTC-50. They are as follows:

– the equations for efficiency calculation are changed from power-base to average power-base, which is obtained by dividing energy by test duration;
– the duration of the test and frequency of reading are changed;
– the efficiency test at partial load is no longer mandatory. Whether or not to conduct the test at partial load should be determined by the parties conducting the tests;

– the flow rate measurement method is modified. Both mass flow rate and volume flow rate are used for calculations of efficiency;

– the thermal energy input and mechanical energy input are incorporated into efficiency calculations.

The development of an independent standard on performance test methods of small stationary fuel cell power systems is currently under way (future IEC 62282-3-201). It will be harmonized with this standard.

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

FDIS	Report on voting
105/340/FDIS	105/349/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 the 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 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This part of IEC 62282 describes how to measure the performance of stationary fuel cell power systems for residential, commercial, agricultural and industrial applications.

The following fuel cell types have been considered:

– alkaline fuel cells (AFC),
– phosphoric acid fuel cells (PAFC),
– polymer electrolyte fuel cells (PEFC),
– molten carbonate fuel cells (MCFC);
– solid oxide fuel cells (SOFC).