

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Fuel cell technologies –  
Part 4-600: Fuel cell power systems for propulsion other than road vehicles and  
auxiliary power units (APU) – Fuel cell/battery hybrid systems performance test  
methods for excavators**

**Technologies des piles à combustible –  
Partie 4-600: Systèmes à piles à combustible pour la propulsion, autres que les  
véhicules routiers et groupes auxiliaires de puissance (GAP) – Méthodes  
d'essai des performances des systèmes hybrides à piles à combustible/batterie  
pour les pelles**



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**Part 4-600: Fuel cell power systems for propulsion other than road vehicles and auxiliary power units (APU) – Fuel cell/battery hybrid systems performance test methods for excavators**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FUEL CELL TECHNOLOGIES –

**Part 4-600: Fuel cell power systems for propulsion other than road vehicles and auxiliary power units (APU) – Fuel cell/battery hybrid systems performance test methods for excavators**

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

Draft	Report on voting
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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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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## FUEL CELL TECHNOLOGIES –

### **Part 4-600: Fuel cell power systems for propulsion other than road vehicles and auxiliary power units (APU) – Fuel cell/battery hybrid systems performance test methods for excavators**

#### **1 Scope**

This part of IEC 62282 covers the requirements for the performance test methods of fuel cell/battery hybrid systems intended to be used for electrically powered applications for excavators.

For this purpose, this document covers electrical performance and vibration tests for the fuel cell/battery hybrid system. This document also covers performance test methods which focus on vibration and other characteristics for balance of plant (BOP) installed in heavy-duty applications with fuel cell/battery hybrid system.

This document applies to both gaseous hydrogen-fuelled fuel cell power, liquid hydrogen-fuelled fuel cell power, direct methanol fuel cell power and battery hybrid power pack systems.

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

- gaseous hydrogen, and
- methanol.

This document does not apply to reformer-equipped fuel cell power systems.

This document can be applied to fuel cell power systems used for either propulsion or for auxiliary power units (APU) purposes. In case of APU, the same hybrid power pack can be used on board or as a stationary APU. In case of the latter, this document can also be applied.

A block diagram of a fuel cell/battery hybrid system is shown in Figure 1. This document covers the configuration, mode of hybridization, operation mode for fuel cell and battery in power pack systems.