



## **DANGEROUS GOODS PANEL (DGP) MEETING OF THE WORKING GROUP OF THE WHOLE**

**Memphis, 30 April to 4 May 2007**

### **Agenda Item 6: Discussion of miscellaneous dangerous goods issues**

#### **UPDATE FROM THE FUEL CELL INDUSTRY (IN REFERENCE TO DGP-WG/07-IP/2)**

(Presented by Fuel Cell Council)

##### **SUMMARY**

This paper provides information regarding the publication of *Corrigendum 1 - Fuel cell technologies - Part 6-1: Micro fuel cell power systems – Safety* by the International Electrotechnical Commission.

### **1. INTRODUCTION**

1.1 This paper provides information regarding the publication of *Corrigendum 1 - Fuel cell technologies - Part 6-1: Micro fuel cell power systems – Safety* by the International Electrotechnical Commission.

### **2. DISCUSSION**

2.1 The Corrigendum to IEC PAS 62282-6-1 Edition 1 implementing the water bath leak test was published on or about April 18, 2007. It can be accessed and obtained without charge at the link below:

Page 108

F.7

*Add, [...] the following new paragraph:*

“Following each type test for the butane fuel cartridge(s), the cartridge(s) shall be subjected to a water bath test. The temperature of the water bath and the duration of the test shall be such that the internal pressure in the cartridge reaches that which would be reached at 55 °C. No leakage or permanent deformation may occur, except that a plastic cartridge may be deformed through softening provided that it does not leak.”

2.2 The Corrigendum is attached.

**Fuel cell technologies –  
Part 6-1: Micro fuel cell power systems – Safety**

**CORRIGENDUM 1**

Page 22  
4.21.1b)

*Instead of:*

“...J1.7.”

*read:*

“...J.17.”

Page 26  
5.1.5

*Instead of:*

“Where a hazard is likely to occur...”

*read:*

“5.1.5.1 Where a hazard is likely to occur...”

*Instead of:*

“5.1.5.1 Mechanical movement...”

*read:*

“a) Mechanical movement...”

*Instead of:*

“5.1.5.2 In the case of a component...”

*read:*

“b) In the case of a component...”

Page 27

*Instead of:*

“5.1.5.3 The duration of each test...”

*read:*

“5.1.5.2 The duration of each test...”

*Instead of:*

“5.1.5.4 For equipment or components...”

*read:*

“a) For equipment or components...”

*Instead of:*

“5.1.5.5 For other equipment...”

*read:*

“b) For other equipment...”

Page 35

7.3.1.1

*Instead of:*

“Both test i) and test ii) are required.”

*read:*

“Both test a) and test b) are required.”

### **Test B Low external pressure**

*Instead of:*

“Passing Criteria: No fire at any time, no explosion at any time, no leakage. See Figure 2.”

*read:*

“iii) Passing Criteria: No fire at any time, no explosion at any time, no leakage. See Figure 2.”

Page 51

A.3.27

*Instead of:*

“...to interpret correctly...”

*read:*

“...to not wrongly interpret...”

Page 54

A.7.3.14viii)b)

*Instead of:*

“If more than 25 % of LFL is not detected....”

*read:*

“If not more than 25 % of LFL is detected ...”

A.7.3.14viii)c)3)

*Instead of:*

“If the spiral sweep does not detect any hydrogen concentrations of 25 % LFL or greater, then the device passes.”

*read:*

“If the spiral sweep detects hydrogen concentrations of not more than 25 % LFL, then the device passes.”

Page 57

B.3.18

*Instead of:*

“hydrogen gas escaping from the cartridge or system does not result in ...”

*read:*

“hydrogen gas escaping from the cartridge or system that results in ...”

Page 64

B.7.3.1.1

*Instead of:*

“B.7.3.1.1 Test A

Test A of 7.3.1.1 is not applicable to cartridges tested under this annex. Instead, cartridges shall pass Test B of B.7.3.1.1.

B.7.3.1.1 Test B

This test shall be performed on fuel cartridges certified by this annex. This subclause shall apply as written, with the addition that the external vacuum shall be applied for a period of 30 min.

ii) Passing criteria: No fir at any time, no explosion at any time, no leakage. See figure B.1.”

*read:*

“B.7.3.1.1 Cartridge

Test A Internal pressurization

Test A of 7.3.1.1 is not applicable to cartridges tested under this annex. Instead, cartridges shall pass B.7.3.1.1 Test B, below:

Test B Low external pressure

- i) This test shall be performed on fuel cartridges certified by this annex.
- ii) Subclause 7.3.1.1 Test B shall apply as written with the addition that the external vacuum shall be applied for a period of 30 min.
- iii) Passing criteria: No fire at any time, no explosion at any time, no leakage. See Figure B.1.”

Page 65

B.7.3.5.1

*Instead of:*

“If the drop test of 2 of...”

*read:*

“If the drop test of 6.3 of...”

*Instead of:*

“... the cartridge drop test of 7.3.5 (B and C)....”

*read:*

“... the cartridge drop test of 7.3.5 (2 or 3)...”

Page 107

F.3.25

*Instead of:*

“no impermissible leakage as defined in F.3.31.”

*read:*

“no impermissible leakage as defined in F.3.31.

No bubbles during the water bath test. No leakage is allowed.”

F.3.31

*Add item d) as follows:*

“d) any bubbles at all during the water bath test. No leakage is allowed.”

Page 108

F.7

*Add, after “Table 8 shall be replaced with Table F.1”, the following new paragraph:*

“Following each type test for the butane fuel cartridge(s), the cartridge(s) shall be subjected to a water bath test. The temperature of the water bath and the duration of the test shall be such that the internal pressure in the cartridge reaches that which would be reached at 55 °C. No leakage or permanent deformation may occur, except that a plastic cartridge may be deformed through softening provided that it does not leak.”

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