

4. ANNEX

4.1. Test result

FILE n°	588045	Date :	04/09/2009
For :	VITZROCELL		
Tech :	SPENDEL laurent (LSp) KETTAM Hanafi (HKe)		

SHORT - CIRCUIT TEST

Test n°	1
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Standard : EN 60079-11 : 2007	Step :	Devices:	Siemens :	A7442029
Clause : §10.5		Multimeter :	A1240045	
Reference : SB-D02 3.6V	TEKCELL Lithium size D	Shunts :	A1091093 / A1091234	
Serial N° :	-			

PARAMETERS :

Tambiant = 17,1°C to 21,6°C
 Cells : New
 Rext < 3mΩ
 Observation : to + 12h

RESULTS : PASS

No rupture
 No explosion
 No fire
 No visible sign on the blotting paper
 T(ext) < 170°C

Remarks : -

RUN1 :

Thermocouples	Sample	U0 (Volt)	Icc (A)	Temperature MAX (°C)	Signs on paper ?
2	Sample 1	3.67	4,30	81,1	No
1	Ambiant = 18,2°C				

RUN2 :

Thermocouples	Sample	U0 (Volt)	Icc (A)	Temperature MAX (°C)	Signs on paper ?
2	Sample 2	3.67	5,5	92,7	No
3	Sample 3	3.67		96,9	No
4	Sample 4	3.67		91,5	No
1	Ambiant = 21,6°C				

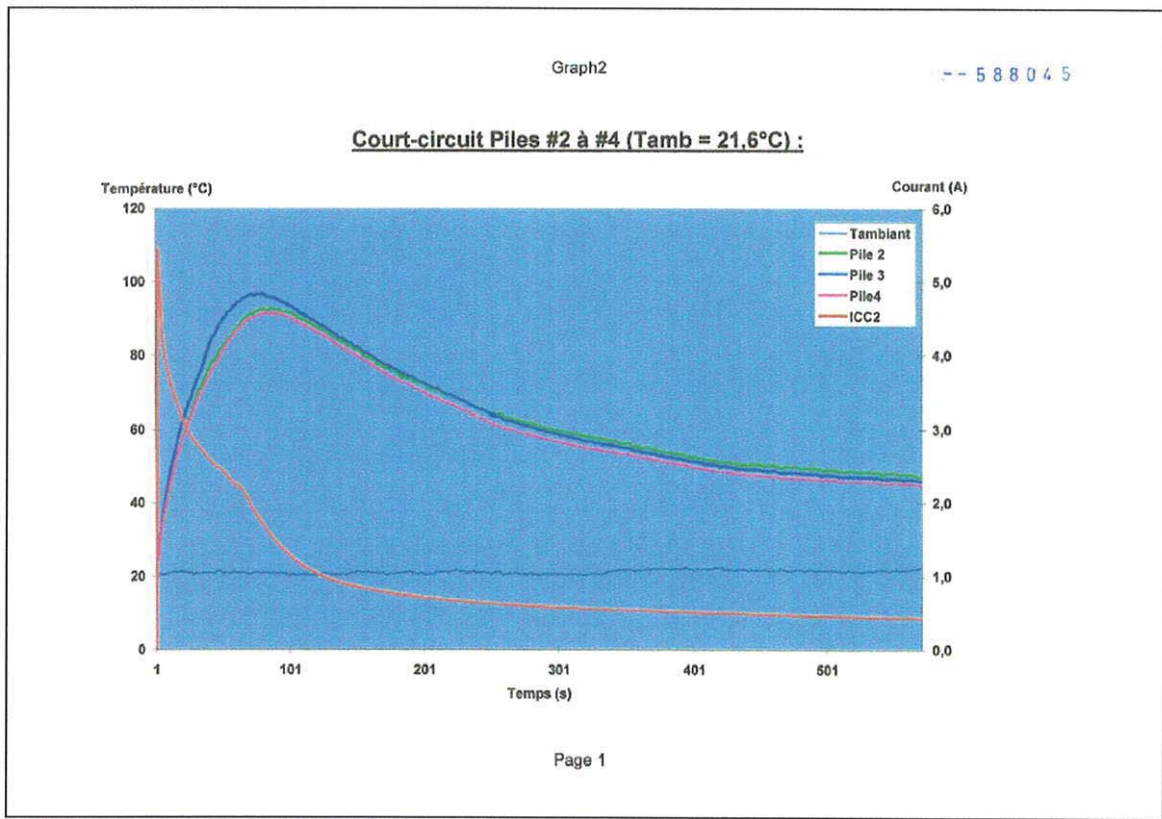
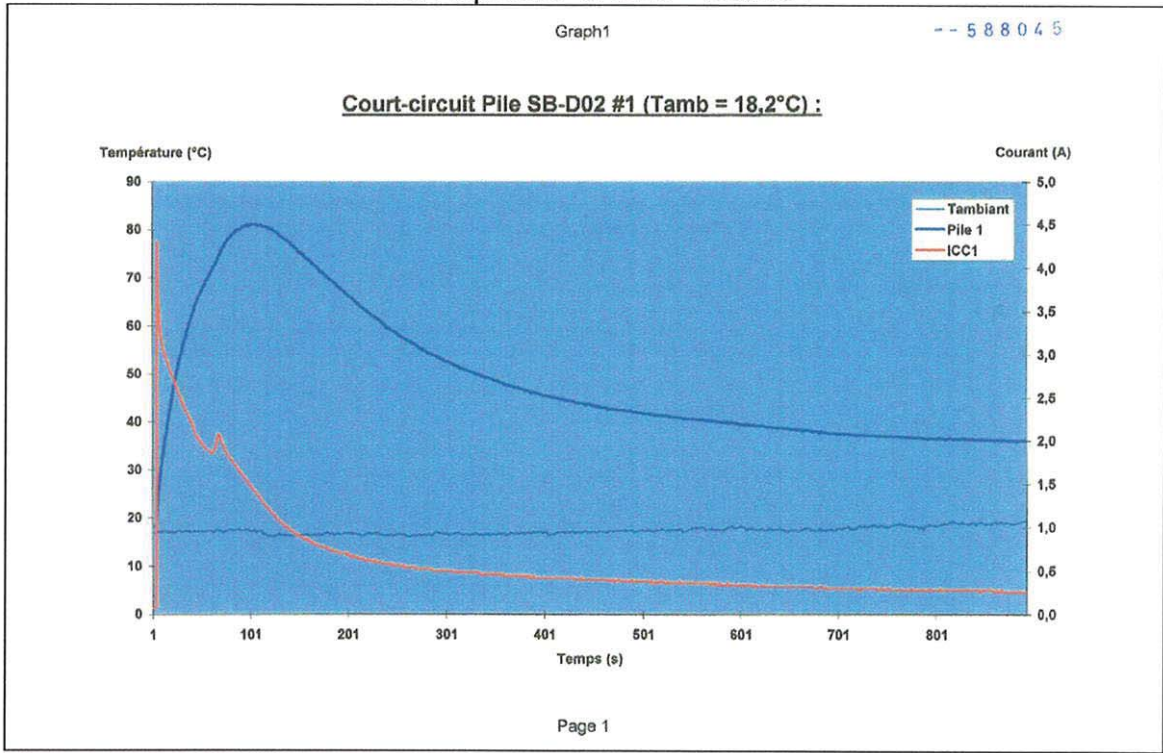
RUN3 :

Thermocouples	Sample	U0 (Volt)	Icc (A)	Temperature MAX (°C)	Signs on paper ?
2	Sample 5	3.67	5,2	90,2	No
3	Sample 6	3.67		96,3	No
4	Sample 7	3.67		90,1	No
1	Ambiant = 17,1°C				

RUN4 :

Thermocouples	Sample	U0 (Volt)	Icc (A)	Temperature MAX (°C)	Signs on paper ?
2	Sample 8	3.67	3,9	89,9	No
3	Sample 9	3.67		90,7	No
4	Sample 10	3.67		90,8	No
1	Ambiant = 19,4°C				

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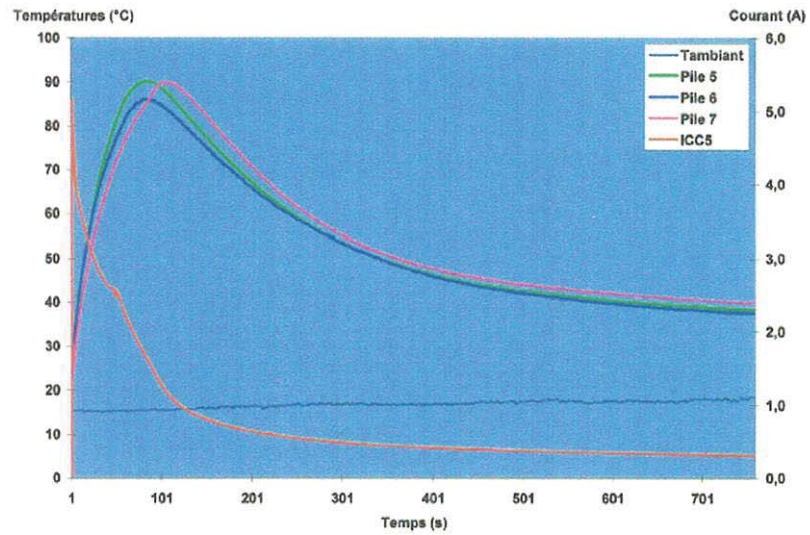


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Graph3

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Court-circuit Piles #5 à #7 (Tamb = 17,1°C) :



4.2. Maximum uncertainties chart result

This chart shows the maximum uncertainties values according to test that may be related in this document.

<i>Test</i>	Mesurement uncertainty (k = 2)
Current measurement	± 2,1%
Voltage measurement	± 2,1%
Resistance measurement	± 2%
Time or time interval	
• From 1s to 9min	± 0,3s
• > 9min	± 0,1%
Temperature measurement (directly by thermocouple)	± 2,8°C