

1. Purpose

This test verifies that the batteries are fully operational at ambient temperature from minus -40°C up to +50°C with preserving the actual capacity after a 10 hour discharge at not less than nominal capacity at 20°C, taking into account the temperature coefficient.

The test comprises three capacity tests; one at the reference temperature and the other two at the two extremes of the operational range.

2. Settings

The test is performed on a 2V 5 OPzS 250 sample.

Test current: 25A (DIN value)

Nominal Capacity: 270 Ah at reference temperature

Temperature point within operational range	Temperature Value	Temperature Co-efficient	Capacity requirement
at reference	+20 °C	1	270 Ah
at lower extreme	-40 °C	0.1	27 Ah
at upper extreme	+50 °C	1.10	297 Ah

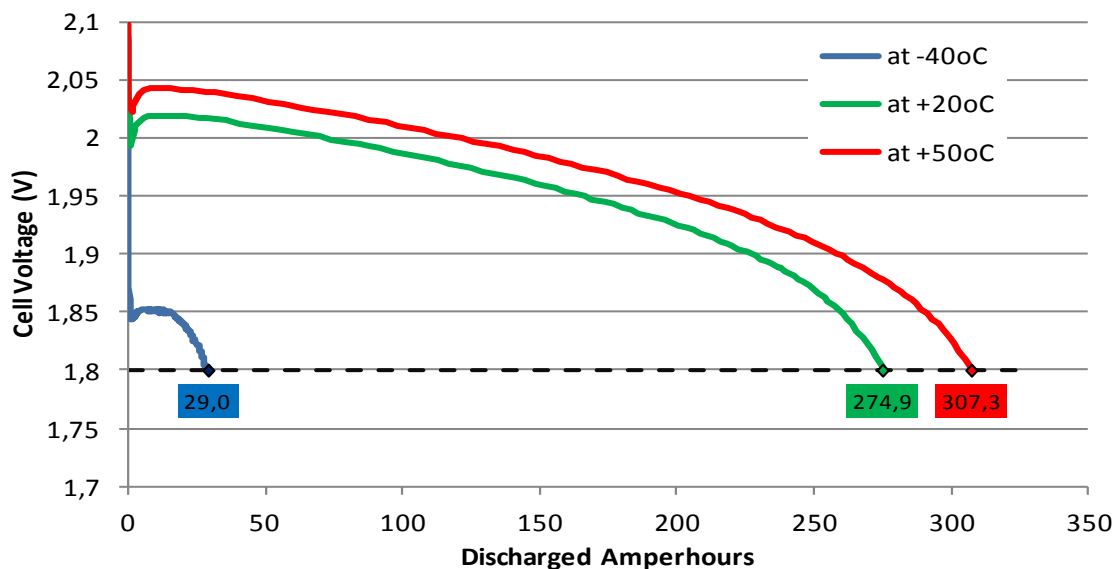
3. Test Description

The test cells are putted in a climatic chamber after a full charge. The conditioning time at the target temperature of -40°C, 20°C and 50°C is 24h. After climatic stress the capacity is measured without removing the cells from the chamber.

4. Test Results

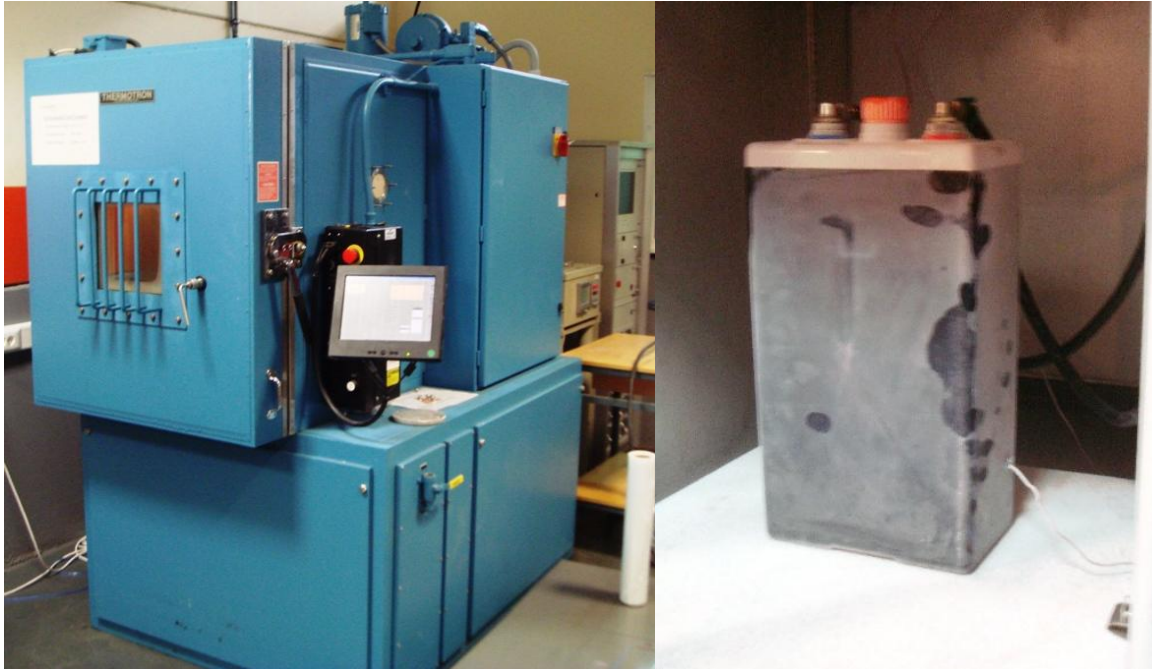
Capacity Results

Temperature Value	Temperature Co-efficient	Capacity requirement	Capacity result	Result
+20 °C	1	270 Ah	274.9 Ah	pass
-40 °C	0.1	27 Ah	29.0 Ah	pass
+50 °C	1.10	297 Ah	307.3 Ah	pass



Visual inspection

- without mechanical defects.



5. Conclusions

Test Successful.

The batteries are fully operational at ambient temperature from minus -40°C up to $+50^{\circ}\text{C}$.