

European Aviation Safety Agency

European Technical Standard Order

Subject: Nickel-Cadmium, Nickel Metal-Hydride, and Lead-Acid Batteries

1 — Applicability

This ETSO provides the requirements which Nickel-Cadmium, Nickel Metal-Hydride, and Lead-Acid Batteries that are designed and manufactured on or after the applicability date of this ETSO must meet in order to be identified with the applicable ETSO marking.

2 — Procedures

2.1 — General

Applicable procedures are detailed in CS-ETSO, Subpart A.

2.2 — Specific

None.

3 — Technical Conditions

3.1 — Basic

3.1.1 — Minimum Performance Standard

Standards set forth in the RTCA DO-293A, Minimum Operational Performance Standards (MPS) for Nickel-Cadmium, Nickel Metal-Hydride, and Lead-Acid Batteries, dated 12/2/2009, as amended according to Appendix 1 to this ETSO.

3.1.2 — Environmental Standard

Nickel-Cadmium, Nickel Metal-Hydride, and Lead-Acid Batteries shall be tested according to the conditions specified in RTCA DO-293A.

Where the RTCA DO-293A quotes the RTCA DO-160 standard, the applicable DO-160 standard revision is defined in CS-ETSO, Subpart A, paragraph 2.1.

ETSO-C173a

3.1.3 — Computer Software

See CS-ETSO, Subpart A, paragraph 2.2.

3.1.4 — Electronic Hardware Qualification

See CS-ETSO, Subpart A, paragraph 2.3.

3.2 — Specific

None.

3.2.1 — Failure Condition Classification

See CS-ETSO, Subpart A, paragraph 2.4.

4 — Marking

4.1 — General

Marking as detailed in CS-ETSO, Subpart A, paragraph 1.2.

4.2 — Specific

At least one major component shall be marked permanently and legibly with all the information in RTCA DO-293A, section 1.10, as modified by Appendix 1.

5 — Availability of Referenced Document

See CS-ETSO, Subpart A, paragraph 3.

APPENDIX 1

**MINIMUM PERFORMANCE STANDARD FOR NICKEL-CADMIUM, NICKEL METAL-HYDRIDE,
AND LEAD-ACID BATTERIES**

AMENDMENT TO RTCA DO-293A REQUIREMENTS

<i>RTCA/DO-293A section and title:</i>	<i>Amendment:</i>
1.10.1, Battery Marking	It shall be added to the bottom of the list of Manufacturer's markings: 11. End Point Voltage (EPV)
2.3.1, Rapid Discharge Capacity at 23 °C	It shall be deleted at the end of the paragraph and the Test Method: 'or the manufacturer recommended cutoff voltage'
2.3.2, Rapid Discharge Capacity at – 30 °C	It shall be deleted at the end of the paragraph and the Test Method: 'or the manufacturer recommended cutoff voltage'
3.12, Electrolyte Resistance	It shall be applied ONLY to heater blankets of this section the following: Testing method and evaluation criteria of MIL-PRF-8565 can be utilised in lieu of the testing method and evaluation criteria stipulated in paragraph 3.12 of RTCA /DO-293A.