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.
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

<table>
<thead>
<tr>
<th>RTCA/DO-293A section and title:</th>
<th>Amendment:</th>
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<tbody>
<tr>
<td>1.10.1, Battery Marking</td>
<td>It shall be added to the bottom of the list of Manufacturer’s markings: 11. End Point Voltage (EPV)</td>
</tr>
<tr>
<td>2.3.1, Rapid Discharge Capacity at 23 °C</td>
<td>It shall be deleted at the end of the paragraph and the Test Method: ‘or the manufacturer recommended cutoff voltage’</td>
</tr>
<tr>
<td>2.3.2, Rapid Discharge Capacity at –30 °C</td>
<td>It shall be deleted at the end of the paragraph and the Test Method: ‘or the manufacturer recommended cutoff voltage’</td>
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<tr>
<td>3.12, Electrolyte Resistance</td>
<td>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.</td>
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