

## ETSO-C179b

ED Decision 2020/011/R (applicable from 25.7.2020)

### RECHARGEABLE LITHIUM CELLS, BATTERIES, AND BATTERY SYSTEMS

#### 1 Applicability

This ETSO provides the requirements which rechargeable lithium cells, batteries, and battery systems that are designed and manufactured on or after the date of this ETSO must meet in order to be identified with the applicable ETSO marking.

#### 2 Procedures

##### 2.1 General

The 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

For equipment with rechargeable lithium cells, lithium batteries and battery systems that are intended to provide power for aircraft equipment, including emergency systems, the applicable standards are those provided in RTCA document DO-311A, Minimum Operational Performance Standards for Rechargeable Lithium Batteries and Battery Systems, dated 19 December 2017. However, the demonstration of compliance with this ETSO may not rely on Appendix C to DO-311A.

###### 3.1.2 Environmental Standard

Test the equipment according to Section 3 of RTCA document DO-311A, Minimum Operational Performance Standards for Rechargeable Lithium Batteries and Battery Systems, dated 19 December 2017.

###### 3.1.3 Software

See CS-ETSO, [Subpart A](#), paragraph 2.2.

###### 3.1.4 Airborne Electronic Hardware

See CS-ETSO, [Subpart A](#), paragraph 2.3.

##### 3.2 Specific

###### 3.2.1 Failure Condition Classification

See CS-ETSO, [Subpart A](#), paragraph 2.4.

#### 4 Marking

##### 4.1 General

See CS-ETSO, [Subpart A](#), paragraph 1.2.

#### 4.2 Specific

The specific marking requirements are detailed in Section 2.1.3 of RTCA document DO-311A, Minimum Operational Performance Standards for Rechargeable Lithium Battery Batteries and Systems document, dated 19 December 2017.

In addition, the article must be marked with:

- its serial number;
- ‘ETSO-C179b-CLASS A-XY’ or ‘ETSO C179b-CLASS B-XY’ as shown below (where X stands for the energy category and Y stands for the venting category as listed in the table below and defined in RTCA document DO-311A Sections 1.4.1 and 1.4.2):
  - ETSO-C179b CLASS A — During the RTCA document DO-311A Section 2.4.5.5 Battery Thermal Runaway Containment Test, all the cells within the battery must undergo thermal runaways.
  - ETSO-C179b CLASS B — During the RTCA document DO-311A Section 2.4.5.5 Battery Thermal Runaway Containment Test, not all the cells within the battery must undergo thermal runaways.

Energy Category (X)	Venting Category (Y)
1	A
1	B
1	C
2	A
2	B
2	C
3	A
3	B
3	C
4	A
4	B
4	C

(For example: ETSO-C179b CLASS B-1A would be a rechargeable lithium battery and battery system that is of energy category 1 and a venting category of A, and not all the cells underwent thermal runaways during the RTCA document DO-311A Section 2.4.5.5 testing.)

#### 5 Availability of Referenced Documents

See CS-ETSO, [Subpart A](#), paragraph 3.

[Amdt ETSO/7]

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