

14 CFR, Part 25 Special conditions

Rechargeable lithium batteries

In lieu of § 25.1353(b)(1) through (b)(4) at Amendment 25-xxx, each non-rechargeable lithium battery installation must:

1. Maintain safe cell temperatures and pressures under all foreseeable operating conditions to prevent fire and explosion.
2. Prevent the occurrence of self-sustaining, uncontrollable increases in temperature or pressure, and automatically control the charge rate of each cell to protect against adverse operating conditions, such as cell imbalance, back charging, overcharging and overheating.
3. Not emit explosive or toxic gases, either in normal operation or as a result of its failure, that may accumulate in hazardous quantities within the airplane.
4. Meet the requirements of § 25.863.
5. Not damage surrounding structure or adjacent systems, equipment, or electrical wiring from corrosive fluids or gases that may escape in such a way as to cause a major or more-severe failure condition.
6. Have provisions to prevent any hazardous effect on airplane structure or systems caused by the maximum amount of heat it can generate due to any failure of it or its individual cells.
7. Have a failure sensing and warning system to alert the flightcrew if its failure affects safe operation of the airplane.
8. If its function is required for safe operation of the airplane, have a monitoring and warning feature that alerts the flightcrew when its charge state falls below acceptable levels.
9. Have a means to automatically disconnect from its charging source in the event of an over-temperature condition, cell failure or battery failure.

Non-Rechargeable Lithium Battery Installations

In lieu of § 25.1353(b)(1) through (b)(4) at Amendment 25-xxx, each non-rechargeable lithium battery installation must:

1. Maintain safe cell temperatures and pressures under all foreseeable operating conditions to prevent fire and explosion.
2. Prevent the occurrence of self-sustaining, uncontrollable increases in temperature or pressure.
3. Not emit explosive or toxic gases, either in normal operation or as a result of its failure, that may accumulate in hazardous quantities within the airplane.
4. Meet the requirements of § 25.863.
5. Not damage surrounding structure or adjacent systems, equipment, or electrical wiring from corrosive fluids or gases that may escape in such a way as to cause a major or more-severe failure condition.
6. Have provisions to prevent any hazardous effect on airplane structure or systems caused by the maximum amount of heat it can generate due to any failure of it or its individual cells.
7. Have a failure sensing and warning system to alert the flightcrew if its failure affects safe operation of the airplane.
8. Have a means for the flightcrew or maintenance personnel to determine the battery charge state if the battery's function is required for safe operation of the airplane.

Note:

A battery system consists of the battery and any protective, monitoring, and alerting circuitry or hardware inside or outside of the battery. It also includes vents (where necessary) and packaging. For the purpose of these special conditions, a “battery” and “battery system” are referred to as a battery.