

Lithium-Ion Batteries

POWERED MOBILITY DEVICE FIRE SAFETY LEGISLATION



Powered Mobility Devices

A conveyance powered by a lithium-ion battery with the primary purpose of carrying and transporting people

Includes:

- Electric bicycles
- Electric skateboards
- Electric scooters
- Electric hoverboards
- Light electric vehicles

*** Does not include wheelchairs or other devices for use by persons with disabilities

Hazards of lithium-ion batteries in powered mobility devices

Overcharging can cause:

- Thermal runaway
- Fires
- Explosion risk
- Toxic fumes

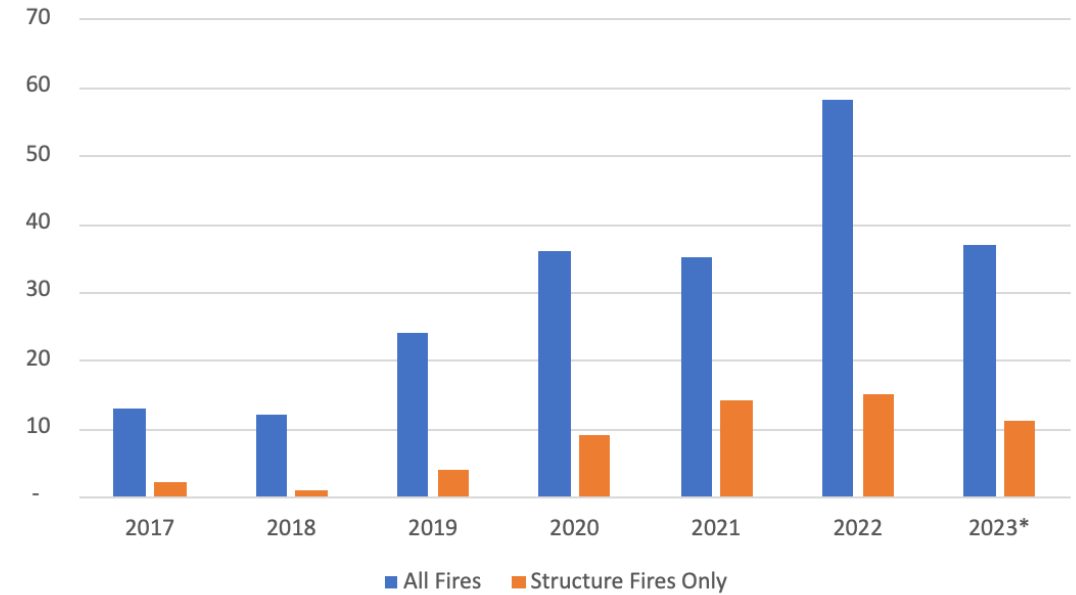
Difficulty of extinguishing lithium-ion battery fires



LITHIUM BATTERY SPARKS APARTMENT FIRE
SAN FRANCISCO

Year	Total Fires	Structure Fires Only	Injuries	Fatalities
2017	13	2	-	-
2018	12	1	-	-
2019	24	4	-	-
2020	36	9	4	-
2021	35	14	1	-
2022	58	15	2	1
2023*	37	11	1	-

Rechargeable Batteries- Fire Incidents



Lithium-Ion Battery Fires in San Francisco 2017-2023

New SF Fire Code Legislative Changes

- 1) Establishes standards for the charging and storage of lithium-ion batteries
- 2) Prohibits the use of damaged batteries
- 3) Prohibits the sale, use, or assembly of reconditioned lithium-ion batteries using cells from used batteries
- 4) Requires the SFFD to develop a public informational campaign

Standards for the charging and storage of lithium-ion batteries

Limits up to three (3) powered mobility devices in homes (R-3) and dwelling units (R-2)

- All devices must be for personal use only

Batteries shall be charged per manufacturer's instructions

- Original equipment or manufacturer supplied chargers
- Chargers shall be listed (e.g., UL 1564, UL1310, UL2272, UL2849)

Battery inspection required prior to each charging if the battery was dropped or is damaged

- Cracks
- Leaking
- Punctures

Charging or storing more than three (3) batteries or powered mobility devices in your home or business?

Room or area shall have:

- Sufficient natural or mechanical ventilation
- Electrical receptacles for each battery charger
- Fire extinguishers
- Sprinklers and fire alarm system, if charging six (6) or more batteries
- Prohibit the use of power-strips and extension cords for charging
- No storage of flammables or combustibles

Sets minimum separation distance between batteries while charging

- 2-feet spacing for up to 20kWh max. aggregate*
- 3-feet spacing for up to 50kWh max. aggregate*
- *Unless using a NRTL or SFFD approved battery storage or charging cabinet

Use of damaged batteries is prohibited

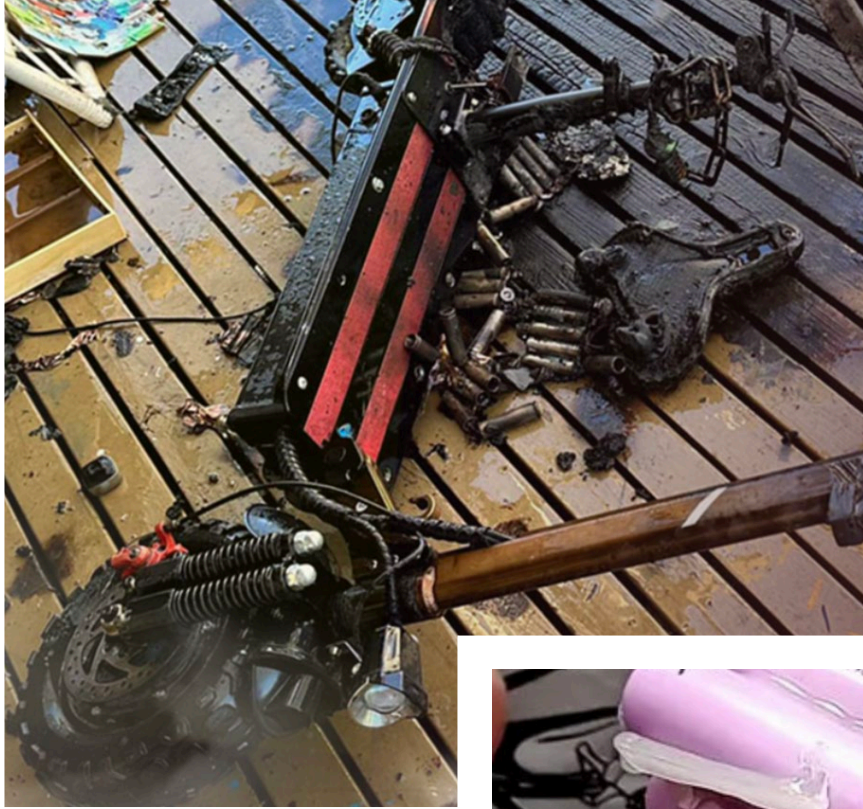
Requires lithium-ion batteries be removed from use if any of the following are found:

- Cracks
- Leaking fluids
- Punctures
- Bulging
- Overheating
- Odors or smoke

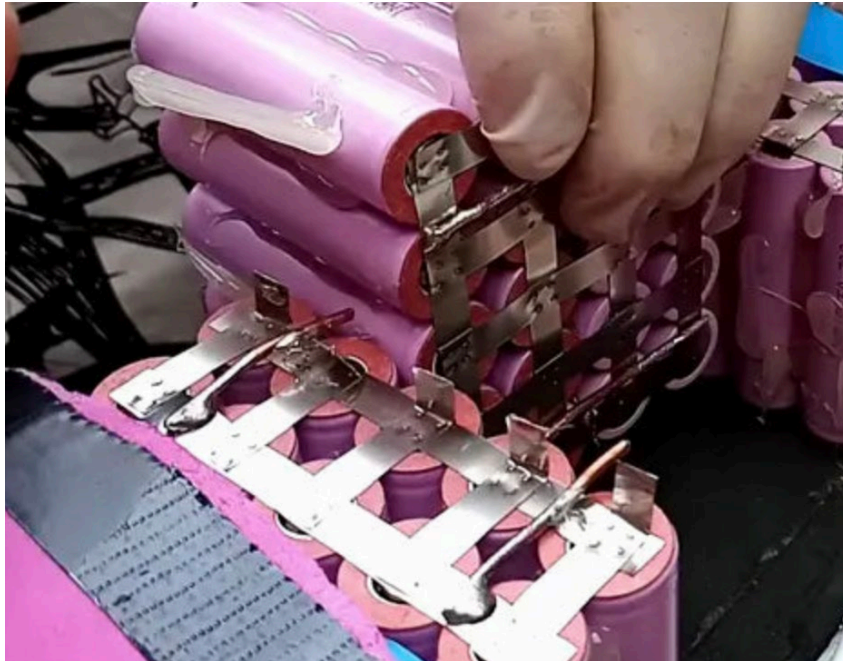
Lithium-ion batteries shall be recycled

DO NOT throw batteries in trash!!!





Prohibits the sale, use,
or assembly of
reconditioned lithium-
ion batteries using
cells from used
batteries



SFFD Fire Marshal's
Office shall develop a
public informational
campaign on
Lithium-ion battery
fire risks and safety

- Battery equipment standards
- Maintenance and care of batteries
- Storage and charging precautions
- Prohibition of assembly, purchase, and/or sale of second-use or reconditioned batteries

Questions?