

1 [Fire Code - Lithium-Ion Batteries in Powered Mobility Devices]

2

3 **Ordinance amending the Fire Code to provide fire protection standards for the**  
4 **charging and storage of lithium-ion batteries used in powered mobility devices (such**  
5 **as electric bikes, scooters, skateboards, and hoverboards), prohibit use of damaged**  
6 **lithium-ion batteries in such devices, prohibit use of lithium-ion batteries assembled or**  
7 **reconditioned using cells removed from used batteries in such devices, and require the**  
8 **Fire Department to conduct an informational campaign; affirming the Planning**  
9 **Department’s determination under the California Environmental Quality Act; and**  
10 **directing the Clerk of the Board of Supervisors to forward this ordinance to the**  
11 **California Building Standards Commission upon final passage.**

12 NOTE: **Unchanged Code text and uncodified text** are in plain Arial font.  
13 **Additions to Codes** are in *single-underline italics Times New Roman font*.  
14 **Deletions to Codes** are in *strikethrough italics Times New Roman font*.  
15 **Board amendment additions** are in double-underlined Arial font.  
16 **Board amendment deletions** are in ~~strikethrough Arial font~~.  
17 **Asterisks (\* \* \* \*)** indicate the omission of unchanged Code  
18 subsections or parts of tables.

19 Be it ordained by the People of the City and County of San Francisco:

20 Section 1. Environmental Findings. The Planning Department has determined that the  
21 actions contemplated in this ordinance comply with the California Environmental Quality Act  
22 (California Public Resources Code Sections 21000 et seq.). Said determination is on file with  
23 the Clerk of the Board of Supervisors in File No. 231165 and is incorporated herein by  
24 reference. The Board affirms this determination.

25

1           Section 2. Findings under California Health and Safety Code. The Board of  
2 Supervisors hereby finds that the following local conditions apply to the amendments to the  
3 San Francisco Fire Code enacted by this ordinance:

4           (a) The City and County of San Francisco is unique among California communities with  
5 respect to the possible causes and effects of fires, including fires in residential multi-unit  
6 buildings. Among other things, San Francisco is located on an active seismic zone; certain  
7 buildings in San Francisco are at an increased risk for earthquake-induced failure and  
8 consequent fire because of local hazardous microzones, slide areas, and local liquefaction  
9 hazards; and enhanced fire, structural, and other protections are required due to high building  
10 density, the prevalence of wood structures, and high occupancy in many buildings.

11           (b) San Francisco has narrow and crowded sidewalks due to building and population  
12 density and unusual topography; and San Francisco has numerous high-rise buildings,  
13 including residential buildings with large numbers of people living therein. For these reasons,  
14 fires in San Francisco can be especially devastating, and the need for extra measures to  
15 prevent, prepare for, and cope with fires is especially pressing.

16           (c) The number of lithium-ion battery-based fires has increased dramatically with the  
17 growing prevalence of such batteries in consumer products. Lithium-ion batteries contain  
18 flammable materials and present a fire and explosion hazard, particularly when batteries are  
19 damaged or improperly charged or stored. Fires caused by lithium-ion batteries can be  
20 particularly devastating, due to the chemical hazards posed by such fires, their tendency to  
21 flash and grow quickly in size, and the difficulty of extinguishing them.

22           (d) The fire risk posed by lithium-ion batteries used in powered mobility devices, such  
23 as electric bikes, scooters, skateboards, and hoverboards, is particularly high due to the size  
24 of batteries necessary to power such devices, the frequency of collisions and corresponding  
25 damage to batteries, and the frequency of re-charging batteries for mobility devices that are

1 often used on a daily basis. In San Francisco, the fire risk is heightened by local conditions,  
2 including narrow streets and traffic congestion, which increase the likelihood that batteries  
3 used to power conveyances traveling on City streets are damaged by collision or impact.

4 (e) In San Francisco, numerous fire incidents have been attributed to rechargeable  
5 batteries in recent years. In 2020, according to Fire Department records, 21 fire incidents  
6 were attributed to rechargeable batteries. In 2021, 17 fire incidents were attributed to  
7 rechargeable batteries. In 2022, 31 fire incidents were attributed to rechargeable batteries. In  
8 2023, as of early November, 21 fire incidents have been attributed to rechargeable batteries,  
9 according to Fire Department records.

10 (f) California Health and Safety Code Sections 17958 and 17958.5 allow the City to  
11 make changes or modifications in the requirements contained in the provisions published by  
12 the California Building Standards Commission, including the California Fire Code, when those  
13 changes or modifications are reasonably necessary because of local climatic, geological, or  
14 topographical conditions. California Health and Safety Code Section 17958.7 provides that  
15 before making any such changes or modifications, the governing body must make express  
16 findings that such changes or modifications are reasonably necessary because of the  
17 specified local conditions, and those findings shall be filed with the California Building  
18 Standards Commission.

19 (g) Pursuant to the applicable California Health and Safety Code sections, the Board of  
20 Supervisors finds and determines that the conditions described above constitute a general  
21 summary of the most significant local conditions giving rise to the need for variance from the  
22 California Fire Code and any other applicable provisions published by the California Building  
23 Standards Commission through the proposed regulations to mitigate the significant fire risk  
24 associated with use, charging, and storage of lithium-ion batteries used in powered mobility  
25 devices. Further, the Board of Supervisors finds and determines that the fire safety

1 regulations in this ordinance are reasonably necessary based on these local conditions, in the  
2 densest major city in the State of California, and that these conditions justify more restrictive  
3 standards applicable to the use, charging, and storage of lithium-ion batteries used in  
4 powered mobility devices, which are becoming ever more ubiquitous on City streets.

5  
6 Section 3. Part II, Chapter 3 of the Fire Code is hereby amended by adding Section  
7 325, consisting of Sections 325.1, 325.2, 325.3, 325.4, 325.5, 325.6, 325.7, 325.8, and 325.9,  
8 to read as follows:

9 **SECTION 325. – LITHIUM-ION BATTERIES USED IN POWERED MOBILITY**  
10 **DEVICES.**

11 *325.1. Definitions. For purposes of this Section 325, the following definition applies:*

12 *“Powered Mobility Device” means a conveyance with the primary purpose of carrying people*  
13 *and is capable of transporting one or more persons powered by a lithium-ion battery; which includes,*  
14 *but is not limited to, a motorized or powered scooter, an electric bicycle, an electric skateboard, an*  
15 *electric hoverboard, or light electric vehicle (LEV). Notwithstanding the previous sentence, Powered*  
16 *Mobility Device does not include wheelchairs or other mobility devices designed for use by persons*  
17 *with disabilities, or any vehicle capable of being registered with the California Department of Motor*  
18 *Vehicles.*

19 *“Battery Cabinet” means a cabinet that is designed for the purpose of storage and/or*  
20 *charging of lithium-ion battery packs or other removable lithium-ion storage batteries that has*  
21 *demonstrated the ability to prevent thermal propagation from a battery pack or a removable*  
22 *storage battery to other adjacent battery packs or removable storage batteries, and has*  
23 *passed testing by a Nationally Recognized Testing Laboratory, or has otherwise been*  
24 *approved by the Fire Department.*

1           **325.2. General Requirement.** The use, sale, transfer, charging, and storage of lithium-ion  
2 batteries used in Powered Mobility Devices shall comply with Section 325.

3           **325.3. Powered Mobility Devices.** Powered Mobility Devices using a storage, charging, or  
4 repair facility, including any storage or charging area in a Group B, R-1, R-2, F, S, or M occupancy,  
5 that is designed, installed, operated, and maintained in accordance with the Building and Electrical  
6 Codes, shall comply with Sections 325.4 through 325.7.

7           Exceptions:

8           (a) Storage and charging in a Group R-3 occupancy, or within a dwelling unit in a Group R-2  
9 occupancy, of not more than three Powered Mobility Devices, provided that such Powered Mobility  
10 Devices are for personal use.

11           (b) Charging of a single Powered Mobility Device by and in the presence of its owner or user  
12 in occupancies other than Group H or L.

13           **325.4. Battery Chargers.** Powered Mobility Devices shall be charged in accordance with the  
14 manufacturer's instructions and the applicable listing standard using the original equipment,  
15 manufacturer-supplied charging equipment, or other charging equipment suitable for the purpose, that  
16 is designed in accordance with applicable federal, state, and any other applicable laws, rules, and  
17 regulations, and listed:

18           (a) Pursuant to either UL 1564, UL1310, UL1012, or other approved listing from a Nationally-  
19 Recognized Testing Laboratory; or

20           (b) For use with the Powered Mobility Device in accordance with UL 2272, UL 2849, or other  
21 approved listing from a Nationally-Recognized Testing Laboratory.

22           **325.5. Battery Inspection; Damaged Batteries.** A lithium-ion battery used in a Powered  
23 Mobility Device shall be inspected for cracks, punctures, leaking contents, or other damage prior to  
24 charging or re-charging if the battery was dropped, involved in a collision, or otherwise subjected to a  
25 potential mechanism of damage. Damaged lithium-ion batteries shall not be used in Powered Mobility

1 Devices. Damaged lithium-ion batteries and lithium-ion batteries at the end of their useable life shall  
2 be promptly and lawfully disposed of.

3 **325.6. Battery Charging Areas. Powered Mobility Devices shall be charged in a suitable**  
4 **indoor room or area, or outdoor location, that, in either location:**

5 (a) Has sufficient natural or mechanical ventilation in accordance with the Mechanical Code to  
6 prevent the accumulation of any flammable or other gases that may be discharged during normal  
7 charging operations;

8 (b) Has an adequate electrical supply and a sufficient number of electrical receptacles to allow  
9 the charging equipment for each device or item of equipment to be directly connected to an electrical  
10 receptacle. Extension cords and power strips shall not be used. A minimum of 3 feet (914 mm) shall be  
11 maintained between each Powered Mobility Device during charging operations;

12 (c) Has an adequate electrical supply and a sufficient number of electrical receptacles to allow  
13 the charging equipment for battery packs and other removable storage batteries to be directly  
14 connected to an electrical receptacle. Extension cords and power strips shall not be used. Battery  
15 packs and other removable storage batteries shall not be stacked or charged in an enclosed cabinet  
16 unless the cabinet is an approved Battery Cabinet designed for such purpose and approved by  
17 a Nationally Recognized Testing Laboratory, or by the Fire Department. Except as otherwise  
18 approved by the Fire Department, a minimum distance of 2 feet (610 mm) shall be maintained between  
19 each battery pack or other removable storage battery during charging operations, provided that the  
20 aggregate energy capacity of battery packs or other removable storage batteries that can be  
21 simultaneously charged in a single Fire Area does not exceed 20 kWh. A minimum distance of 3 feet  
22 (914 mm) shall be maintained between each battery pack or other removable storage battery during  
23 charging operations if the aggregate energy capacity exceeds 20 kWh. The aggregate energy capacity  
24 of battery packs or other removable batteries that can be simultaneously charged in a single fire area  
25 shall not exceed 50 kWh. The minimum separation distance requirements of this subsection

1 shall not apply to battery packs or other removable storage batteries during storage or  
2 charging within a Battery Cabinet. Each approved Battery Cabinet shall be considered a  
3 single Fire Area with an aggregate energy capacity not exceeding 50kWh;

4 (d) Is not used for the storage of flammable or combustible liquids, combustible waste, or  
5 hazardous materials;

6 (e) Is separated within a Battery Cabinet, or by a fire barrier with a minimum one-hour fire-  
7 resistance rating from areas in which repairs or other servicing is conducted on the battery or other  
8 electrical components of the Powered Mobility Device;

9 (f) Is dedicated for battery charging and secured from unauthorized entry; where six or more  
10 Powered Mobility Devices are being charged at a single indoor location, using a Battery Cabinet or,  
11 separated by a fire barrier which encloses the entire space with a minimum one-hour fire-resistance  
12 rating; and protected by a fire sprinkler system complying with Section 903.3.1.1 of the Fire Code, and  
13 having one or more smoke detectors. The building or occupancy shall be equipped with an automatic  
14 fire detection and alarm system complying with Section 907 of the Fire Code. If the ambient  
15 temperature of the room during battery charging operations exceeds the limitations set forth in the  
16 manufacturer's instructions or the equipment listing, the room or area shall be temperature controlled  
17 to prevent over-heating or other unsafe battery condition; and

18 (g) Is provided with a portable fire extinguisher complying with the requirements of Section 906  
19 of the Fire Code and having a minimum 4-A:20-B:C rating.

20 **325.7. Storage Areas.** Indoor storage rooms and areas, or outdoor enclosures used for the  
21 storage, but not for the charging or repair, of Powered Mobility Devices shall comply with the  
22 requirements of Section 325.6(d), (e), and (g).

23 **325.8. Reassembled or Reconditioned Lithium-Ion Batteries.** It shall be unlawful to:

24 (a) Assemble or recondition a lithium-ion battery for use in a Powered Mobility Device using  
25 cells removed from used lithium-ion batteries; or

1           (b) Sell, offer for sale, give, or transfer a lithium-ion battery for use in a Powered Mobility  
2 Device that uses cells removed from used lithium-ion batteries.

3           **325.9. Informational Campaign.**

4           (a) The Fire Department shall develop an informational campaign to educate the public on the  
5 fire risks posed by Powered Mobility Devices and lithium-ion batteries and safety measures that  
6 mitigate such risks. Such campaign shall include, but not be limited to, the use of print, online, and  
7 social media advertisements, public service announcements, and public forums. Such campaign shall  
8 address both commercial and personal use of Powered Mobility Devices and lithium-ion batteries,  
9 including, but not limited to, guidance on:

10                   (1) Powered Mobility Devices and battery equipment that meet established fire safety  
11 standards;

12                   (2) Maintenance and care information for Powered Mobility Devices and lithium-ion  
13 batteries;

14                   (3) Storage and charging precautions for Powered Mobility Devices and lithium-ion  
15 batteries; and

16                   (4) Prohibitions on the assembly and sale of second-use lithium-ion batteries as  
17 described in Fire Code Section 325.8.

18           (b) All forms of public notice provided pursuant to this Section 325.9 shall comply with the  
19 requirements of the Language Access Ordinance, Chapter 91 of the Administrative Code, to provide  
20 vital information about the Department's programs in the languages spoken by a Substantial Number  
21 of Limited English Speaking Persons, as defined in Chapter 91.

22  
23           Section 4. Chapter 1 of the Fire Code, Division II, Part I, Section 112, is hereby  
24 amended by revising Section 112.1, to read as follows:

25           **112.1. [For SF] Unlawful Acts.**



1 (a) It shall be unlawful for a person to erect, construct, enlarge, alter, repair, move,  
2 improve, remove, convert, demolish, equip, charge, store, use, occupy, or maintain a building,  
3 occupancy, premises, system, conveyance, battery, or vehicle, or any portion thereof, or cause  
4 the same to be done, in violation of any of the provisions of this code.

5 \* \* \* \*

6  
7 Section 5. Scope of Ordinance. In enacting this ordinance, the Board of Supervisors  
8 intends to amend only those words, phrases, paragraphs, subsections, sections, articles,  
9 numbers, punctuation marks, charts, diagrams, or any other constituent parts of the Municipal  
10 Code that are explicitly shown in this ordinance as additions, deletions, Board amendment  
11 additions, and Board amendment deletions in accordance with the “Note” that appears under  
12 the official title of the ordinance.

13  
14 Section 6. No Conflict with Federal or State Law. Nothing in this ordinance shall be  
15 interpreted or applied so as to create any requirement, power, or duty in conflict with any  
16 federal or state law.

17  
18 Section 7. Undertaking for the General Welfare. In enacting and implementing this  
19 ordinance, the City is assuming an undertaking only to promote the general welfare. It is not  
20 assuming, nor is it imposing on its officers and employees, an obligation for breach of which it  
21 is liable in money damages to any person who claims that such breach proximately caused  
22 injury.

23  
24 Section 8. Severability. If any section, subsection, sentence, clause, phrase or word of  
25 this ordinance, or any application thereof to any person or circumstance, is held to be invalid

1 or unconstitutional by a decision of court of competent jurisdiction, such decision shall not  
2 affect the validity of the remaining portions or applications of this ordinance. The Board of  
3 Supervisors hereby declares that it would have passed this ordinance and each and every  
4 subsection, sentence, clause, phrase, and word not declared invalid or unconstitutional  
5 without regard to whether any portion of this ordinance or application thereof would be  
6 subsequently declared invalid or unconstitutional.

7

8 Section 9. Effective Date. This ordinance shall become effective 30 days after  
9 enactment. Enactment occurs when the Mayor signs the ordinance, the Mayor returns the  
10 ordinance unsigned or does not sign the ordinance within ten days of receiving it, or the Board  
11 of Supervisors overrides the Mayor's veto of the ordinance.

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13 Section 10. Directions to the Clerk. The Clerk of the Board of Supervisors is hereby  
14 directed to forward a copy of this ordinance to the California Building Standards Commission  
15 upon final passage as required by state law.

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18 APPROVED AS TO FORM:  
19 DAVID CHIU, City Attorney

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By: \_\_\_\_\_  
JEN HUBER  
Deputy City Attorney

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