2022 San Francisco Fire Code

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

325.1. Definitions.

For purposes of this Section 325, the following definitions apply:

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

"Battery Cabinet" means a cabinet that is designed for the purpose of storage and/or charging of lithium-ion battery packs or other removable lithium-ion storage batteries that has demonstrated the ability to prevent thermal propagation from a battery pack or a removable storage battery to other adjacent battery packs or removable storage batteries, and has passed testing by an accredited laboratory, or has otherwise been approved by the Fire Department.

"Safety-Certified Powered Mobility Device" means a Powered Mobility Device for which the Powered Mobility Device, or its electrical system, has been certified for compliance with:

(1) Underwriters Laboratories (UL) standards UL 2849 or UL 2272;

(2) European (EN) standards EN 15194 or EN 17128; or

(3) Other safety standard of an accredited laboratory, approved by the Fire Department.

325.2. General Requirement.

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

325.3. Powered Mobility Devices.

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

Exceptions:

(a) Storage and charging in a Group R-3 occupancy where each Powered Mobility Device is a Safety-Certified Powered Mobility Device.

(b) Storage and charging, or within a single dwelling unit, garage, or storage area in a Group R-2 occupancy, of not more than four Powered Mobility Devices, provided that such Powered Mobility Devices are for the personal use of a person occupying the unit, and where each Powered Mobility Device is a Safety-Certified Powered Mobility Device.

325.4. Battery Chargers.

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

(a) Pursuant to either UL 1564, UL1310, UL1012, or other approved listing from an accredited laboratory, approved by the Fire Department; or

(b) For use with the Powered Mobility Device in accordance with UL 2271, UL 2272, UL 2849, or other approved listing from an accredited laboratory, approved by the Fire Department.

325.5. Battery Inspection; Damaged Batteries.

A lithium-ion battery used in a Powered Mobility Device shall be inspected for cracks, punctures, leaking contents, or other damage prior to charging or re-charging if the battery was

dropped, involved in a collision, or otherwise subjected to a potential mechanism of damage. Damaged lithium-ion batteries shall not be used in Powered Mobility Devices. Damaged lithium-ion batteries and lithium-ion batteries at the end of their usable life shall be promptly and lawfully disposed of.

325.6. Battery Charging Areas.

Powered Mobility Devices and lithium-ion batteries used in such devices shall be charged in a suitable indoor room or area, or outdoor location, that, in either location:

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

(b) For the charging of Powered Mobility Devices with attached or enclosed batteries, has an adequate electrical supply and a sufficient number of electrical receptacles to allow each device to be directly connected to an electrical receptacle. Extension cords and power strips shall not be used. A minimum of 3 feet (914 mm) shall be maintained between each Powered Mobility Device during charging operations. Subject to the approval of the Fire Department, the minimum 3 feet (914 mm) separation distance while charging multiple Powered Mobility Devices may be reduced to a minimum of 6 inches (152mm) if the Powered Mobility Device is UL 2272 listed, contains a UL 2271 listed battery tested and certified by an accredited laboratory, and such battery is contained in a completely enclosed non-combustible compartment within the Powered Mobility Device that has been tested and certified by an accredited laboratory;

(c) For the charging of detached battery packs or other removable storage batteries, has an adequate electrical supply and a sufficient number of electrical receptacles to allow the charging equipment for battery packs and other removable storage batteries to be directly connected to an electrical receptacle. Extension cords and power strips shall not be used. Battery packs and other removable storage batteries shall not be stacked or charged in an enclosed cabinet unless the cabinet is a Battery Cabinet approved by the Fire Department. Except as otherwise approved by the Fire Department, a minimum distance of 2 feet (610 mm) shall be

maintained between each battery pack or other removable storage battery during charging operations, provided that the aggregate energy capacity of battery packs or other removable storage batteries that can be simultaneously charged in a single Fire Area does not exceed 20 kWh. A minimum distance of 3 feet (914 mm) shall be maintained between each battery pack or other removable storage battery during charging operations if the aggregate energy capacity exceeds 20 kWh. The aggregate energy capacity of battery packs or other removable batteries that can be simultaneously charged in a single fire area shall not exceed 50 kWh. The minimum separation distance requirements of this subsection (c) shall not apply to battery packs or other removable storage batteries during storage or charging within a Battery Cabinet. Each approved Battery Cabinet shall be considered a single Fire Area with an aggregate energy capacity not exceeding 50kWh;

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

(e) Is separated by:

(1) A fire barrier with a minimum one-hour fire-resistance rating, or enclosure within Battery Cabinet, from areas in which repairs or other servicing are conducted on the battery or other electrical components of the Powered Mobility Device in a Group B, R-1, R-2, F, or S occupancy; or

(2) In an M occupancy, a minimum distance of at least 10 feet (3048 mm) from areas where Powered Mobility Devices are displayed for retail sale, stored, or where repairs or other servicing are conducted on the battery or other electrical components of the Powered Mobility Device, and where each Powered Mobility Device for sale is a Safety-Certified Powered Mobility Device.

(f) Where five or more Powered Mobility Devices, detached battery packs, or other removable storage batteries are being charged at a single indoor location, separated by a fire barrier that encloses the entire space with a minimum one-hour fire-resistance rating; is separated within the enclosure of a Battery Cabinet; or in an M occupancy, is separated by a minimum distance of 10 feet (3048 mm) from areas where Powered Mobility Devices are displayed for

sale. The building or occupancy shall be equipped with a fire sprinkler system complying with Section 903.3.1.1 of the Fire Code, an automatic fire detection and alarm system complying with Section 907 of the Fire Code and have one or more smoke detectors. If the ambient temperature of the room during battery charging operations exceeds the limitations set forth in the manufacturer's instructions or the equipment listing, the room or area shall be temperature controlled to prevent over-heating or other unsafe battery condition; and

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

325.7. Storage Areas.

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

325.8. Reassembled or Reconditioned Lithium-Ion Batteries.

Except as part of a City-authorized recycling program with required permits, and subject to obtaining safety certification from an accredited laboratory and the Fire Department's approval of such certification, it shall be unlawful to:

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

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

325.9. Informational Campaign.

(a) The Fire Department, in consultation with the Department of the Environment, shall develop an informational campaign to educate the public on the fire risks posed by Powered Mobility Devices and lithium-ion batteries and safety measures that mitigate such risks. Such campaign shall include, but not be limited to, the use of print, online, and social media

advertisements, public service announcements, and public forums. Such campaign shall address both commercial and personal use of Powered Mobility Devices and lithium-ion batteries, including, but not limited to, guidance on:

(1) Powered Mobility Devices and battery equipment that meet established fire safety standards, including Safety-Certified Powered Mobility Devices;

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

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

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

(5) Proper disposal of, and recycling solutions for, lithium-ion batteries at the end of their life; and

(6) Information about available programs and rebates for consumers to obtain Safety-Certified Powered Mobility Devices.

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

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