



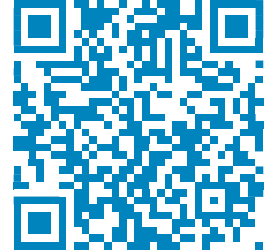
FDNY

BUREAU OF FIRE PREVENTION

9 Metro Tech Center, 3rd Floor

Brooklyn, NY, 11201

To: Dylan Vandemark
From: New York City Fire Department
Date: Mar 6, 2023
Record ID: 2022-TMCOAP-005531-CERT



Premises Address: City-Wide

BIN N/A

Application Type: Certificate of Approval

Result: Letter of No Objection

Dear Dylan Vandemark,

The Fire Department is in receipt of your TM-2 application and documentation for the use of CellBlock FCS's Charge Safe Battery Rack. FC 309.3.3 (3) provides that battery packs and other removable storage batteries shall not be charged in an enclosed cabinet unless the cabinet is specially designed and approved by the Department for such purpose. Pursuant to this, a Letter of No Objection, instead of Certificate of Approval, would be issued.

Manufacturer: CellBlock FCS, LLC. 234 Northeast Road Unit #5, Standish, Maine 04084

Product: Charge Safe Battery Rack

Model Number(s): MCR3036 and MCR3072

Pertinent Code: 2022 New York City Fire Code, Section 309.3

Test Standard: no established standard, custom test

Laboratory: CSA Group

Test Report: Project 80122168, dated April 7, 2022

Description:

The Charge Safe Battery Rack is a modular rack designed for charging lithium-ion battery for the battery powered micro mobility devices (such as e-bikes). The rack is of non-combustible powder-coated steel and aluminum construction. It can be comprised of up to 5 stackable levels, with 4 (MCR3036) or 8 (MCR3072) battery compartments per level; the maximum total number of batteries are 20 (MCR3036) or 40 (MCR3072). The overall dimensions of the racks are (width x depth x height) 40.5 inch x 32 inch x up to 77 inch for MCR3036, and 76.5 inch x 32 inch x up to 77 inch for MCR3072. Each battery compartment is designed to accommodate a single storage battery.

The Charge Safe Battery Rack is equipped with the following features:

- Each battery compartment is protected by CellBlock's proprietary CellBlockEX extinguishing agent, located on top of each level. The pelletized extinguishing agent will automatically release to encapsulate affected battery below during a thermal



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runaway event.

- Every rack is provided with a fire-proof textile blanket (aka FireShield) exterior to the rack. The fire blanket is designed to cover the four sides and top of the Charge Safe Battery Rack while avoiding the buildup of off-gassing and is operable by personnel when adding/removing storage batteries is required.
- Charge Safe Battery Rack is hardwired directly to an electrical circuit in accordance with the New York City Electrical Code.

During the CSA custom test, the CellBlock Charge Safe Battery Rack was able to limit a thermal runaway failure to an individual storage battery, without propagating to adjacent batteries located in the surrounding compartments. Flame and smoke/gas were observed.

Upon review of the application, the Fire Department has no objection to the use of CellBlock FCS's Charge Safe Battery Rack, as indicated in the submission, subject to the following conditions:

1. Installation, operation, and maintenance of Charge Safe Battery Rack shall comply with all applicable requirements of the New York City Construction Codes (including the Building Code and the Mechanical Code), the New York City Electrical Code, the New York City Fire Code (including FC309.3), and other applicable laws, rules and regulations. In addition, the manufacturer's requirements shall be complied with.
2. Approval for the use and occupancy of a battery charging room and the installation of the Charge Safe Battery Rack shall be obtained from the New York City Department of Buildings.
3. The maximum energy capacity for each storage battery shall be no more than 1 kWh.
4. The aggregate energy capacity of storage batteries or other removable batteries that can be charged in a single fire area, as defined in FC 202, shall not exceed 50 kWh in accordance with FC 309.3.3 (3).
5. The rack shall be maintained a clearance of at least 6 feet except when there is a wall. The rack shall be maintained clear on or above the top.
6. The minimum net free space required to prevent potential off-gassing from accumulating within flammability limits is 2825 cubic feet. Volume of objects shall be subtracted from the total volume.
7. An adequate electrical supply and a sufficient number of electrical receptacles shall be provided to allow the charging equipment for storage batteries and other removable storage batteries to be directly connected to a receptacle. Extension cords and power strips shall not be used.
8. Signage shall be provided on the exterior of the room to identify it's a lithium-ion battery charging room.
9. Prior to charging or re-charging, storage batteries shall be inspected for cracks, punctures, leaking contents or other damage if the battery was dropped, involved in a collision or otherwise subjected to a potential mechanism of damage. Damaged storage batteries shall not be re-used. Damaged batteries and storage batteries at the end of their usable life shall be promptly removed from the premises and lawfully disposed of.
10. The Charge Safe Battery Rack shall only be used to reduce the separation distance between each storage battery or other removable storage battery during charging operations as per FC309.3.3 (3). The dedicated battery charging room or area housing the Charge Safe Battery Rack shall comply with applicable requirements of FC309.3.3, including:
 - a. The battery room/area shall be of minimum one-hour fire-rated construction in accordance with the New York City Building Code. The room shall be dedicated for battery charging and secured from unauthorized entry, and is not used for the storage of combustible materials, combustible waste or hazardous materials.



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- b. Smoke detectors or smoke alarms shall be provided for the battery room in accordance with the New York City Building Code. If the building or occupancy is equipped with a fire alarm system, the smoke detector shall be connected to such fire alarm system.
- c. The battery room or area shall be protected by a sprinkler system. The design and installation are subject to the review and approval by the New York City Department of Buildings.
- d. The battery room or area shall be temperature controlled to prevent overheating or other unsafe battery condition if the ambient temperature of the room during battery charging operations exceeds the limitations set forth in the battery manufacturer's instructions or the equipment listing.
- e. The battery room or area shall be provided with a portable fire extinguisher complying with the requirements of FC906 having a minimum 4-A:20-B:C rating.
- f. The battery room or area may be used as battery storage area per FC309.3.4.

Please be advised that this letter of no objection may not include all conditions, restrictions, and/or limitations necessary for final Fire Department approval. In the interest of public safety, it may be necessary to impose additional conditions, restrictions, and/or limitations at some later time. Further, in the interest of public safety, this conditional letter of no objection may be revoked upon failure to comply with any of the expressly stipulated conditions, restrictions, and/or limitations outlined in the foregoing.

KC:NG

CC: Brian Cordasco, Deputy Assistant Chief, Bureau of Fire Prevention
Michael Maiz, Battalion Chief, Haz Mat
Sandy Camacho, Chief Inspector, Hazard Control Group
Alan Price, P.E., Director, Office of Technical Certification and Research, Department of Buildings
Vincent Yu, P.E., Office of Technical Certification and Research, Department of Buildings

By Order of,
Chief of Fire Prevention