United States
Consumer Product Safety Commission

January 14, 2024

Mrs. Megan Van Heirseele
Chair, TC 2272 & TC 2849
UL Standards & Engagement
1603 Orrington Avenue, Suite 2000
Evanston, Illinois 60201

Dear Mrs. Van Heirseele:

Consumer Product Safety Commission staff (CPSC or staff)[1] appreciates the opportunity to comment on the proposed changes for ANSI/CAN/UL 2272:2016, *Standard for Electrical Systems for Personal E-Mobility Devices*, dated November 3, 2023. Staff supports the proposed changes in the November 3rd Bulletin with the following comments on specific topics as noted below; CPSC staff will upload these comments to the November 3 Bulletin on the Collaborative Standards Development Site (CSDS).

Topic 1: Updating battery pack compartment requirements

Staff supports the proposed new battery pack compartment requirements for tamper resistance in Cl. 9.2.3. In addition, staff recommends that a similar requirement be added for the e-mobility device enclosure to be secured, such as:

> 9.2.4 (NEW) To prevent user servicing such as cell replacement when the device enclosure serves as the outer enclosure of the battery, the device enclosure shall be designed such that it is not capable of being opened using common household tools, such as a flat blade or Philips head screwdriver. The enclosure shall be ultrasonically welded or secured by equivalent means. Adhesives complying with the adhesive requirements of UL 746C, or single use or tamper-proof screws, are considered equivalent means.

In addition, staff recommends that markings be added to the battery compartment, device enclosure, and instruction manual to indicate that the battery and/or the battery's components are not user replaceable.

Rationale: The additional requirement will cover nonreplaceable batteries in devices, and the markings will instruct consumers not to replace them. This reduces the risk that new or used batteries

[1] This letter was prepared by the CPSC staff. It has not been reviewed or approved by, and may not represent the views of, the Commission.

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will become accessible to children.

Topic 4: Updating charger requirements

Staff supports this proposed update to the charger requirements. In addition to these updated requirements, the text should include a reference to a new test requirement in Cl. 27.7 that staff proposes as detailed below.

Rationale: CPSC staff supports strengthening the requirements in this section to assure that charging is conducted strictly within cell specifications.

In addition to the comments noted above, staff proposes the following be included in these revisions:

> Cl. 27.7 (New) Post-Discharge Charging Determination Test:
>
> At the immediate conclusion of the Temperature Test (Cl. 27), the supplied charger is to be plugged into the DUT to determine whether the unit allows charging above the cell manufacturer's maximum specified cell surface temperature for charging. When the charger is plugged into the DUT, the charger and DUT electrical connection shall comply with Cl. 27.4 and Cl. 27.6. Measurement of the cells by bypassing the BMS may be required to make this determination.

Rationale: Staff evaluation of hoverboards, e-scooters and e-bikes using the test procedure proposed under new 27.7 has revealed instances where cells are not prevented from being charged despite the cell surface temperature being as much as 20°C above the manufacturer's specified charging temperature limit. Staff deems that this condition should be prevented to keep the cells operating within their specification according to ANSI/CAN/UL 2272 Cl. 27.4, and reduce the risk of fire.

CPSC staff recommends these topics, containing proposals and revisions, also be applied to ANSI/CAN/UL 2849:2020, where practicable. ANSI/CAN/UL 2272:2016 and ANSI/CAN/UL 2849:2020 are electrical system standards for similar component battery packs and reference the same standards for battery packs intended for micromobility applications.

CPSC staff appreciates the opportunity to make these comments and welcomes further discussion on staff's additional proposed requirements.

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Sincerely,

Jay Kadiwala
Electrical Engineer
Division of Electrical Engineering & Fire Sciences

cc: Jacqueline Campbell, CPSC Voluntary Standards Coordinator
Madison Lee, Project Manager for TC 2849

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