



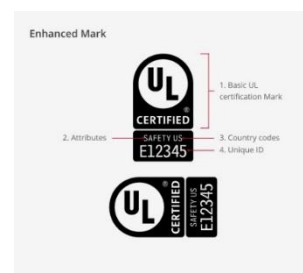
Resource Library: E-Bike Charging Safety

Overview

Electric bikes (e-bikes) are an increasingly popular feature of the transportation landscape as users find them a cost-effective and emission-free transportation option. As the number of e-bikes on the road expands, it's important to consider best practices in charging safety. This resource library provides regulators, e-bike users, and program implementers of shared e-bike services an overview of published guidance on e-bike charging safety. It includes a table linking to relevant documents and summarizing their key takeaways.

Key Insights on E-Bike Charging Safety

- **Safe charging conditions reduce risks.** If possible, e-bikes should be charged outside. When charging indoors, users should monitor bikes while charging, charge at room temperature, charge away from fire exits like doors and windows, and keep batteries away from kids and pets. For long-term battery health and safety, chargers should be unplugged once a battery is full.
- **E-bikes should only be charged with batteries and chargers that meet safety standards and that are manufacturer-approved for use with the device.** All the resources included in this library highlight the importance of avoiding counterfeit batteries or after-market modifications to bikes that impact charging. Consumers should also avoid using accessories like extension cords or power strips—chargers should instead be directly plugged into wall outlets.
- **Safety standards reduce risks, and strong local laws can help promote them.** Internationally recognized safety standards, such as UL 2849, UL 2271, and UL 2272, are now widely regarded as crucial for ensuring safety. Local ordinances like Local Law 39 in New York City can drive these standards further by mandating that retailers only sell certified devices.
- **Batteries should be inspected for damage on a regular basis.** To ensure safety, batteries should be regularly inspected for cracks, leaks, odors, changes in color or shape, or any other unusual characteristics, and a certified technician should be engaged to conduct repairs. Users should immediately stop charging if a battery appears damaged in any way.



E-Bike Charging Safety Resources

The table below includes links to guidance on best practices for e-bike charging from fire safety organizations, electrical safety experts, government agencies, and other relevant stakeholders. These resources can help individuals, community organizations, and others across New York safely handle e-bike batteries.

Resource	Author/Date	Key Topics	Summary
<u>Lithium-ion battery: A consumer safety charging guide</u>	New York State Department of Homeland Security and Emergency Services, 2024	General charging safety tips	This resource highlights general safety tips associated with lithium-ion batteries, recommending that consumers only purchase products from reputable manufacturers with legitimate safety certifications and that batteries be charged under safe conditions (plugged directly into an outlet, under supervision, and away from exits).
<u>Safer charging, safer deliveries: Lessons from NYC DOT's public e-bike charging pilot</u>	New York City Department of Transportation, 2025	Battery-swapping cabinets as a safe charging solution	This report offers insights from a pilot program for battery-swap cabinets geared toward delivery workers in NYC. The six-month program provided free access to both battery-charging cabinets and bike dock charging stations and significantly reduced at-home charging among participants. The pilot found that late afternoon was the most popular charging time for delivery workers, that battery swapping cabinets were more popular than charging docks, that users were willing to pay for subscriptions to charging services, and that relationships fostered stewardship of the equipment across the user base.
<u>Strengthened New York City regulations to prevent sale of dangerous batteries</u>	New York City Consumer and Worker Protection, 2024	Local Laws 39 (2023), 49, and 50 (2024)	This press release details local enforcement powers to prevent sales of uncertified batteries and micromobility devices in the city. It explains <u>Local Law 39</u> (requiring all batteries and micromobility devices sold, leased, or rented in the city to meet accredited safety certification standards), <u>Local Law 49</u> (requiring business and online retailers to post new signage on battery safety), and <u>Local Law 50</u> (providing expanded regulatory powers to allow the city to padlock businesses that are repeat violators of these regulations).

Resource	Author/Date	Key Topics	Summary
<u>The risks of charging your e-bike or e-scooter inside your home or apartment</u>	Electrical Safety Foundation International, 2024	General charging safety tips	This resource from electrical safety experts provides six tips on safe battery charging for electric bikes. It recommends that 1) bikes should be charged on flat and dry surfaces; 2) chargers should be manufacturer-approved and plugged directly into walls; 3) chargers should be unplugged once full; 4) chargers should be unplugged when users leave the house or are asleep; 5) charging should be discontinued if changes in color/shape/odor appear; and 6) batteries and chargers should be kept away from kids.
<u>New York State Fire Code requirements for battery charging</u>	New York State, 2025	Fire code text; commercial scale charging requirements	The 2025 Fire Code of New York State, Chapter 3, Section 322 – <i>Powered Micromobility Devices</i> outlines fire code requirements related to e-bike battery charging for larger-scale, non-personal-use charging operations. It outlines general safety tips as well as specific requirements, stating that batteries should be kept at least 18” apart while charging (unless isolated by an approved material in an approved charging cabinet) and that rooms used for battery charging operations should be outfitted with fire alarm systems.
<u>Charge safe, store safe. Electric micromobility safety guidance for residential building owners and managers</u>	New York City, 2024	Tips for property owners on e-bike charging safety	This resource outlines steps that property owners and managers can take to reduce the risk of battery fires. Owners are encouraged to provide secure outdoor charging (like battery cabinets) as the safest approach. An alternative is to provide dedicated space for indoor charging that is designed in consultation with the fire department and an electrician. Building managers can also share safety guidance for residents who charge in their own units and implement regulations on battery charging expectations for residents, such as requiring devices to be registered with management and certified to UL standards. Property owners should also ensure their properties comply with local electrical codes.
<u>The impact of e-mobility battery fires in NYC</u>	Underwriters Laboratories (UL) Standards & Engagement, 2025	Impacts of battery fires and legislative action that can address safety	This white paper details the success of New York City’s regulatory response to the surge in e-bike related fires (Local Law 39, passed in 2023) which mandated that e-mobility sales and rentals comply with UL 2849 for e-bikes, UL 2272 for personal e-mobility devices, and UL 2271 for lithium-ion batteries. The paper recommends other jurisdictions proactively adopt similar legislation to protect safety. It also highlights the importance of public education campaigns to increase user awareness of risks.

Resource	Author/Date	Key Topics	Summary
<u>Rechargeable battery recycling web page</u>	New York State Department of Environment & Conservation	Battery recycling resources; laws related to battery disposal	This web page provides guidelines on proper disposal for lithium-ion batteries. It outlines New York State legal requirements that prohibit consumers from throwing batteries in the trash, require retailers to accept used batteries from consumers, and require manufacturers to pay for used battery collection and recycling. Further details are provided around specific requirements for posted signage, consumer education, and collection methods that retailers and manufacturers must follow.
<u>Call2Recycle web page</u>	Call2Recycle, 2025	Battery recycling center lookup & retailer resources	Call2Recycle is a national consumer battery recycling program. This website allows users to look up safe drop-off locations for battery recycling. It includes detailed FAQs as well as resources for e-bike retailers on battery safety. Retailers can also register to enroll their locations as certified battery collection sites for the program.
<u>What you need to know about e-bike battery safety</u>	Liv Cycling, 2025	How batteries work, general safety, and tips for long-term storage	This resource from an e-bike manufacturer gives an overview of how e-bike battery technology works, including a description of battery management systems and cylindrical battery cells, as well as several safety tips for consumers. It also outlines guidance for safe long-term storage, stating that batteries should not be kept at full capacity and should be removed from bikes when stored for 30 days or longer.

Responding to e-bike battery fires

Most incidents of e-bike battery fires have resulted from users using uncertified and unsafe charging equipment, such as “aftermarket” batteries or chargers that were not designed for use with the specific bike model. Some warning signs of a compromised battery include a warped shape, leaking fluids, popping/cracking sounds, or strange odors. Users should immediately stop charging if anything appears atypical with the battery. If it is safe to do so, users should use tongs or gloves to move the compromised battery away from anything that can catch fire, then call 911. Lithium-ion battery fires emit toxic fumes and are prone to reignition, so in the event of a fire users should always call 911, go outside, and stay outside until first responders arrive. For more information, consult the [New York Fire Department’s battery safety resources](#).

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