

What are the UL standards for battery energy storage systems?

Its standards verify that battery energy storage systems meet strict safety, fire prevention, and performance requirements. For project developers, manufacturers, and operators, understanding these certifications is not optional--it's necessary. In this guide, we'll explore key UL standards such as UL 9540, UL 9540A, UL 1973, and others.

What are UL Certifications for battery systems?

UL certifications for battery systems are the foundation of safe, compliant, and bankable energy storage projects. From UL 9540 system-level approvals to UL 9540A fire safety testing and UL 1973 battery-level compliance, these standards ensure that energy storage systems perform reliably under real-world conditions.

What is a UL standard for battery ESS?

Explicitly cited in NFPA 855 for large-scale fire testing and is the only national standard in the U.S. and Canada for fire safety testing methods for battery ESS. Learn more [UL 1973, The Standard for Batteries for Use in Stationary and Motive Auxiliary Power Applications](#).

How can UL help with energy storage problems?

We work with system integrators and OEMs to better understand and address energy storage systems issues. UL can test your large energy storage systems (ESS) based on UL 9540 and provide ESS certification to help identify the safety and performance of your system.

What is UL 1973 standard?

UL 1973 (the Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications) is a safety standard for energy storage systems. It specifies detailed requirements that manufacturers of ESS must meet to qualify for safety certification.

What is UL 9540 & UL 62619?

UL 9540, Energy Storage Systems and Equipment. Safety standard for energy storage systems used with renewable energy sources such as solar and wind. IEC 62619, Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications.

[UL 9540 Testing Overview: Understanding the Standards for Energy Storage Systems \(ESS\)](#) UL 9540 is a crucial safety standard for energy storage systems (ESS). More specifically, ...

Sep 5, 2025 · UL 9540 is the core system-level safety standard in the energy storage industry, covering batteries, battery management systems (BMS), inverters, fire protection design, and ...

Mar 20, 2024 · As more battery energy storage systems (BESS) are connected to the grid, safety is paramount. That"s why clear safety standards exist for the storage industry; protocols ...

WHat is UL1973 Standard? UL1973 (the Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications) is a safety standard for energy ...

Energy storage systems interactive installation diagram with UL Certification categories and UL 9540 and UL 9540A inspection resources.

Sep 19, 2025 · UL 1973 is the gold standard for battery safety in energy storage. For developers and C& I customers, certification ensures regulatory approval, market access, and system ...

Oct 10, 2023 · Tracking battery safety right from the start UL has been setting the standards on battery safety when batteries starting becoming more ubiquitous nearly 40 years ago. Laurie ...

Apr 9, 2021 · This standard is a system standard, where an energy storage system consists of the an energy storage mechanism, power conversion ...

Jul 13, 2025 · The IEC standard for battery energy storage system is the foundation for the safe and efficient growth of energy storage worldwide. ...

Sep 14, 2025 · This is where UL certifications for battery systems play a crucial role. UL (Underwriters Laboratories) is one of the most trusted global safety certification organizations. ...

UL 9540A - Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems For suppliers, on our ...

Apr 16, 2025 · UL Solutions has announced enhancements to its testing methods for battery energy storage systems (BESS) that address industry ...

3 days ago · As the battery energy storage market evolves, understanding the regulatory landscape is critical for manufacturers and stakeholders. This guide offers insights into ...

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