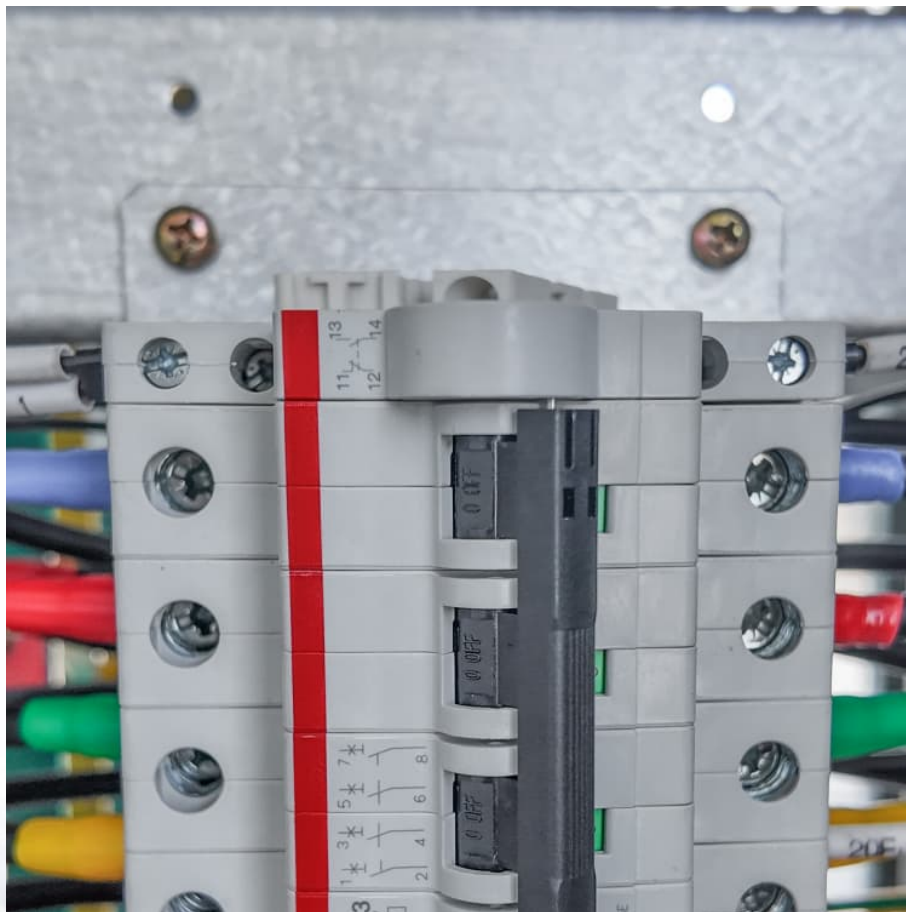


# The latest standards for energy storage battery transportation requirements





## Overview

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The DOT has recently published the “Lithium Battery Guide for Shippers”, to help shippers safely package lithium cells and batteries for transport by all modes, in accordance with the latest (May 10, 2024; HM-215Q) international harmonization regulatory requirements.

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This document provides an overview of current codes and standards (C+S) applicable to U.S. installations of utility-scale battery energy storage systems. This overview highlights the most impactful documents and is not intended to be exhaustive. Many of these C+S mandate compliance with other.

The rapid global adoption of electric vehicles (EVs), lithium-ion batteries, and Battery Energy Storage Systems (BESS) has led to significant advancements in maritime transport regulations and best practices. This report details the critical updates within the International Maritime Organization.

□ This document is based on the provisions set out in the 2025-2026 Edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions) and the 66 th Edition (2025) of the IATA Dangerous Goods Regulations (DGR). The provisions of the DGR with respect.

The United Nations Standard 38.3 plays a vital role in ensuring safety during lithium battery transportation. This guide will help you navigate these essential regulations effectively. Learn why UN 38.3 testing is important for lithium batteries. Following the rules keeps transport safe and avoids.

This webpage includes information from first responder and industry guidance as well as background information on battery energy storage systems and resources. Access this webpage information in a printable format (pdf) (515.29 KB) . Battery energy storage systems (BESS) stabilize the electrical.



Provides guidance on the design, construction, testing, maintenance, and operation of thermal energy storage systems, including but not limited to phase change materials and solid-state energy storage media, giving manufacturers, owners, users, and others concerned with or responsible for its. What is a battery management standard?

A new standard that will apply to the design, performance, and safety of battery management systems. It includes use in several application areas, including stationary batteries installed in local energy storage, smart grids and auxiliary power systems, as well as mobile batteries used in electric vehicles (EV), rail transport and aeronautics.

What is a battery standard?

Covers requirements for battery systems as defined by this standard for use as energy storage for stationary applications such as for PV, wind turbine storage or for UPS, etc. applications.

What is the ICAO guidance document for lithium ion batteries?

Battery Guidance Document Transport of Lithium Metal, Lithium Ion and Sodium Ion Batteries Revised for the 2025 Regulations Introduction This document is based on the provisions set out in the 2025-2026 Edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions) and the 66 th.

What are the packaging requirements for lithium batteries?

Packaging Requirements: Use UN-certified containers designed for lithium batteries, often made of non-combustible materials and equipped with safety features like smoke detectors and pressure vents. Ensure proper cushioning to prevent physical damage during transit.

Are lithium batteries safe to transport in 2025?

Transporting lithium batteries safely has become a global priority. You must understand the regulations governing this process in 2025 to prevent risks and ensure compliance. Over 40 air transport incidents involving lithium batteries have occurred since 1991, with 21 on passenger aircraft.

What are the classification and shipping requirements for lithium-ion batteries?



The classification and shipping requirements for lithium-ion batteries depend on their size and energy capacity (Watt-hours). For standalone batteries. Strict UN-certified packaging. IUMI strongly supports the SoC limit of 30% for air freight and advocates similar principles for maritime transport.



## The latest standards for energy storage battery transportation requirements

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### [Global EV Battery Standards Tighten: What It Means ...](#)

In this blog, we unpack the latest trends driving the EV and EV-battery industries, the new wave of battery-focused policies, influenced by ...

### **UN 38.3 transport testing for large-scale energy storage batteries**

The Critical Role of UN 3 Transport Testing for Large-Scale Energy Storage Batteries Ensuring Compliance and Safety In todays rapidly evolving energy landscape, large-scale energy ...



### **What Are the Essential Rack Battery Safety Standards and ...**

UL 1973 focuses on stationary battery safety, IEC 62619 covers industrial lithium-ion batteries, and NFPA 855 governs large-scale energy storage systems. These ...



### **White Paper Ensuring the Safety of Energy Storage Systems**

Introduction Energy storage systems (ESS) are essential elements in global efforts to increase the availability and reliability of alternative



energy sources and to reduce our reliance on energy ...



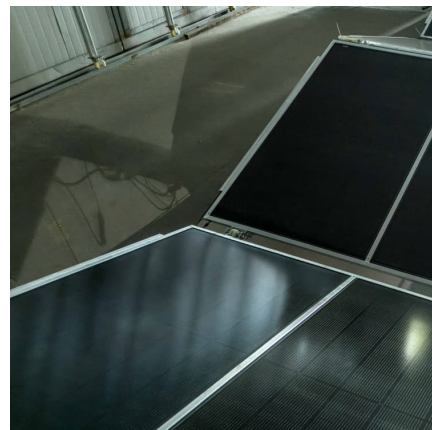
### **Comprehensive review of energy storage systems technologies, ...**

The applications of energy storage systems have been reviewed in the last section of this paper including general applications, energy utility applications, renewable ...



### **The Evolution of Battery Energy Storage Safety Codes and ...**

This document explores the evolution of safety codes and standards for battery energy storage systems, focusing on key developments and implications.



### [Codes & Standards Draft - Energy Storage Safety](#)

2020 Edition that is part of IEC 62933 which specifies the safety requirements of an electrochemical energy storage system that incorporates non-anticipated ...





## Energy Storage System Guide for Compliance with Safety ...

One of three key components of that initiative involves codes, standards and regulations (CSR) impacting the timely deployment of safe energy storage systems (ESS). A CSR working group ...



## U.S. Codes and Standards for Battery Energy Storage Systems

U.S. Codes and Standards for Battery Energy Storage Systems An overview of current codes and standards (C+S) applicable to U.S. installations of utility-scale battery energy storage systems.

## [New Air Transport Regulations for Lithium and ...](#)

The significant changes in IATA 2025 regulations include new UN numbers for sodium-ion batteries, a charge limit of 30% for lithium batteries ...



## Transportation Safety & Regulation

Learn about lithium battery transportation hazards and regulations at the Battery Safety Summit. Explore the latest standards for safe battery shipments.



### [Codes & Standards Draft - Energy Storage Safety](#)

A new standard that will apply to the design, performance, and safety of battery management systems. It includes use in several application areas, including ...



### [Ensuring the Safe Transportation of Commercial ...](#)

Stay informed about the latest trends and updates in freight forwarding with China Freight Forwarder. Get insights on CTV RSS feeds and learn how to safely ...

### [Requirements for Shipping Lithium Batteries 2025](#)

The Carriage of Electric Vehicles, Lithium-Ion Batteries, and Battery Energy Storage Systems by Seas Executive Summary The rapid global adoption of electric vehicles (EVs), lithium-ion ...



### [Lithium-ion Battery Storage Technical](#)



### Specifications

The BESS components must comply with all codes and standards relevant to the operation and installation of energy storage equipment. All installed equipment must be tested and approved ...

### **Battery guidance document**

For the purposes of this guidance document and the IATA Dangerous Goods Regulations, power banks are to be classified as batteries and must be assigned to UN 3480, lithium ion batteries, ...

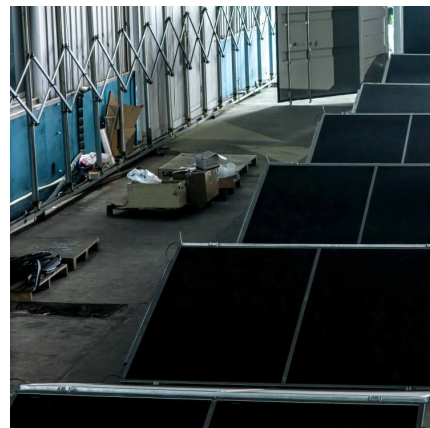


### **What are the Essential Site Requirements for Battery Energy Storage**

Battery Energy Storage Systems represent the future of grid stability and energy efficiency. However, their successful implementation depends on the careful planning of ...

### **An Overview of**

For the traction of other transportation vehicles, including rail, water and air transportation or off-road machinery Industrial batteries with internal storage Specifically designed to store from and ...





### **Your Guide to Battery Energy Storage Regulatory Compliance**

As the battery energy storage market evolves, understanding the regulatory landscape is critical for manufacturers and stakeholders. This guide offers insights into compliance strategies, ...

### **Battery guidance document**

Although some lithium and sodium ion batteries are eligible for transportation as Section II and exempted from certain labelling, packing and documentation requirements, these batteries are ...



### **SAE International Issues Best Practice for Lithium-Ion ...**

General lack of existing industry standards and codes for storage Regulations that are in development Hazardous events that have ...

### **The Evolution of Battery Energy Storage Safety Codes and ...**

That said, the evolution in codes and standards regulating these systems, as well as evolving battery system designs and strategies for hazard mitigation and emergency response, are ...



### Battery Energy Storage Systems: Main Considerations for Safe

This webpage includes information from first responder and industry guidance as well as background information on battery energy storage systems (challenges & fires), BESS ...



### [Understanding the EU Battery Regulation , TÜV SÜD](#)

5 ???· EU Battery Regulation 2023/1542: A Complete Guide to Compliance and Sustainability  
In July 2023, a new EU battery regulation (Regulation 2023/1542) was approved by the EU.  
...



### [Battery Regulations in the US: A Comprehensive Overview](#)

US battery regulations focus on safety, environmental protection, and performance standards. Federal agencies like the EPA and DOT oversee recycling, ...



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