

REVOLUTIONIZING EV BATTERY SHIPPING AND STORAGE SAFETY WITH AMERICASE PACKAGING SOLUTIONS

OVERVIEW

A leading global automotive manufacturer faced significant challenges in transporting and storing lithium-ion batteries for their electric vehicles (EVs). Recognizing the need for a durable, cost-effective, and regulation-compliant solution, Americase partnered with the manufacturer to design a protective container that exceeded industry standards. By implementing the Americase galvanized steel large format case, the automotive manufacturer streamlined operations, reduced costs, and ensured safety and regulatory compliance.



THE PROBLEM

Despite having existing large format battery cases, the automotive manufacturer faced challenges in:

- Understanding the **complex regulatory landscape** beyond basic packaging requirements.
- Equipping their teams, who **lacked expertise in EV battery packaging**, with adequate solutions.
- Using wood and competitor packaging, which added **unnecessary weight, cost, and process complexity**, including the need for intermediary materials like vermiculite and fire blankets.
- Ensuring their packaging could withstand **operational demands, such as forklift punctures and thermal events**, while managing high volumes of batteries efficiently.

These gaps created inefficiencies, increased costs, and posed potential safety risks in their battery transport and storage processes.

THE SOLUTION

The Americase team conducted on-site analyses for an in-depth understanding of the company's operational needs and integrated the feedback from their team throughout the development process. As a result, the galvanized steel large format container was developed — **a cutting-edge, durable, cost-efficient, regulatory-compliant solution** to address the challenges associated with EV battery packaging and transportation. ▶

- **Lightweight galvanized steel** case design engineered to **fully contain thermal events**.
- **Robust, efficient, easy-to-use** container with a 90-lid/10-base configuration and easy lid-lift mechanism.
- **Eliminates extra steps** such as adding vermiculite, wrapping batteries in fire blankets, or drilling down wooden case lids.
- **Proven battery safety and superior durability** with the container designed and tested to withstand forklift punctures and multiple drops.
- **Full regulatory compliance**, including adherence to 49CFR standards and UN DOT certification for a PG-1 drop test.
- **Rigorously and extensively tested** using real-world battery scenarios for proven, optimized case performance.

RESULTS

The Americase large format case delivered remarkable results for the leading global automotive manufacturer:

- **Cost Savings:** Reduced packaging costs by over 75% compared to competitors.
- **Enhanced Safety:** Minimized risks associated with catastrophic Damaged/Defective/Recalled (DDR) battery events during transport or on-site.
- **Operational Efficiency:** Simplified processes and facilitated more effective handling of large battery volumes.
- **Durability:** The cases' longevity eliminated the need for frequent repurchases, providing a high return on investment.
- **Regulatory Confidence:** Enabled the automotive manufacturer to navigate and comply with evolving packaging regulations confidently.

CONCLUSION

Through innovation, collaboration, and a commitment to excellence, Americase addressed the automotive manufacturer's unique challenges in lithium-ion battery packaging. The large format case not only met but exceeded expectations, providing a safe, efficient, and cost-effective solution. This partnership exemplifies how tailored engineering and strong client relationships can drive industry-leading outcomes. Americase continues to support the manufacturer's evolving needs, ensuring their packaging solutions remain at the forefront of safety, compliance, and efficiency.

Going Above and Beyond

Americase's partnership with the automotive manufacturer exemplified a commitment to exceeding expectations.

By conducting rigorous testing, including **thermal runaway event mitigation at full battery charge** — a measure well beyond regulatory requirements — Americase ensured the case provided unmatched protection.

Additionally, Americase collaborated with the automotive manufacturer to refine the design using **prototype trials and real-world feedback**. The combined expertise and open communication between Americase and the automotive manufacturer fostered a mutually beneficial relationship, allowing for customized solutions that tackled the complexities of lithium-ion battery transport.