

SolarInvert Energy Solutions

New energy battery cabinet chassis material





Overview

The chassis uses submarine-grade hot-formed steel with strength of 2000 MPa, aerospace-grade aluminium alloy with strength of 600 MPa and multiple barrier structures to further boost chassis rigidity. What is an EV battery enclosure?

(Novelis) EV battery enclosures are a hotbed of subsystem design, materials innovation, and vehicle integration. Whether you call them packs, boxes, or trays, the structures that envelop and protect EV battery cells and their supporting electrical and thermal-management hardware are among the industry's top subsystem priorities.

How much does an electric vehicle enclosure weigh?

Evolving vehicle architectures make composites an attractive material choice for the enclosures of future EVs. The average enclosure weighs 80-150 kg. Complexity in design & development -. Battery Electric Vehicles (BEV): 2030 = 28 Mil. / 2040 = 64 Mil. • Fuel Cell Electric Vehicles (FCEV): 2030 = 1.1 Mil. / 2040 = 7.7 Mil. .

Are aluminum battery enclosures a good choice?

Aluminum battery enclosures typically deliver a weight savings of 40% compared to an equivalent steel design. According to Asfeth, the alloys best suited for battery enclosures are the 6000-series Al-Si-Mg-Cu family — alloys that are also highly compatible with end-of-life recycling, he said.

What makes Novelis a Gen-II battery enclosure?

Inside Novelis' state-of-art Gen-II battery enclosure, from the top: Aluminum top cover; advanced cell-to-pack battery system (green); s701 and s650 roll-formed AL profiles; simple modular extruded frame enclosure; structurally integrated cooling plate (blue), fire resistant AL bottom plate. (Novelis).

What alloy is used in a Constellium dual-frame enclosure?



Aluminum's workhorse 6xxx-series alloy is used in two different advanced extruded alloys that underpin a recent Constellium dual-frame enclosure prototype. The inner frame (a second buttress to protect the cells in an impact) is in strength-optimized 6000 (HSA6 family).

What is a 3-in-1 battery-box?

DuPont's 3-in-1 battery-box concept unveiled in late 2022 is a new example of modular design that consolidates cell cooling, electrical interconnection, and structural components. Its housing is made of the company's Zytel HTN, a nylon-based polyamide capable of resisting high temperatures.



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How about new energy storage cabinet, NenPower

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