

WEIGHT REDUCTION: CHERY EQ1 EV INNER TAILGATE

SOLUTION STORY: EXTERIORS

HIGHLIGHTS

- Uses STAMAX™ resin, a long glass fiber reinforced polypropylene grade
- 40 percent weight savings vs. steel
- Delivers required stiffness and excellent mechanical performance
- Provides ease of assembly and integration with other parts
- Minimal warpage, excellent low-speed impact performance and corrosion avoidance





FULL STORY

The weight of batteries and other components in an electric vehicle requires a car to expend more energy. Thermoplastics can help offset the added weight by helping to lighten parts and systems that enable electrification and others across the entire vehicles.

Tailgates are large structural parts that offer significant opportunity for weight reduction.

CHARGED TO DROP WEIGHT

So when designing its eQ1 electric vehicle, Chinese automaker Chery targeted the tailgate to support its lightweighting efforts.

Approached in the early stages of the program, SABIC recommended STAMAX™ resin, a long glass fiber-filled polypropylene (LGFPP). This low-density material lightens the inner tailgate structure by 40 percent compared to steel and delivers the required stiffness.

LESS WEIGHT, MORE VALUE

Use of STAMAX resin for the eQ1's inner tailgate comes with additional advantages. These include ease of assembly and integration with other parts, as well as a modular-like design that can further improve vehicle assembly and dimensional stability.

The solution comes with minimal warpage, excellent mechanical performance and corrosion avoidance. In addition, the tailgate component can absorb the brunt of the force from a low-speed impact, which should avoid repair costs and deliver savings to vehicle owners.

In addition to its material, SABIC provided development support with computer-aided engineering analysis, allowing for prediction and optimization of the part's performance.

CONTACT US

Lightweight tailgate construction is an area of focus and strength for SABIC's dedicated automotive industry team. Learn more about SABIC's developing portfolio of solutions for tailgates, from the inner structure and outer skin panel to the window. Email us at automotivesolutions@sabic.com.