

Case Study

Custom Sliding Door Solution Enables Automotive Battery Testing with EUCAR Level 6 Safety

WHY

A leading automotive manufacturer required a welded walk-in chamber for lithium-ion battery testing that enabled easy movement of battery packs and test equipment into the test space while meeting EUCAR Level 6 safety requirements.

HOW

Weiss Technik engineered a custom powered sliding barn-style door and recessed chamber installation that achieved the sealing performance required for EUCAR Level 6 testing while maintaining safe, efficient access to the test space.

WHAT

The resulting solution combines advanced battery testing safety features with a unique entry system that enables efficient material of large battery assemblies into and out of the chamber.

WHY - the challenge.

Battery testing applications often require enhanced safety measures to contain the effects of thermal events, including battery venting and outgassing. For this project, the customer also required direct floor-level access to the chamber, creating a unique design challenge that could not be addressed with a conventional door configuration.

The application required a secure door seal capable of maintaining chamber integrity during a potential battery rupture event. Traditional door designs could not effectively satisfy both the accessibility and containment requirements.

HOW - the idea.

Weiss Technik responded by engineering a custom powered sliding barn-style door specifically for this application. The design was developed to deliver the sealing performance required for EUCAR Level 6 testing while supporting the customer's facility layout requirements.

For typical bi-parting doors, a lower lip of minimum two-inch height is required to form a positive seal. This requires the chamber floor to be elevated approximately two inches above the surrounding facility floor. The customer, however, required a zero-grade configuration with the chamber floor level with the laboratory floor.

To overcome this challenge, the chamber was recessed into a floor pit and paired with the custom door system, enabling direct movement of battery packs and support equipment into the workspace while maintaining the sealing integrity required during a potential overpressure event.

To further improve usability, Weiss Technik designed a counterweight-assisted flip-down aluminum bridge that covers the transition between the laboratory floor and the chamber interior. This feature operates automatically and reduces operator effort while enabling efficient movement of battery packs and handling equipment.



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WHAT - the solution.

Weiss Technik delivered a custom welded walk-in chamber that combines advanced battery testing safety features with a customer-specific access solution.

At the heart of the solution is a custom-engineered entry system designed to provide the sealing performance required for safe battery testing while supporting efficient equipment access. The integrated bridge system further improves ergonomics and handling efficiency.

The chamber also incorporates reinforced construction, overpressure protection, emergency exhaust capability, gas monitoring, and automated safety controls to support demanding lithium-ion battery testing programs.



By developing a custom door system that balanced accessibility and safety, Weiss Technik delivered a solution tailored to the customer's facility requirements. The chamber enables efficient battery handling while supporting the containment and safety measures required for advanced battery testing.

Special Features

- Custom engineered sliding barn-style door
- Recessed flush floor chamber installation
- Secure door sealing system
- Counterweighted flip-down bridge
- Automatic bridge deployment/retraction
- Reinforced overpressure construction
- Emergency outgassing exhaust system
- Multi-gas safety monitoring
- Heavy-duty pneumatic door latches
- Large-format battery testing workspace