

# Leclanché Successfully Passes Major Thermal-Safety Validation Test For its Rail Industry INT-53 Energy Battery Pack

- The test was conducted by Emitech Group, a renowned independent testing organisation based in France
- Leclanché's INT-53 Energy battery pack fully contained the intentionally induced thermal runaway event with no internal component projection or external flames visible
- All standards were fulfilled for international IEC62619 requirements with certification earned in December 2022

YVERDON-LES-BAINS, Switzerland, and ANDERSON, Indiana, April 18, 2023– Energy storage solution provider [Leclanché SA](#) (SIX: LECN) has successfully passed a critical thermal-safety validation test for its rail industry-leading INT-53 Energy battery pack.

The INT-53 is currently used by rail manufacturers in Europe and North America for railway traction applications, in both passenger and freight trains, and in fully electrified or hybrid configurations.

The fire-safety test was conducted by LEFAE, a subsidiary of the France-based [Emitech Group](#) and a respected global leader in certification and qualification testing in the railway sector. It consisted of intentionally overheating a Leclanché rail battery pack to the point of thermal runaway or failure.

The Leclanché INT-53 battery pack fully complied with the standard's requirements of no flames, or battery components projected from the pack during the one-hour test and a longer observation period of 12-hours. In fact, the Leclanché battery contained the fire in a group of three modules without the fire propagating to the entire pack and eventually extinguishing itself. All standards were fulfilled in compliance with international regulation IEC 62619:2022 related to thermal propagation.

*"Over the last four years, Leclanché has invested heavily in R&D as well as advanced design and production methods to ensure we are producing batteries that are amongst the safest in the world," said Michael Ukabam, application engineering manager, Leclanché. "This successful test validates our efforts and should reassure our rail industry partners that designing their next generation rolling stock with Leclanché's INT-53 Energy packs means they are getting batteries with industry-proven safety levels."*

The test conditions simulated the worst-case scenario; it was carried out without Leclanché's liquid-cooling system active. However, the successful outcome illustrated the strength of Leclanché's safety concept consisting of packs built with many barriers and redundancies to avoid any kind of thermal incident.

*"From a safety perspective, our railway battery design goes much further than any singular industry standard," said Ukabam. "Our systems are designed for safety in a layered approach starting from cells containing ceramic separators, through the modules, subpacks and pack which led to the excellent results obtained during the IEC 62619 tests. Some might consider this 'overdesign;' we think of it as safety being our highest priority."*

Previously, the company earned its International Railway Industry Standard (IRIS) Group certification (ISO/TS 22163) and is EcoVadis certified for sustainability.

For more information about Leclanché's INT-53 Energy pack for the railway industry, contact [info@leclanche.com](mailto:info@leclanche.com).

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## About Leclanché

Leclanché is a world leading provider of low-carbon footprint energy storage solutions based on lithium-ion cell technology. Established in 1909 in Yverdon-les-Bains, Switzerland, Leclanché's history and heritage is rooted in battery and energy storage innovation. The company's Swiss culture for precision and quality, together with its production facilities in Germany, make Leclanché the partner of choice for companies seeking the very best in battery performance and who are pioneering positive changes in how energy is produced, distributed and consumed around the world. Leclanché is organised into three business units: energy storage solutions, e-Mobility solutions and specialty battery systems. The company currently employs over 350 people with representative offices in eight countries around the world. Leclanché is listed on the Swiss Stock Exchange (SIX: LECN).

## Disclaimer

This press release contains certain forward-looking statements relating to Leclanché's business, which can be identified by terminology such as "strategic", "proposes", "to introduce", "will", "planned", "expected", "commitment", "expects", "set",

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