

Abuse Tests for Batteries

DEKRA Battery Test Center

Batteries are expected to be robust, reliable and safe, even in extreme conditions. But what happens if they fail under high mechanical stress, fire or overcharge? Often there is a lack of testing capacity, and conducting in-house tests can be risky. At DEKRA, we offer the right solution with our safe and reproducible abuse tests in controlled environments. This gives you the confidence that your products meet the highest safety and quality standards.

Why is DEKRA the right choice?

- ▶ **Years of experience:** We are battery safety experts with extensive know-how in abuse testing.
- ▶ **State-of-the-art test environment:** Our Battery Test Center offers reproducible conditions and the largest fire hall of its kind.
- ▶ **Neutral and independent:** We ensure the safety and quality of your products according to international standards.
- ▶ **Comprehensive solutions:** We test cells, modules, and complete battery systems — safely and efficiently.
- ▶ **Global network:** Benefit from our international presence and our central locations.

Service Overview

Abuse tests simulate extreme stress conditions such as short circuits, high mechanical loads, shocks or fire. Our in-house workshop gives us the flexibility to adapt fixtures and equipment to suit your specific requirements. This allows us to test the safety and integrity of your battery even under the harshest conditions.

Overview of Our Tests

- ▶ **Electrical Stress Tests:** Short circuit, overcharging, overtemperature, deep discharge
- ▶ **Thermal Abuse Tests:** Overtemperature and fire tests
 - **Thermal Runaway/Propagation Tests:** Inducing thermal runaway using a nail or by heating with heating elements
- ▶ **Mechanical Abuse Tests:** Crush and structural tests to detect weak points
 - **Crush Tests:** Performed in a bunker, max. 500 kN pressing force, opening width up to 3 m
 - **Drop Tests:** Simulating falls from up to 5 m in height

After completing the tests, we carry out a **TearDown Analysis**. We disassemble the tested batteries or modules, analyze the results in detail, and document them at your desired level of detail.

At our DEKRA Battery Test Center, we test your batteries safely and efficiently – from individual components to complete systems. We also carry out abuse tests on entire vehicles in our 360 m² fire hall.

Contact us for reliable testing in accordance with international standards!

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Abuse tests for batteries: Reliable testing under extreme conditions for maximum safety and quality.

Learn more now!

