

## Press Release

Side-on and head-on collisions with post

# High Safety Level of Series-Produced Electric Cars Confirmed in DEKRA Crash Tests

- High-voltage systems reliably shut down in the event of an accident
- Patterns of damage comparable to conventionally powered vehicles
- No fire despite severely deformed drive battery

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**The high level of safety offered by series-production electric vehicles was confirmed in crash tests recently conducted by expert organization DEKRA. As part of a joint research project conducted by DEKRA Accident Research and traffic accident researchers at the University Medical Faculty in Göttingen, a Renault Zoe and three Nissan Leaf vehicles underwent crash testing at the DEKRA Crash Test Center in Neumünster. The tests, which involved deliberately crashing the cars into a post, were designed to simulate a range of scenarios involving collisions with a tree. The tests were conducted at speeds far greater than those normally applied in standard crash tests. The accident researchers concluded that, in terms of safety, the electric vehicles they tested equal conventionally powered vehicles.**

In three of the four crash scenarios, the experts initiated a side-on collision with the post – the Renault Zoe at 60 km/h and the Nissan Leaf (production series 2010–2017) at 60 and also 75 km/h. In an additional, fourth scenario, a Nissan Leaf underwent a head-on collision at 84 km/h.

“The damage patterns from the crash tests are comparable to those of conventionally powered vehicles,” says DEKRA accident researcher Markus Egelhaaf. “The high-voltage system in the electric vehicles was reliably shut down during the crash. And despite the fact that the drive battery was severely deformed, no fire broke out.”

Fundamentally, the expert said, the chances of surviving especially a side-on impact with a tree would be very slim at those kinds of speeds. “But that applies to all cars, regardless of their drive system. The major manufacturers of series-production electric vehicles have reached at least the same level of safety as combustion-engined cars.”

Not for nothing did the two models tested achieve the maximum of five stars in the Euro NCAP rating. “Our tests confirm that no one need feel any less safe in an electric car than in a conventionally powered car.”

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## **Research project aimed at optimizing rescue procedures**

The goal of the research project is to optimize the process of rescuing occupants from cars involved in accidents. So the crash tests were followed by a series of experiments to determine the most effective methods and tools that the rescue services can deploy to free occupants from cars.

In response to regular reports of difficulties extinguishing burning drive batteries, a new extinguishing system – the extinguishing lance – was among the equipment tested. If sections of a drive battery do happen to catch fire, firefighters can insert this lance directly into the battery housing. “This means that firefighting takes place inside the battery, preventing the fire from spreading to other battery cells,” says DEKRA accident researcher Markus Egelhaaf. “This method appears to offer potential, but further research is needed to establish just how effective it really is.”

The initial conclusion is that people trapped inside an electric vehicle can be rescued using the equipment available to the fire department every bit as quickly as they can from conventionally powered cars, nor are first aiders exposed to any increased risk.

### **Captions**

Nissan Leaf Crash 75 km-h – 1; Nissan Leaf Crash 75 km-h – 2: The high level of safety of electric vehicles (here the Nissan Leaf in the side-on collision with the post at 75 km/h) was confirmed in a series of recent DEKRA crash tests.

Nissan Leaf Crash 75 km-h – 3: Despite the fact that the drive battery suffered severe deformation, no fires broke out during any of the tests.

Nissan Leaf Crash 84 km-h – 1; Nissan Leaf Crash 84 km-h – 2: The patterns of damage that occurred in the crash tests (here the Nissan Leaf in the head-on collision with the post at 84 km/h) are comparable to those of conventionally powered vehicles.

### **About DEKRA**

*DEKRA has been active in the field of safety for more than 90 years. Founded in 1925 in Berlin as Deutscher Kraftfahrzeug-Überwachungs-Verein e.V., it is today one of the world's leading expert organizations. DEKRA SE is a subsidiary of DEKRA e.V. and manages the Group's operating business. In 2018, DEKRA generated estimated sales totaling more than 3.3 billion euros. The company currently employs more than 45,000 people in approximately 60 countries on all six continents. With qualified and independent expert services, they work for safety on the road, at work and at home. These services range from vehicle inspection and expert appraisals to claims services, industrial and building inspections, safety consultancy, testing and certification of products and systems, as well as training courses and temporary work. The vision for the company's 100th birthday in 2025 is that DEKRA will be the global partner for a safe world.*