

Vehicle safety

Intelligent mobility is also all about making mobility safer. Models of all Volkswagen Group brands are equipped with safety systems that help to reduce reaction times by helping drivers spot hazards sooner. If an accident proves unavoidable, the active safety systems respond preemptively, in order to reduce the risk of damage and injury for the vehicle's occupants and for other road users. The impact of Volkswagen Group products on customers' health and safety is evaluated across all stages of the vehicle life cycle – from concept development, production and delivery to servicing, disposal and reuse or recycling.

Active and passive safety

Active safety systems are backed up by optimally designed passive safety technology comprising a highly deformation-resistant passenger cell, defined front and rear crumple zones and crash-optimized interior design. These high levels of all-round protection, and the systematic integration of state-of-the-art safety technologies into all vehicle classes, have won the Volkswagen Group brands many awards and prizes. This would not have been possible without years of hard work and investment. The many milestones include the establishment of the Audi accident research unit in the late 1990s, and Audi's endowment of a professorship for vehicle safety and signals processing at the Ingolstadt University of Applied Sciences in April 2013. The Volkswagen brand too conducts intensive road safety research, based on reconstruction and analysis of real-world accidents.

Driver assistance systems for enhanced safety

For the Volkswagen Group, safety means not only occupant protection, and in particular child occupant protection, but also pedestrian protection. Driver assistance systems are playing an increasingly important role on these fronts, ensuring ever higher standards of vehicle safety. With the standard-fitted multi-collision brake, and with Lane Assist and Front Assist, along with the optional proactive PreCrash occupant protection system, the new Golf is setting new standards in "democratizing" vehicle safety technologies.

This has earned a top five-star ranking from the European consumer protection organization Euro NCAP, along with four coveted Euro NCAP Advanced Awards for innovations in integral safety. Development of the multi-collision brake was inspired by the statistic that one in every four accidents results in secondary collisions. By slowing the vehicle to a speed of 10 km/h when a primary collision is detected, the multi-collision brake is often able to prevent secondary collisions, or at least moderate their severity.

Crash testing at Audi

Audi has been performing crash tests for the past 75 years – both real and simulated. Virtually all types of accident scenario, including pedestrian, barrier and pole impacts, are simulated, by a dedicated team. Every month this team of more than 200 specialists performs around 20,000 crash simulations, often as much as two years before the first prototypes are built. These simulations are conducted with the aid of a constantly growing supercomputer, which currently comprises 15,000 processors. To simulate a crash involving a complex full-vehicle model, 46 processors must run at full speed for at least two days, computing an average of at least 7 million data points per car. Before a fully constructed, fully equipped vehicle is ready for physical crash testing, 15,000 crash simulations will already have been performed on a computer model.

Accident research matched to regional requirements

Accident research provides an important source of information when developing safety technologies. Of course, real-world conditions differ greatly from one country to the next. This is why Volkswagen established an accident research center in China, for example, with the aim of adapting Western experience in this field to the specific requirements of the Chinese market. In the Czech Republic too, ŠKODA has set up an accident research team. The ultimate goal is to make accident investigation unnecessary – by preventing accidents happening in the first place.