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Siemens Digital Industries Software

Child restraint system testing

Siemens Digital Industries Software provides all required specialized testing systems

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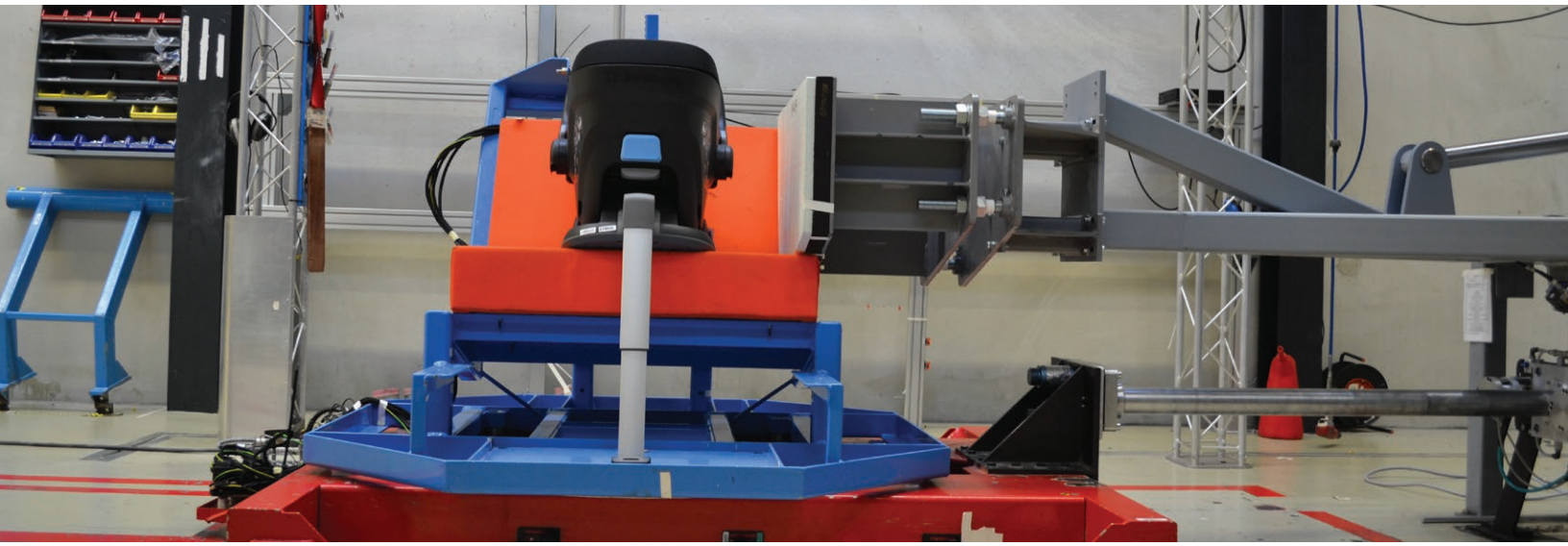
Providing the latest test equipment



Our testing facility is certified by the Netherlands Vehicle Authority (RDW), the German Federal Transport Agency (KBA) and the International Organization for Standardization (ISO) 17025.

The Siemens Digital Industries Software test facility in Helmond, The Netherlands is equipped with the latest equipment, which reflects more than 50 years of child restraint system testing expertise. Our test facility can accommodate the complete test setup for United Nations (UN) Regulation No. 44 and No. 129 certification in dynamic frontal, rear and side impact tests. With the ability to perform Swedish Plus pulse tests, pre-consumer testing and conformity of production (COP) procedures, we offer the complete spectrum of child restraint system tests. Our testing facility is certified by the Netherlands Vehicle Authority (RDW), the German Federal Transport Agency (KBA) and the International Organization for Standardization (ISO) 17025.

Our test facility provides all the required specialized systems, such as a hydraulic crash simulator, durability test benches, and climate and corrosion rooms to perform the full range of conformity tests.

United Nations regulation testing

As a manufacturer, you are responsible for all factors regarding certificates and type approvals. Before going to market, type approval, which is provided by a government or other regulatory body, is necessary. The requirements for this certification are documented by law.

We can perform testing against the UN Regulation No. 44 and new i-Size UN Regulation No. 129 standards. We test forward, rearward facing child restraint systems and carrycots, and ISOFIX (the international standard for attachment points for child safety seats in passenger cars) anchorage or belt systems of all types against UN Regulation No. 44 and UN Regulation No. 129 for homologation, COP, extension and other experimental testing. All Q-dummies are available and aligned with the latest version of regulations. The ISO 17025 certification means we have implemented a quality system aimed at improving our ability to consistently produce valid results. ISO 17025 is the main standard a lab must meet to be deemed technically competent.

Pre-consumer testing

With new child restraint systems that are ready to go to market, the European Consumer Organization may pick your child restraint system for extensive consumer testing. The tests done by the consumer organization are much more rigorous than what is required by the UN regulation standards. Our in-house pre-consumer testing solutions for dynamic testing include two elements: frontal and side impact.

Frontal impact is tested at 72 kilometers per hour (km/h) against a solid barrier using a suitably stiffened vehicle structure. The frontal impact test takes place on our inverse sled. The side impact is tested at 28 km/h against a solid barrier at an angle of about 80 degrees on our deceleration track. Head injury criterion (HIC), head and chest accelerations and neck forces and moments, as well as head displacement are measured to calculate the dynamic rating score.

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Swedish Plus pulse testing

For rear-facing child restraint systems in Group 1 or 2 and I-size rear-facing systems for the Swedish market, manufacturers perform an additional test. The Plus pulse test is designed to ensure that a child is not exposed to life-threatening, high-neck forces during a frontal collision. This test is supplementary for child restraint systems which offer rear-facing seating position on the Swedish market. The test differs from regular European tests because it occurs at higher speed than normal and includes a short braking distance and neck-force measurements. We can perform this test at our laboratory in Helmond.

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Conforming to production procedures

All manufacturers of child restraint systems are obliged to develop and perform COP testing. This is required by law based on the type approval procedure. This way the manufacturer can guarantee quality, as all components and child restraint systems must correspond with the approved type. As an independent laboratory, we can help manufacturers by performing these COP procedures for them.

Training and consultancy

We can provide training and consultancy for manufacturers and retailers. This can be based on all the tests we perform, from regulations, UN Regulation No. 44 and UN Regulation No. 129, to conformity of production procedures, factory audits and pre-consumer testing. Training and consultancy are provided by our child restraint system testing experts and engineers, depending on customers' needs. We can offer training to a team with a maximum of 10 people, which can be either at our testing laboratory in Helmond or on location.

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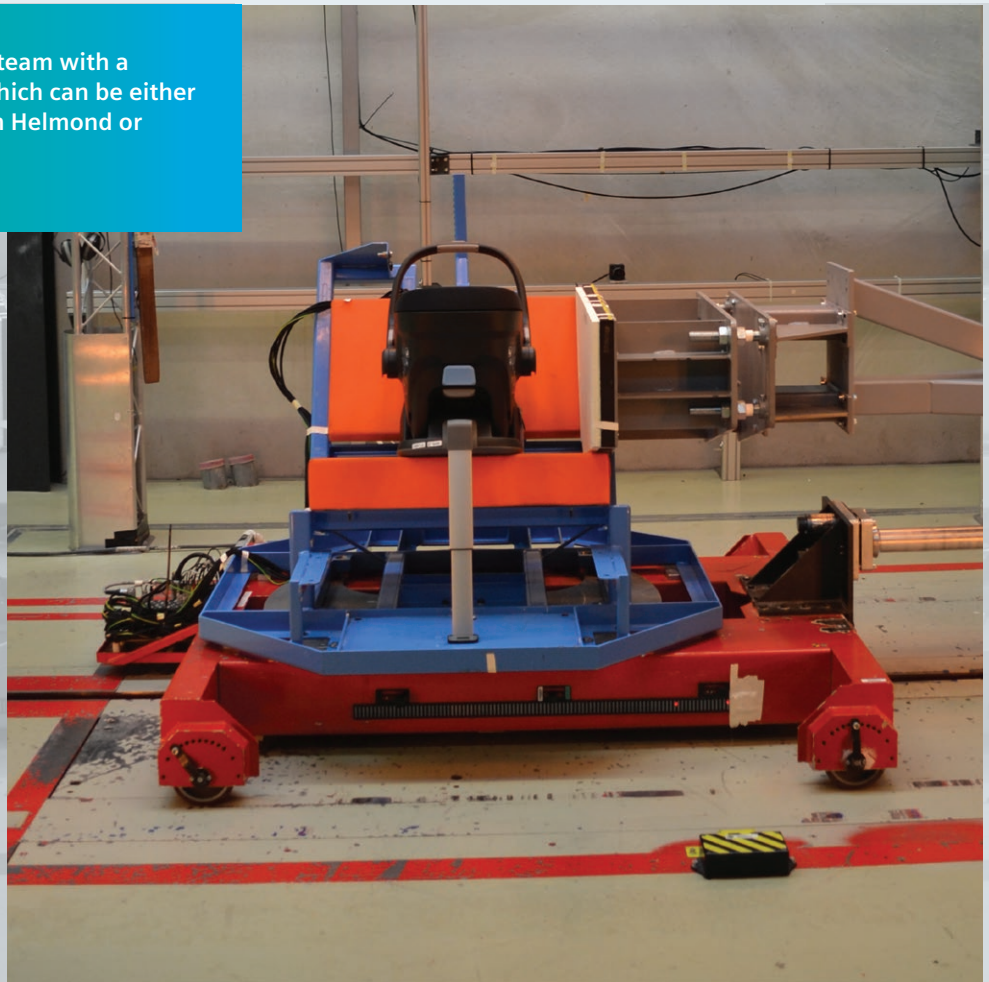

Virtual crash test software: Simcenter Madymo

Simcenter Madymo cuts costs and substantially reduces the time-to-market. Ultimately, the customer can physically test the final design on our test sleds.

Siemens Digital Industries Software or the manufacturer can perform virtual crash test analysis using our Simcenter™ Madymo™ software, which is supported by validation models for all child dummies used in major test protocols (Q-dummies, P-dummies, hybrid-III family). Using Simcenter Madymo, child restraint system manufacturers, researchers and engineers can model, analyze and optimize safety designs early in the development process. This reduces the expense and time involved in building and testing prototypes.

Adopting Simcenter Madymo also minimizes the risk of making design changes late in the development phase. For new or improved models and components, using Simcenter Madymo cuts costs and substantially reduces the time-to-market. Ultimately, the customer can physically test the final design on our test sleds.

About Siemens Digital Industries Software
Siemens Digital Industries Software is driving transformation to enable a digital enterprise where engineering, manufacturing and electronics design meet tomorrow. Our solutions help companies of all sizes create and leverage digital twins that provide organizations with new insights, opportunities and levels of automation to drive innovation. For more information on Siemens Digital Industries Software products and services, visit siemens.com/software or follow us on LinkedIn, Twitter, Facebook and Instagram. Siemens Digital Industries Software – Where today meets tomorrow.

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