

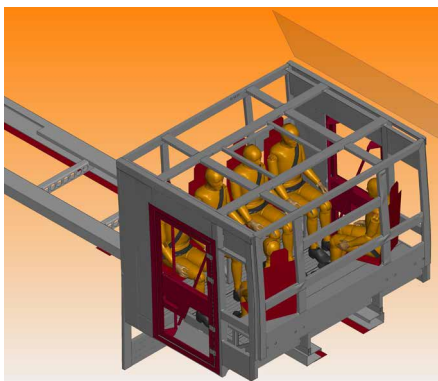
Finite element calculation

Dynamic simulation

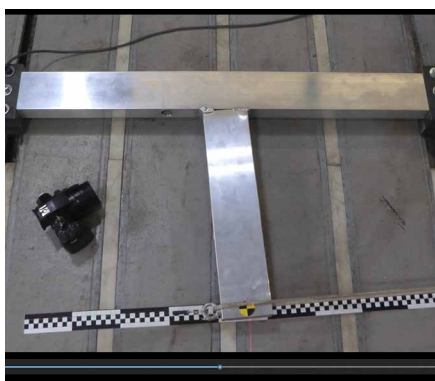


We perform static and dynamic calculations and simulations of the load on components using powerful FEM tools.

- ✓ **STRENGTH OF TRUCK CABS ACCORDING TO ECE-R29**
- ✓ **STRENGTH OF BUS BODIES ACCORDING TO ECE-R66**
- ✓ **TRUCK UNDERRIDE PROTECTION ACCORDING TO ECE-R58**
- ✓ **STRENGTH OF FIA SAFETY STRUCTURES**
- ✓ **CRASH BARRIER SIMULATIONS ACCORDING TO EN 1317**



Simulation of the roll cage of a crew cabin of an emergency vehicle according to ECE-R29



Quasi-static validation testing of a model of the structure

STRENGTH TESTS OF TRUCK CABS AND BUS BODIES ACCORDING TO ECE-R29 AND ECE-R66 RESPECTIVELY

Truck cabs are subject to the ECE-R29 regulation, which regulates the protection of occupants in the event of the vehicle tipping over. The ECE-R66 regulation applies to bus and coach bodies. In many cases, a real test can be dispensed with and the certification body accepts proof based on the more cost-effective finite element simulation. We create a simulation model for your cabin or body and validate it using quasi-static tests of the key elements in the lab.

YOUR ADVANTAGE

Efficient and resource-saving

We create a virtual model of your product to be tested and validate it through real tests with the entire product or a sample model of the structure. This allows changes to be made quickly and cost-effectively. So it is possible to respond individually to the requirements of requests for proposals.

Innovation and optimisation

The validated model provides an ideal basis to further optimise the product and to know and improve its properties precisely.

The mechanisms can be analysed in detail on the virtual model.

Reproducible and comprehensible

The cause of a failed test can be determined and eliminated. System variables can be investigated in a reproducible environment.

TESTS OF TRUCK REAR UNDERRUN PROTECTIONS ACCORDING TO ECE-R58

The rear underrun protection on trucks is intended to prevent the front of the car from sliding so far under the truck in the event of a rear-end collision that it becomes a deadly guillotine for the occupants of the car.

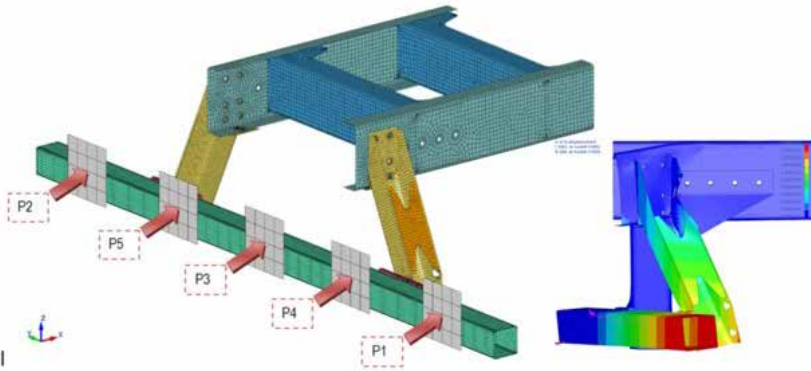
DTC AG has been carrying out quasi-static tests according to the European regulation ECE-R58 for a long time. They can be used to prove that the underride guard only deforms by a defined maximum value when successively subjected to specified forces, thus gaining approval for the device.

The LS DYNA software used is a leader in dynamic and quasi-static simulations and is also applied in vehicle development.

The calculations are carried out efficiently on high-performance computers.



Testing of a truck rear underrun protection



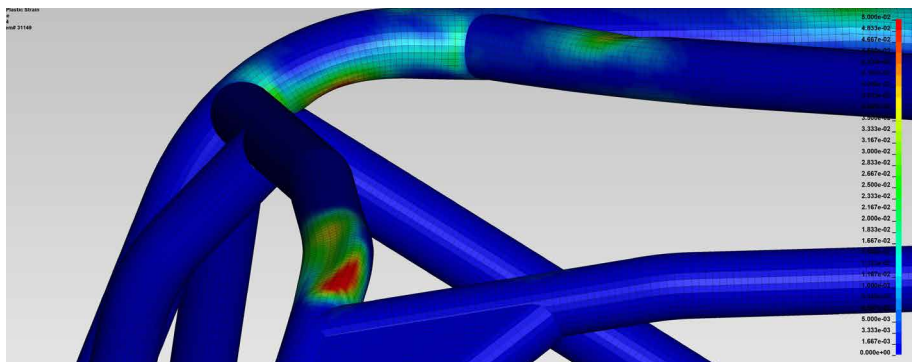
Simulation of a truck rear underrun protection according to ECE-R58

STRENGTH TESTS OF ROLL BARS OF RACING CARS ACCORDING TO FIA-REGULATIONS

The roll cages of racing cars are often unique constructions that have to be certified according to the FIA regulations. To avoid having to produce an additional roll cage for certification through laboratory testing, compliance with the requirements of the FIA regulations can be demonstrated through finite element simulation. Based on a CAD model that you provide us with, we create the simulation model and assign it the properties of the materials used. Due to its FIA accreditation, DTC AG is listed on the FIA's technical list no. 35, therefore our reports are accepted for the certification of safety cages.



Testing of a roll cage according to FIA-Regulation



Simulation of a roll cage according to FIA-Regulation

CRASH BARRIER SIMULATIONS ACCORDING TO EN 1317

The crash simulation against guardrails is covered in a separate flyer.



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