Simulation and testing go hand in hand at Montaplast. Right from the start, our engineers take advantage of the numerical simulation and exchange permanently information and results with our test laboratories. In this way results are directly taken into consideration for optimized technical concepts.

Simulation

Our Product Developers illustrate all processes in detailed simulations and hunt out potential weak points from the very beginning. The fact that 3D simulations are increasingly replacing physical prototypes gives us a tremendous advantage in keeping time and development costs to a minimum. One disadvantage is that sources of error must also be simulated and eliminated. No problem, at Montaplast we have that down to a fine art. Our analysis include:

- Rheology (tool charge, tempering, shape distortion)
- Structural analysis (rigidity, resistance, hot spots)
- Dynamic (head impact, pedestrian protection, crash tests)
- Flow (acoustics, charge cycle, air filtration, water separation)
- Methods of the statistical test planning

Testing

It is only by testing of the prototype that each simulation model gets the realistic shape and that material, functional, and endurance requirements are defined. In all development phases we test the required properties of the product. These are some tests we permanently implement:

- Legal requirements (head impact, pedestrian protection, emissions)
- Surrounding conditions (temperature, climate, burst pressure, vibration)
- Functional testing (endurance, misuse, engine testing, road trials)
- Acoustics (modal analysis)