

## **Live crash test in Paris convinces 100 journalists and major customers**

**Sortimo demonstrated complete confidence in its products at the last live crash test in Paris on 24 October 2007. A vehicle fully equipped with Sortimo Globelyst shelving units was driven into a wall at 50 km/h. The live crash test on the UTAC premises was attended by over 100 journalists and major customers – an unusual and candid demonstration of transparency which shows quite convincingly that safety is not a matter of luck!**

### **When kilograms convert into tonnes**

Almost a tradition: Sortimo tests the safety of its in-vehicle equipment in crash tests time and again. This time, it was the **UTAC test installation in Paris that hosted a real-life crash sled test**. In the so-called crash sled test as defined in ECE 44, a head-on collision at 50 km/h was simulated in that the body-in-white of a transit van of a renowned European automobile manufacturer was mounted on a crash sled, accelerated to exactly 50 km/h and then braked abruptly. It was equipped with Sortimo Globelyst in-vehicle equipment weighing 132 kg. To simulate a realistic load, the cases, boxes and drawers were loaded with sand sacks (approx. 400 kg). The crash sled was then pulled into its start position by means of a cable, the start signal was given and the crash sled was then accelerated over a distance of one hundred metres. As it impacted after just a few moments against the barrier with a loud bang, it had been braked from 50 km/h to zero in less than 100 milliseconds.

Upon impact, the enormous kinetic energy has to be absorbed by the car body and in-vehicle equipment to protect passengers from injury. The major part of impact energy is absorbed by the in-vehicle equipment and only the residual energy is transmitted to the vehicle body, thus protecting the skeletal structure from destruction.

### **Calculated deformation**

In spite of the Sortimo Globelyst in-vehicle equipment being light in weight, the 400-kg load made up of sand sacks in cases, boxes and drawers was reliably restrained. And even though the stress loads for the lightweight modules added up to some 11.5 tonnes, the structure itself was preserved and the kinetic energy converted into calculated distortion. The Globelyst in-vehicle equipment took the punishment without endangering the driver and passengers. And everything remained in its place – even the sand sacks housed in the boxes were still in their original position after the crash.

The three high-speed cameras which documented the crash at a frame frequency of 1000 frames per second demonstrate:

In the **first phase**, the load peaks were cushioned by the floating safety floor which lifted off the vehicle floor immediately after the collision. The rest of the kinetic energy was absorbed and degraded through deformation of the in-vehicle equipment and the safety floor.

In the **second phase** of the crash test, the in-vehicle equipment intercepted the developing forces and relayed them to the bodywork structure. The cargo itself was reliably held in place by the Sortimo Globelyst modules.

### **Speechlessness after a crash test with a wooden shelving system**

A horrific sight was presented to the audience upon repeating the crash test with a DIY shelving system made of wood (total weight approx. 120 kg). Upon impact, the shelves were subjected to a 22-fold loading factor (corresponds to approx. 11.5 t) brought about by their own weight plus that of the cargo, whereupon they simply disintegrated into their component parts. The shelves including the cargo shot towards the driver's cab virtually unbraked. The drivers and passengers would have been seriously – if not fatally – injured in this case.

Yet again, this comparative test shows just how important it is to stow materials and tools safely and securely! Sortimo – your guarantee of on-board safety!

### **Technical Specifications**

Realisation:	UTAC, Paris, 24.10.2007
Crash specs as defined in:	ECE-R-44
Sortimo Globelyst:	approx. 130 kg (dead weight)
Additional load:	approx. 400 kg (sand sacks)
Total weight:	530 kg
Barrier impact speed:	50 km/h
Average impulse:	22 g over 100 ms "abrupt load 11.5 t"

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