

SeatBridge Crash Test Study Proves Safety and Structural Resilience in Real-World Scenarios

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Redefining Safety Without Compromising Design

Any innovation that changes a vehicle's structural design must pass one uncompromising test: crash safety. Claudio Buccini and the SeatBridge team knew that no amount of production efficiency or aesthetic improvement would matter unless the system could meet or exceed regulatory thresholds in real-world crash scenarios. So, they tested it rigorously.

ECE R14-Compliant Testing

A structural analysis conducted by ABACAD Engineering subjected SeatBridge to stress simulations exceeding the European ECE R14 standard. In crash simulations involving a 15.35 kN belt pull—representing real-world deceleration forces—the system withstood the load without structural failure. While there was some plastic deformation, no safety-critical element collapsed, and the overall platform-SeatBridge preserved its anchoring function.

Belt Load Distribution & Deformation Study

The crash test data revealed that forces were absorbed evenly across the five anchoring points integrated into the SeatBridge. The rear anchors experienced only 5% of the total belt force, while the central and front anchors bore the brunt, demonstrating controlled energy dispersion. The deformation pattern remained within acceptable parameters, with a maximum displacement of 120 mm.

Stronger Than Brackets

Traditional seat mounting systems rely on individual brackets that are often less resilient under torsional or side impact stress. SeatBridge's monolithic design improves force distribution,

eliminating stress concentration points and reinforcing the vehicle floor without excess material. Despite replacing seven components, it adds only 0.7 kg to the total weight—while delivering stronger structural behavior and greatly improving the side crash safety for front passengers.

Minimal Weight, Maximum Benefit

This minimal weight addition proves crucial for EVs and performance vehicles where every gram matters. SeatBridge allows OEMs to improve safety and interior efficiency without sacrificing efficiency or compliance.

Confidence in Compliance

The crash test results position SeatBridge as a robust, safety-compliant solution ready for integration into new models. Its structural strength, predictability under stress, and minimal intrusion into cabin space make it a superior alternative to existing solutions. For safety engineers and compliance officers, the message is clear: SeatBridge is ready.

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