

Lateral Full Door Test

- Overview
 - Quasi-static door-in-frame test (door, latch, striker and hinges in a simulated door frame)
 - Tests side hinged (except cargo) doors in the fully latched position
 - Developed to simulate latch failures in crashes that produce outwards forces on the door (i.e., through occupant loading or door inertia) such as side crashes that result in vehicle spin and rollover
 - Replaces current lateral component test for latch in primary position
- Performance requirement
 - When the door, latch, striker, and hinges are mounted in a simulated doorframe, the latch and striker shall not separate when a lateral tensile force of 14,000 N is applied to the door near the door latch for a period of not less than 10 seconds after the load force is achieved.
- Test Procedure
 - The test is designed to recreate forces that primarily occur along the vehicle's lateral axis in real world crashes, which cause door openings. To recreate door openings, a force of 14,000 N is applied to the door by use of one hydraulic loading device. The striker is connected to the loading device, which is positioned along the lateral axis of the door at the height of the door latch. The test is conducted with the door held rigidly in place at its interior side, while the loading device applies a tensile lateral force of 14,000 N at a constant rate of displacement of 20 mm per minute.
- NHTSA Testing
 - 1993-1994
 - 20 doors tested from 1983-1991 vehicles
 - Minimum test failure load = 9,832 N
 - Maximum test failure load = 20,811 N
 - Average test failure load = 13,495 N
 - 2000-2001
 - 21 doors tested from 1993-1998 vehicles
 - Minimum test failure load = 7,788 N
 - Maximum test failure load = 20,732 N
 - Average test failure load = 14,010 N
 - NASS weighted - average test failure load = 14,000 N
- Reports
 - DOT HS 808 188, "Door Latch Integrity Study: Evaluation of Door Latch Failure Modes", January 1994.
 - Howe, G., Leigh, M., Willke, D., "Door Latch Integrity Study: Engineering Analysis and NASS Case Review", December 1991, NHTSA Docket 94-70-N02-006
- Diagram (see next page)

New Lateral Full Door Test

For Hinged Side Doors (except Cargo) in Primary Latched Position

The door, latch, striker, and hinges in a simulated door frame shall maintain and not separate for at least 10 seconds after achieving a lateral tensile force of 14,000 N near the door latch.

