

Figure 1 — Test Fixture For Clamped Specimens

[70 FR 39966, July 12, 2005]

§ 571.206 Standard No. 206; Door locks and door retention components.

S1. *Purpose and Scope.* This standard specifies requirements for door locks and door retention components including latches, hinges, and other supporting means, to minimize the likeli-

hood of occupants being thrown from the vehicle as a result of impact.

S2. *Application.* This standard applies to passenger cars, multipurpose passenger vehicles, and trucks.

S3. *Definitions.*

Auxiliary door latch means a latch or latches, other than the primary latch or latches, fitted to a back door or

back door system that is equipped with more than one latch.

Back door means a door or door system on the back end of a motor vehicle through which passengers can enter or depart the vehicle, or cargo can be loaded or unloaded; but does not include:

- (a) A trunk lid; or
- (b) A door or window that is composed entirely of glazing material and whose latches and/or hinges are attached directly onto the glazing material.

Cargo-Type Door means a door designed primarily to accommodate cargo loading including, but not limited to, a two-part door that latches to itself.

Fork-bolt means the part of the door latch that engages the striker when in a latched position.

Fork-bolt opening means the direction opposite to that in which the striker enters to engage the fork-bolt.

Primary door latch means, with respect to a back door or back door system, the latch or latches equipped with both the fully latched position and the secondary latched position.

Side front door means a door that in a side view, has 50 percent or more of its opening area forward of the rearmost point on the driver's seatback, when the driver's seat is adjusted to its most vertical and rearward position.

Side rear door means a door that, in a side view, has more than 50 percent of its opening area to the rear of the rearmost point on the driver's seatback, when the driver's seat is adjusted to its most vertical and rearward position.

Trunk lid means a movable body panel that provides access from outside the vehicle to a space wholly partitioned from the occupant compartment by a permanently attached partition or a fixed or fold-down seat back.

S4. Requirements.

(a) *Components on side doors.* Components on any side door that leads directly into a compartment that contains one or more seating accommodations shall conform to this standard.

(b) *Components on back doors.* Components on any back door of a passenger car or multipurpose passenger vehicle with a gross vehicle weight rating (GVWR) of 4,536 kilograms (10,000

pounds) or less that leads directly into a compartment that contains one or more seating accommodations shall conform to this standard, subject to the following compliance schedule:

(1)(i) For those affected passenger cars and multipurpose passenger vehicles manufactured on or after September 1, 1997, and before September 1, 1998, the amount of such vehicles complying with this standard shall be not less than 60 percent of the combined total production of passenger cars and multipurpose passenger vehicles, based on:

(A) The manufacturer's average annual production of such vehicles manufactured on or after September 1, 1996 and before September 1, 1998; or

(B) The manufacturer's production of such vehicles on or after September 1, 1997 and before September 1, 1998.

(ii) For calculating average annual production of affected passenger cars and multipurpose passenger vehicles for each manufacturer and the number of such vehicles manufactured by each manufacturer, a vehicle produced by more than one manufacturer shall be attributed to a single manufacturer as follows:

(A) A vehicle that is imported shall be attributed to the importer;

(B) A vehicle manufactured in the United States by more than one manufacturer, one of which also markets the vehicle, shall be attributed to the manufacturer that markets the vehicle.

(C) A vehicle produced by more than one manufacturer shall be attributed to any one of the vehicle's manufacturers specified by an express written contract between the manufacturer so specified and the manufacturer to which the vehicle would otherwise be attributed under paragraph (b)(1)(ii)(A) or (B) of this section.

(2) Components on the back doors of affected passenger cars and multipurpose passenger vehicles manufactured on and after September 1, 1998 shall conform to all applicable requirements of this standard.

(c) Components on folding doors, roll-up doors, doors that are designed to be easily attached to or detached from motor vehicles manufactured for operation without doors, and doors that are equipped with the wheelchair lifts and

that are linked to an alarm system consisting of either a flashing visible signal located in the driver's compartment or an alarm audible to the driver that is activated when the door is open, need not conform to this standard.

(d) A particular latch or hinge assembly utilized as a test specimen need not meet further requirements after having been subjected to and having met any one of the requirements of S4 or S5.1 through S5.4.

S4.1 Hinged Side Doors, Except Cargo-Type Doors.

S4.1.1 Door Latches. Each door latch and striker assembly shall be provided with two positions consisting of—

- (a) A fully latched position; and
- (b) A secondary latched position.

S4.1.1.1 Longitudinal Load. The door latch and striker assembly, when in the fully latched position, shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. When in the secondary latched position, the door latch and striker assembly shall not separate when a longitudinal load of 4,450 Newtons (1,000 pounds) is applied.

S4.1.1.2 Transverse Load. The door latch and striker assembly, when in the fully latched position, shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied. When in the secondary latched position, the door latch and striker assembly shall not separate when a transverse load of 4,450 Newtons (1,000 pounds) is applied.

S4.1.1.3 Inertia Load. The door latch shall not disengage from the fully latched position when a longitudinal or transverse inertia load of 30g is applied to the door latch system (including the latch and its actuating mechanism with the locking mechanism disengaged).

S4.1.2 Door Hinges. Each door hinge system shall support the door and shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. Similarly, each door hinge system shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

S4.1.3 Door Locks. Each door shall be equipped with a locking mechanism with an operating means in the interior of the vehicle.

S4.1.3.1 Side Front Door Locks. When the locking mechanism is engaged, the outside door handle or other outside latch release control shall be inoperative.

S4.1.3.2 Side Rear Door Locks. In passenger cars and multipurpose passenger vehicles, when the locking mechanism is engaged both the outside and inside door handles or other latch release controls shall be inoperative.

S4.2 Hinged Cargo-Type Side Doors.

S4.2.1 Door Latches.

S4.2.1.1 Longitudinal Load. Each latch system, when in the latched position, shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied.

S4.2.1.2 Transverse Load. Each latch system, when in the latched position, shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied. When more than one latch system is used on a single door, the load requirement may be divided among the total number of latch systems.

S4.2.2 Door Hinges. Each door hinge system shall support the door and shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied, and when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

S4.3 Sliding Side Doors. The track and slide combination or other supporting means for each sliding door shall not separate when a total transverse load of 17,800 Newtons (4,000 pounds) is applied, with the door in the closed position.

S4.4 Hinged Back Doors.

S4.4.1 Door Latches. Each back door system shall be equipped with at least one primary latch and striker assembly.

S4.4.1.1 Load Test One. The primary door latch and striker assembly, when in the fully latched position, shall not separate when a load of 11,000 Newtons (2,500 pounds) is applied in the direction perpendicular to the face of the latch (corresponding to the longitudinal load test for side door latches) such that the latch and the striker anchorage are not compressed against each other. When in the secondary latched position, the primary latch and striker assembly shall not separate when a load of 4,450 Newtons (1,000

pounds) is applied in the same direction.

S4.4.1.2 *Load Test Two.* The primary door latch and striker assembly, when in the fully latched position, shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied in the direction of the fork-bolt opening and parallel to the face of the latch (corresponding to the transverse load test). Figure 1 depicts the loading direction for this test. When in the secondary latched position, the primary latch and striker assembly shall not separate when a load of 4,450 Newtons (1,000 pounds) is applied in the same direction.

S4.4.1.3 *Load Test Three.* The primary door latch and striker assembly on back doors equipped with a latch and striker assembly at the bottom of the door and that open upward shall not disengage from the fully latched position when a load of 8,900 Newtons (2,000 pounds) is applied in a direction orthogonal to the directions specified in S4.4.1.1 and S4.4.1.2 above.

S4.4.1.4 *Inertia Load.* The primary door latch shall not disengage from the fully latched position when an inertia load of 30g is applied to the door latch system, including the latch and its activation mechanism with the locking mechanism disengaged, in the directions specified in S4.4.1.1, S4.4.1.2, and S4.4.1.3.

S4.4.1.5 *Auxiliary Door Latches.* Each auxiliary back door latch and striker assembly shall be provided with a fully latched position and shall comply with the requirements specified in S4.4.1.1, S4.4.1.2, and S4.4.1.4.

S4.4.2 *Door Locks.* Each back door system equipped with interior door handles or that leads directly into a compartment that contains one or more seating accommodations shall be equipped with a locking mechanism with operating means in both the interior and exterior of the vehicle. When the locking mechanism is engaged, both the inside and outside door handles or other latch release controls shall be inoperative.

S4.4.3 *Door Hinges.*

S4.4.3.1 *Load Test One.* Each back door hinge system shall support the door and shall not separate when a load of 11,000 Newtons (2,500 pounds) is ap-

plied perpendicular to the hinge face plate (longitudinal load test) such that the hinge plates are not compressed against each other.

S4.4.3.2 *Load Test Two.* Each back door hinge system shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied perpendicular to the axis of the hinge pin and parallel to the hinge face plate (transverse load test) such that the hinge plates are not compressed against each other.

S4.4.3.3 *Load Test Three.* Each hinge system on back doors that open upward shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied in the direction of the axis of the hinge pin.

S4.5 *Sliding Back Doors.* The track and slide combination or other supporting means for each sliding door shall not separate when a total longitudinal load of 17,800 Newtons (4,000 pounds) is applied, with the door in the closed position.

S5.1 *Hinged Side Doors, Except Cargo-Type Doors.*

S5.1.1 *Door Latches.*

S5.1.1.1 *Longitudinal and Transverse Loads.* Compliance with paragraphs S4.1.1.1 and S4.1.1.2 shall be demonstrated in accordance with paragraph 5 of Society of Automotive Engineers Recommended Practice J839, *Passenger Car Side Door Latch Systems*, June 1991.

S5.1.1.2 *Inertia Load.* Compliance with S4.1.1.3 shall be demonstrated by approved tests or in accordance with paragraph 6 of Society of Automotive Engineers Recommended Practice J839, *Passenger Car Side Door Latch Systems*, June 1991.

S5.1.2 *Door Hinges.* Compliance with S4.1.2 shall be demonstrated in accordance with paragraph 4 or 5, as appropriate, of Society of Automotive Engineers Recommended Practice J934, *Vehicle Passenger Door Hinge Systems*, July 1982. For piano-type hinges, the hinge spacing requirements of SAE J934 shall not be applicable and arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

S5.2 *Hinged Cargo-Type Side Doors.*

S5.2.1 *Door Latches.* Compliance with S4.2.1 shall be demonstrated in accordance with paragraphs 5.1 and 5.3,

SAE Recommended Practice J839, *Passenger Car Side Door Latch Systems*, June 1991. An equivalent static test fixture may be substituted for that shown in Figure 2 of SAE J839, if required.

S5.2.2 *Door Hinges*. Compliance with S4.2.2 shall be demonstrated in accordance with paragraph 4 or 5, as appropriate, of SAE Recommended Practice J934, *Vehicle Passenger Door Hinge Systems*, July 1982. For piano-type hinges, the hinge spacing requirement of SAE J934 shall not be applicable and arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

S5.3 *Sliding Side Doors*. Compliance with S4.3 shall be demonstrated by applying an outward transverse load of 8,900 Newtons (2,000 pounds) to the load-bearing members at the opposite edges of the door (17,800 Newtons (4,000 pounds) total). The demonstration may be performed either in the vehicle or with the door retention components in a bench test fixture.

S5.4 *Hinged Back Doors*.

S5.4.1.1 *Load Tests One, Two, and Three*. Compliance with S4.4.1.1,

S4.4.1.2, and S4.4.1.3 shall be demonstrated in the same manner as specified in S5.1.1.1, except that the loads shall be in the directions specified in S4.4.1.1, S4.4.1.2, and S4.4.1.3. The same test device may be used for Load Tests Two and Three.

S5.4.1.2 *Inertia Load*. Compliance with S4.4.1.4 shall be demonstrated in the same manner as specified in S5.1.1.2.

S5.4.2 *Door Hinges*. Compliance with S4.4.3.1, S4.4.3.2, and S4.4.3.3 shall be demonstrated in the same manner as specified in S5.1.2, except that the loads shall be in the directions specified in S4.4.3.1, S4.4.3.2, and S4.4.3.3. The same test device may be used for Load Tests Two and Three.

S5.5 *Sliding Back Doors*. Compliance with S4.5 shall be demonstrated by applying an outward longitudinal load of 8,900 Newtons (2,000 pounds) to the load bearing members at the opposite edges of the door (17,000 Newtons (4,000 pounds) total). The demonstration may be performed either in the vehicle or with the door retention components in a bench test fixture.

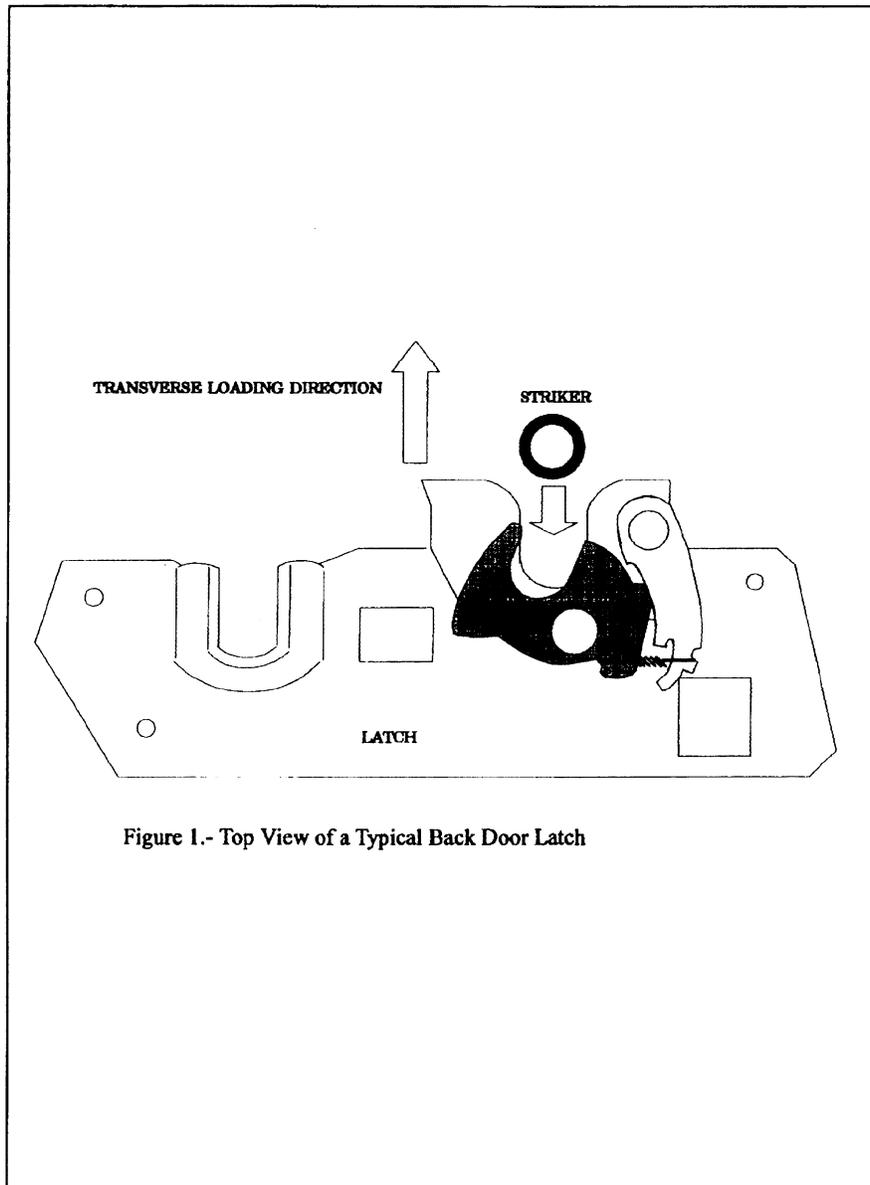


Figure 1.- Top View of a Typical Back Door Latch

[36 FR 22902, Dec. 2, 1971, as amended at 37 FR 284, Jan. 8, 1972; 50 FR 12031, Mar. 27, 1985; 60 FR 13646, Mar. 14, 1995; 60 FR 50134, Sept. 28, 1995; 61 FR 39907, July 31, 1996]

EFFECTIVE DATE NOTE: At 72 FR 5399, Feb. 6, 2007, § 571.206 was amended by revising S1; S2; the definitions of "auxiliary door latch," "back door," "fork-bolt," "primary door latch," "side front door," "side rear door," and "trunk lid" in S3; S4 through S4.1.1.3;

S4.1.2; S4.2 through S4.2.1.2; S4.2.2; S4.3; S5.1 through S5.1.1.2; S5.1.2; S5.2; S5.2.1; S5.2.2; Figure 1; and adding “auxiliary door latch system,” “body member,” “door closure warning system,” “door hinge system,” “door latch system,” “door member,” “door system,” “double door,” “folding door,” “fork-bolt opening direction,” “fully-latched position,” “hinge,” “hinge pin,” “latch,” “primary door latch system,” “secondary latched position,” “striker,” to the definitions in S3; S4.1.1.4; S4.1.2.1 through S4.1.2.3; S4.2.1.3; S4.2.2.1; S4.2.2.2; S4.3.1; S4.3.2; S5; S5.1.1.3; S5.1.1.4; S5.1.2.1 through S5.1.2.4; S5.2.1.1 through S5.2.1.4; S5.2.2.1 through S5.2.2.4; S5.3; Figures 2 through 4; Table 1; Figures 5 through 9; and removing “cargo-type door” and “fork-bolt opening” from the definitions in S3, S4.1.3, S4.1.3.1, S4.4 through S4.5, and S5.4 through S5.5, effective Sept. 1, 2009. For the convenience of the user, the added and revised text is set forth as follows:

§ 571.206 Standard 206; Door locks and door retention components.

S1. Scope and Purpose. This standard specifies requirements for vehicle door locks and door retention components, including latches, hinges, and other supporting means, to minimize the likelihood of occupants being ejected from a vehicle as a result of impact.

S2. Application. This standard applies to passenger cars, multipurpose passenger vehicles, and trucks, and buses with a gross vehicle weight rating (GVWR) of 4,536 kg or less.

S3. Definitions.

Auxiliary Door Latch is a latch equipped with a fully latched position, with or without a secondary latched position, and fitted to a door or door system equipped with a primary door latch system.

Auxiliary Door Latch System consists of door latches and strikers other than those associated with the primary door latch system.

Back Door is a door or door system on the back end of a motor vehicle through which passengers can enter or depart the vehicle or cargo can be loaded or unloaded. It does not include:

(a) A trunk lid; or

(b) A door or window composed entirely of glazing material and whose latches and/or hinge systems are attached directly to the glazing material.

Body Member is that portion of the hinge normally affixed to the body structure.

Door Closure Warning System is a system that will activate a visual signal when a door latch system is not in its fully latched position and the vehicle ignition is activated.

Door Hinge System is one or more hinges used to support a door.

Door Latch System consists of latches and strikers installed on a door system.

Door Member is that portion of the hinge normally affixed to the door structure and constituting the swinging member.

Door System is the door, latch, striker, hinges, sliding track combinations and other door retention components on a door and its surrounding doorframe. The door system of a double door includes both doors.

Double Door is a system of two doors where the front door or wing door opens first and connects to the rear door or bolted door, which opens second.

Folding Door is a movable barrier, which will close off an entranceway to a bus, multipurpose passenger vehicle or truck, consisting of two or more hinge panels that swing, slide, or rotate; does not have a striker and latch assembly.

Fork-bolt is the part of the latch that engages and retains the striker when in a latched position.

Fork-bolt Opening Direction is the direction opposite to that in which the striker enters the latch to engage the fork-bolt.

Fully Latched Position is the coupling condition of the latch that retains the door in a completely closed position.

Hinge is a device system used to position the door relative to the body structure and control the path of the door swing for passenger ingress and egress.

Hinge Pin is that portion of the hinge normally interconnecting the body and door members and establishing the swing axis.

Latch is a device employed to maintain the door in a closed position relative to the vehicle body with provisions for deliberate release (or operation).

Primary Door Latch is a latch equipped with both a fully latched position and a secondary latched position and is designated as a “primary door latch” by the manufacturer.

Primary Door Latch System consists of a primary door latch(s) and a striker(s).

Secondary Latched Position refers to the coupling condition of the latch that retains the door in a partially closed position.

Side Front Door is a door that, in a side view, has 50 percent or more of its opening area forward of the rearmost point on the driver’s seat back, when the seat back is adjusted to its most vertical and rearward position.

Side Rear Door is a door that, in a side view, has 50 percent or more of its opening area to the rear of the rearmost point on the driver’s seat back, when the driver’s seat is adjusted to its most vertical and rearward position.

Striker is a device with which the latch engages to maintain the door in the fully latched or secondary latched position.

Trunk Lid is a movable body panel that provides access from outside the vehicle to a space wholly partitioned from the occupant compartment by a permanently attached partition or fixed or fold-down seat back.