

S7.4 *Rear moving barrier impact test conditions.* In addition to the conditions of S7.1 and S7.2, the conditions of S7.3(b) and S7.6 of 571.301 of this chapter apply to the conducting of the rear moving deformable barrier impact test specified in S6.2.

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S7.6 *Electrical isolation test procedure.* In addition to the conditions of S7.1 and S7.2, the conditions in S7.6.1 through S7.6.7 apply to the measuring of electrical isolation specified in S5.3(a).

S7.6.1 Prior to any barrier impact test, the high voltage source is connected to the vehicle's propulsion system, and the vehicle ignition is in the "on" (propulsion system energized) position. Bypass any devices or systems that do not allow the propulsion system to be energized at the time of impact when the vehicle ignition is on and the vehicle is in neutral. For a vehicle that utilizes an automatic disconnect between the high voltage source and the traction system that is physically contained within the high voltage electric energy storage/conversion/power generating system, the electrical isolation measurement after the test is made from the traction-system side of the automatic disconnect to the vehicle chassis electricity-conducting structure. For a vehicle that utilizes an automatic disconnect that is not physically contained within the high voltage electric energy storage/conversion/power generating system, the electrical isolation measurement after the test is made from both the high voltage source side and from the traction-system side of the automatic disconnect to the vehicle chassis electricity-conducting structure.

S7.6.2 The voltmeter used in this test has an internal resistance of at least 10 MΩ.

S7.6.3 The voltage(s) is/are measured as shown in Figure 1 and the high voltage source voltage(s) (Vb) is/are recorded. Before any vehicle impact test, Vb is equal to or greater than the nominal operating voltage as specified by the vehicle manufacturer.

S7.6.4 The voltage(s) is/are measured as shown in Figure 2, and the voltage(s) (V1) between the negative side of the high voltage source and the vehicle chassis electricity-conducting structure is/are recorded.

S7.6.5 The voltage(s) is/are measured as shown in Figure 3, and the voltage(s) (V2) between the positive side of the high voltage source and the vehicle chassis electricity-conducting structure is/are recorded.

S7.6.6 If V1 is greater than or equal to V2, insert a known resistance (Ro) between the negative side of the high voltage source and the vehicle chassis electricity-conducting structure. With the Ro installed, measure the voltage (V1') as shown in Figure 4 between the negative side of the high voltage source and the vehicle chassis electricity-

conducting structure. Calculate the electrical isolation resistance (Ri) according to the formula shown. Divide Ri (in ohms) by the working voltage of the high voltage source (in volts) to obtain the electrical isolation (in ohms/volt).

S7.6.7 If V2 is greater than V1, insert a known resistance (Ro) between the positive side of the high voltage source and the vehicle chassis electricity-conducting structure. With the Ro installed, measure the voltage (V2') as shown in Figure 5 between the positive side of the high voltage source and the vehicle chassis electricity-conducting structure. Calculate the electrical isolation resistance (Ri) according to the formula shown. Divide Ri (in ohms) by the working voltage of the high voltage source (in volts) to obtain the electrical isolation (in ohms/volt).

S7.7 *Voltage measurement.* For the purposes of determining low voltage source specified in S5.3(b), voltage is measured as shown in Figure 1. Voltage Vb is measured across the two terminals of the voltage source. Voltages V1 and V2 are measured between the source and the vehicle chassis electricity-conducting structure.

S8 Test procedure for on-board electrical isolation continuous monitoring system. Prior to any impact test, the requirements of S5.4 for the on-board electrical isolation continuous monitoring system shall be confirmed using the following procedure.

(1) The electric energy storage device is at the state of charge specified in S7.1.

(2) The switch or device that provides power from the high voltage system to the propulsion motor(s) is in the activated position or the ready-to-drive position.

(3) Determine the isolation resistance, Ri, of the high voltage source with the electrical isolation monitoring system using the procedure outlined in S7.6.2 through S7.6.7.

(4) Insert a resistor with resistance equal to $R_o = 1/(1/95 \text{ times the working voltage of the high voltage source}) - 1/R_i$ between the positive terminal of the high voltage source and the vehicle chassis electric conducting structure.

The electrical isolation monitoring system indicator shall display a warning to the driver.

§ 571.401 Standard No. 401; Interior trunk release.

S1. *Purpose and scope.* This standard establishes the requirement for providing a trunk release mechanism that makes it possible for a person trapped inside the trunk compartment of a passenger car to escape from the compartment.

S2. *Application.* This standard applies to passenger cars that have a trunk

compartment. This standard does not apply to passenger cars with a back door.

S3. Definitions.

Back door means a door or door system on the back end of a passenger car through which cargo can be loaded or unloaded. The term includes the hinged back door on a hatchback or a station wagon.

Trunk compartment. (a) Means a space that:

- (1) Is intended to be used for carrying luggage or cargo,
- (2) Is wholly separated from the occupant compartment of a passenger car by a permanently attached partition or by a fixed or fold-down seat back and/or partition,
- (3) Has a trunk lid, and
- (4) Is large enough so that the three-year-old child dummy described in Subpart C of Part 572 can be placed inside the trunk compartment, and the trunk lid can be closed and latched with all removable equipment furnished by the passenger car manufacturer stowed in accordance with label(s) on the passenger car or information in the passenger car owner's manual, or, if no information is provided, as located when the passenger car is delivered. (Note: For purposes of this standard, the Part 572 Subpart C test dummy need not be equipped with the accelerometers specified in § 572.21.)

(b) Does not include a sub-compartment within the trunk compartment.

Trunk lid means a moveable body panel that is not designed or intended as a passenger car entry point for passengers and that provides access from outside a passenger car to a trunk compartment. The term does not include a back door or the lid of a storage compartment located inside the passenger compartment of a passenger car.

S4. Requirements.

S4.1 Each passenger car with a trunk compartment must have an automatic or manual release mechanism inside the trunk compartment that unlatches the trunk lid. Each trunk release shall conform, at the manufacturer's option, to either S4.2(a) and S4.3, or S4.2(b) and S4.3. The manufacturer shall select the option by the time it certifies the vehicle and may not thereafter select a different option for the vehicle.

S4.2(a) Each manual release mechanism installed pursuant to S4.1 of this standard must include a feature, like lighting or phosphorescence, that allows the release mechanism to be easily seen inside the closed trunk compartment.

(b) Each automatic release mechanism installed pursuant to S4.1 of this section must unlatch the trunk lid within 5 minutes of when the trunk lid is closed with a person inside the trunk compartment.

S4.3(a) Except as provided in paragraph S4.3(b), actuation of the release mechanism required by S4.1 of this standard must completely release the trunk lid from all latching positions of the trunk lid latch.

(b)(1) For passenger cars with a front trunk compartment that has a front opening trunk lid required to have a secondary latching position or latch system, actuation of the release mechanism required by paragraph S4.1 of this standard must result in the following:

- (i) When the passenger car is stationary, the release mechanism must release the trunk lid from all latching positions or latch systems;
- (ii) When the passenger car is moving forward at a speed less than 5 km/h, the release mechanism must release the trunk lid from the primary latching position or latch system, and may release the trunk lid from all latching positions or latch systems;
- (iii) When the passenger car is moving forward at a speed of 5 km/h or greater, the release mechanism must release the trunk lid from the primary latching position or latch system, but must not release the trunk lid from the secondary latching position or latch system.

(2) The passenger cars described in paragraph S4.3(b)(1) are excluded from the requirements of this standard until September 1, 2002.

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§ 571.403 Standard No. 403; Platform lift systems for motor vehicles.

S1. *Scope.* This standard specifies requirements for platform lifts used to assist persons with limited mobility in entering or leaving a vehicle.