§ 581.6 Conditions.

The vehicle shall meet the requirements of §581.5 under the following conditions.

(a) General. (1) The vehicle is at unloaded vehicle weight.
(2) The front wheels are in the straight ahead position.
(3) Tires are inflated to the vehicle manufacturer’s recommended pressure for the specified loading condition.
(4) Brakes are disengaged and the transmission is in neutral.
(5) Trailer hitches, license plate brackets, and headlamp washers are removed from the vehicle. Running lights, fog lamps, and equipment mounted on the bumper face bar are removed from the vehicle if they are optional equipment.

(b) Pendulum test conditions. The following conditions apply to the pendulum test procedures of §581.7 (a) and (b).
(1) The test device consists of a block with one side contoured as specified in Figure 1 and Figure 2 with the impact ridge made of A1S1 4130 steel hardened to 34 Rockwell “C.” The impact ridge and the surfaces in Planes A and B of the test device are finished with a surface roughness of 32 as specified by SAE Recommended Practice J449A, June 1963. From the point of release of the device until the onset of rebound, the pendulum suspension system holds Plane A vertical, with the arc described by any point on the impact line lying in a vertical plane (for §581.7(a), longitudinal; for §581.7(b), at an angle of 30° to a vertical longitudinal plane) and having a constant radius of not less than 11 feet.
(2) With Plane A vertical, the impact line shown in Figures 1 and 2 is horizontal at the same height as the test device’s center of percussion.
(3) The effective impacting mass of the test device is equal to the mass of the tested vehicle.
(4) When impacted by the test device, the vehicle is at rest on a level rigid concrete surface.

(c) Barrier test condition. At the onset of a barrier impact, the vehicle’s engine is operating at idling speed in accordance with the manufacturer’s specifications. Vehicle systems that are not
§ 581.7 Test procedures.

(a) Longitudinal impact test procedures.

(1) Impact the vehicle’s front surface and its rear surface two times each with the impact line at any height from 16 to 20 inches, inclusive, in accordance with the following procedure.

(2) For impacts at a height of 20 inches, place the test device shown in Figure 1 so that Plane A is vertical and the impact line is horizontal at the specified height.

(3) For impacts at a height between 20 inches and 16 inches, place the test device shown in Figure 2 so that Plane A is vertical and the impact line is horizontal at the specified height.

(4) For each impact, position the test device so that the impact line is at least 2 inches apart in vertical direction from its position in any prior impact, unless the midpoint of the impact line with respect to the vehicle is to be more than 12 inches apart laterally from its position in any prior impact.

(5) For each impact, align the vehicle so that a vehicle corner touches, but does not move, the lateral center of the test device with Plane A of the test device forming an angle of 60 degrees with a vertical longitudinal plane.

(6) Move the test device away from the vehicle, then release it to impact the vehicle.

(7) Perform the impacts at intervals of not less than 30 minutes.

(b) Corner impact test procedure.

(1) Impact a front corner and a rear corner of the vehicle once each with the impact line at any height from 16 to 20 inches, inclusive, in accordance with the following procedure.

(2) For an impact at a height of 20 inches, place the test device shown in Figure 1 so that Plane A is vertical and the impact line is horizontal at the specified height.

(3) For an impact at a height between 16 inches and 20 inches, place the test device shown in Figure 2 so that Plane A is vertical and the impact line is horizontal at a height within the range.

(4) Align the vehicle so that a vehicle corner touches, but does not move, the lateral center of the test device with Plane A of the test device forming an angle of 60 degrees with a vertical longitudinal plane.

(5) Move the test device away from the vehicle, then release it to impact the vehicle.

(6) Perform the impact at intervals of not less than 30 minutes.