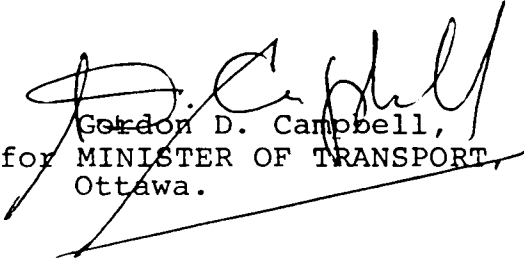


MOTOR VEHICLE SAFETY TEST METHODS
SECTION 220
SCHOOL BUS ROLLOVER PROTECTION

1. Introduction

Subsection 2 and 3 of this section make up test methods referred to in section 220 of Schedule D to the Motor Vehicle Safety Regulations, to demonstrate compliance with the requirements of section 220 of Schedule D.



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2. Conditions

- 2.1 The following conditions apply to the procedures detailed in section 220, of Schedule D to the Motor Vehicle Safety Regulations, in determining compliance with that section.
- 2.2 Temperature. The ambient temperature is any level between 0 C (32 F) and 32 C (90 F).
- 2.3 Windows and exits. Vehicle windows, doors and emergency exits are in the fully-closed position and latched but not locked.

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3. Test Procedures

3.1 Replace every flexible chassis-to-body mounts with rigid mounts.

3.1.1 Place the vehicle on a rigid horizontal surface so that the vehicle is entirely supported by means of the vehicle frame; or

3.1.2 For vehicles constructed without a frame, place the vehicle on its body sills.

3.2 Remove any components which extend upward from the roof.

3.3 To apply the required force, use a flat, rigid, rectangular force application plate that has the following dimensions measured with respect to the vehicle roof longitudinal and lateral centerlines:

a) for vehicles with GVWR of more than 4536 kg (10,000 pounds), 305 mm (12 inches) shorter than the vehicle roof and 914 mm (36 inches) wide; and

(b) for vehicles with GVWR of 4536 kg (10,000 pounds) or less, 127 mm (5 inches) longer and 127 mm (5 inches) wider than vehicle roof. For

the purpose of these measurements, the vehicle roof is that structure, seen in the top projected view, that coincides with the passenger and driver

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compartment of the vehicle.

3.4 Position the force application plate on the vehicle roof such that:

- (a) its rigid surface is perpendicular to a vertical longitudinal plane,
- (b) it contacts the roof at not less than two points,
- (c) its longitudinal centerline coincides with the top projected view of the vehicle longitudinal centreline, and
- (d) its front and rear edges are an equal distance from the front and rear edges at the centerline of the vehicle roof top projected view.

3.5 Apply an evenly-distributed vertical force in the downward direction to the force application plate such that,

- (a) the rate of travel of the force application plate does not exceed 12.7 mm/sec (0.5 inch per second), or
- (b) the rate of application of the force does not exceed 4000 N to 4450 N (900 to 1,000 pounds) per minute, until a force 2224 N (500 pounds) has been applied.

3.6 Apply additional vertical force in the downward direction to the force application plate using the same rate specified

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in paragraphs 3.5(a) or 3.5(b) until the force specified in Section 220 of Schedule D of the Motor Vehicle Safety Regulations has been achieved, and maintain this force until the procedures in paragraphs 3.7 and 3.8(a) have been completed.

3.7 Measure the maximum downward movement of any point on the force application plate that occurred during the application of the force in accordance with paragraph 3.6.

3.8 To test the compliance of the vehicle's exits to the opening requirements of Section 220 of Schedule D of the Motor Vehicle Safety Regulations:

(a) In the case of testing with the force applied, open the emergency exits as specified in section 220 while maintaining the force applied in accordance with paragraphs 3.5 and 3.6; and

(b) In the case of testing following the release of the force, release all downward force applied to the force application plate and open the emergency exits as specified in section 220.