

Australian/New Zealand Standard®

Restraint systems for motor vehicles— Performance tests

Method 1: Determination of webbing durability in adjustment duty

METHOD

1 SCOPE This Standard sets out a method for determining the durability of seat belt webbing, including that intended for use in a tilt-lock type adjustment device, under simulated adjustment operations. The components for testing are all those with which the webbing makes rubbing contact, except a sash guide used in conjunction with an emergency locking retractor.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS/NZS

1753 Webbing for restraining devices for occupants of motor vehicles

2596 Seat belt assemblies for motor vehicles

3 DEFINITIONS For the purpose of the Standard, the definitions given in AS/NZS 2596 apply.

4 PRINCIPLE Adjustment operations of a seat belt may result in abrasion between the webbing and other components. Abrasion may cause reduction of strength of the webbing, and the extent of abrasion will be influenced by the details of the components, the geometry of the system and the applied tensile force within the webbing. A test for adequate dry breaking tensile strength of the webbing is taken to indicate the suitability of the components with respect to abrasion caused by adjustment operations.

5 APPARATUS The following apparatus is required:

- (a) A test rig in which the component can be held and the webbing can be pulled through the component in the nominated directions and with the nominated forces. Where the component is a tilt-lock adjuster, the apparatus shall facilitate rotation of the adjuster from a fully locked angle to at least a fully unlocked angle at each reversal of motion of the webbing, the axis of rotation being parallel to the plane of the webbing and normal to the longitudinal axis of the webbing.
- (b) A mechanism to oscillate the webbing through the adjuster for a stroke length of not less than 150 mm and not more than 200 mm, and at the same time maintaining a cycle frequency of not less than 0.2 Hz while subjecting the stroked webbing to a tensile force of not less than 13 N at all times during the cycle.
- (c) A device to register the number of cycles completed, i.e. not less than 2500.

- (d) A device to apply a tensile force to the webbing of 14.7 kN or 75 percent of the dry tensile breaking strength, whichever is the greater.

NOTE: Special jaws are necessary to prevent excessive slip of the webbing and breakage of the webbing at the grips.

6 TEST SPECIMEN Test specimens comprising each component, and the webbing, shall be dry, unused, and not previously tested. Webbing specimens for determination of dry tensile breaking strength shall be from adjacent webbing.

7 PROCEDURE The procedure shall be as follows:

- (a) Establish the dry tensile breaking strength of the webbing, being that determined in accordance with AS/NZS 1753 by test of webbing that was adjacent to the test specimen.
- (b) Mount the component in the test rig in accordance with Figure 1, Figure 2 or Figure 3, as appropriate.
- (c) Apply a tensile force of not less than 13 N to the webbing.
- (d) Oscillate the webbing through the component for 2500 cycles. Where the component is an adjuster, the component shall be rotated between the two positions illustrated in Figure 1 at the completion of each stroke. The stroke shall be greater than 150 mm and not greater than 200 mm.
- (e) Remove the webbing and mount it in the tensile testing device in such a manner that the abraded section of the webbing is centred between the upper and lower jaws.
- (f) Subject the webbing to a tensile force (dry) of 14.7 kN, or 75 percent of the initial dry tensile breaking strength as determined in accordance with AS/NZS 1753, whichever is the greater.

8 REPORT The report shall include the following:

- (a) Sufficient description to identify the component and the webbing.
- (b) The initial dry tensile breaking strength of the webbing.
- (c) The force applied under Clause 7(f).
- (d) A statement that the dry tensile breaking strength of the webbing after 2500 cycles through the component was either less, or not less, than the greater of 14.7 kN and 75 percent of the initial dry tensile breaking strength.
- (e) The number of this Australian/New Zealand Standard, i.e. AS/NZS 4475.1.

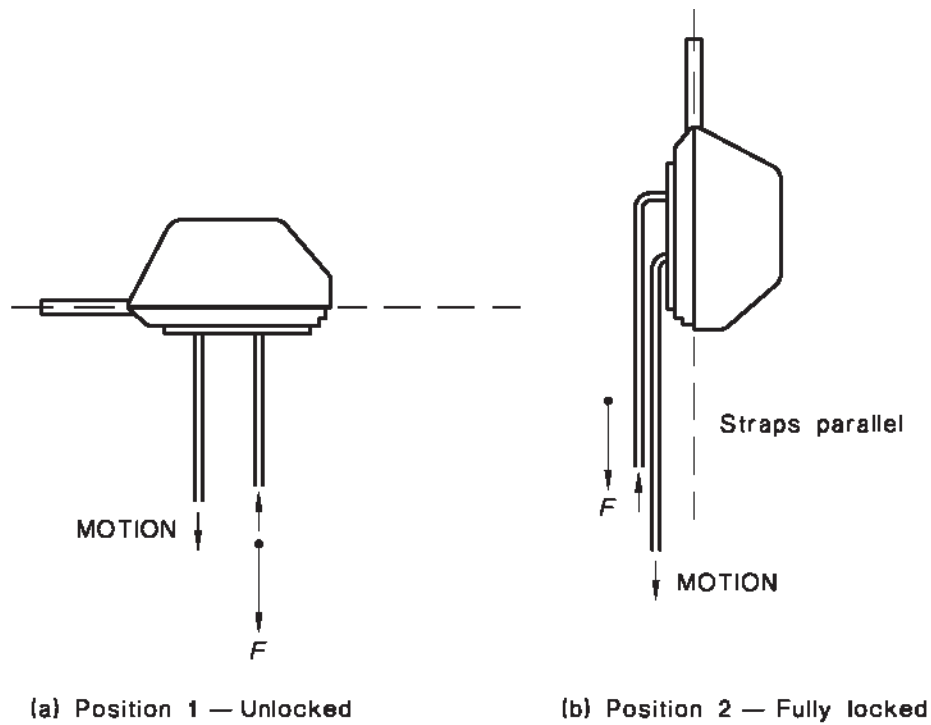


FIGURE 1 POSITION FOR TEST OF ADJUSTER

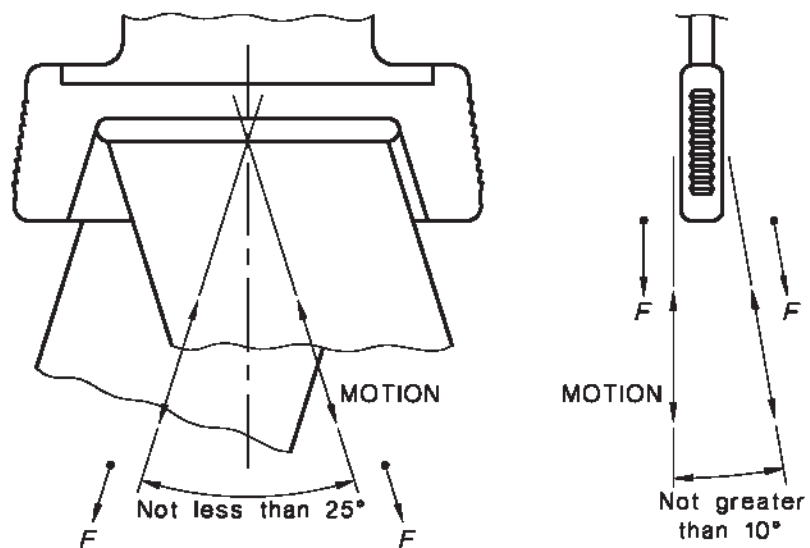


FIGURE 2 WEBBING ANGLES FOR TEST OF BUCKLE