

Australian/New Zealand Standard™

Methods of testing child restraints

Method 6: Determination of recline angle

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS-085, Child Restraints for Use in Motor Vehicles to supersede AS/NZS 3629.6:1998.

This method of measuring the recline angle of a Type A child restraint was developed in response to verification of reports that there were child restraints which were too upright to give sufficient support for young babies travelling in a vehicle. A revision was required to this test method to include the angle measurement for Type A child restraints that are suitable for low birth weight babies, which uses a smaller reference block. Testing with the cover fitted was added, as well as testing with any accessory or removable insert that may be used for newborn babies.

METHOD

1 SCOPE

This Standard sets out the method for determining the recline angle of the back rest of a Type A child restraint.

2 OBJECTIVE

The objective of this Standard is to provide a method of measuring the recline angle of a Type A child restraint to determine its suitability to support an infant in a normal driving situation.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

1754 Child restraint systems for use in motor vehicles

3629 Methods of testing child restraints

3629.1 Part 1: Dynamic testing

4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 1754 apply.

5 PRINCIPLE

The child restraint system is placed onto a horizontal surface and with the aid of a reference block, a measurement is recorded of the recline angle of the restraint. The test is then repeated with any accessory or removable item that may be used for newborn babies. For child restraints that are nominated as suitable for low birth weight babies, the test is conducted in both the low birth weight mode and the mode that is suitable for larger or normal weight babies.

6 APPARATUS

The following apparatus is required:

- (a) A flat reference surface, horizontal to within $\pm 0.5^\circ$, and with a surface area able to support the child restraint.
- (b) A steel rectangular reference block free of burrs and sharp edges, as shown in Figure 1, with mass as follows:
 - (i) Block A 4 ± 0.2 kg
 - (ii) Block B 2 ± 0.1 kg
- (c) A means of measuring angles with an accuracy of $\pm 0.5^\circ$.

7 TEST SAMPLES

The test samples shall be new, unused and not previously tested.

8 PROCEDURE

The procedure shall be as follows:

- (a) Measure the angle of the reference surface and record the measurement.
- (b) Place the child restraint with its cover fitted, onto the reference surface. The child restraint shall rest on the reference surface via the contact surface of the child restraint intended to contact the vehicle seat. To determine the contact surface of the restraint, install the child restraint onto the test seat shown in AS/NZS 3629.1, in accordance with the manufacturer's instructions, and mark the surface of the restraint contacting the test seat (see AS/NZS 3629.1:2013, Figure 1).
- (c) For all child restraints:
 - (i) Remove the cover and any removable item that may affect the backrest angle. If the child restraint has a base for fitting to the car then the base shall be used for this test.
 - (ii) Ensure that the child restraint is supported and remains stable on the reference surface.
 - (iii) Place Block A [6(b)(i)] into the child restraint with the locating pins in the appropriate shoulder slots which are not the highest (see Figure 2).
If the child restraint is fitted with a moving head rest then the moving headrest shall be adjusted according to the manufacturer's instructions.
 - (iv) Ensure that the harness assembly is not caught beneath the reference block.
 - (v) Measure the recline angle of the reference block.
 - (vi) Repeat Steps (ii) to (v) a further two times. Record the measurements taken and record the average of these measurements.

- (d) If the child restraint is fitted with removable items, in addition to Step (c), the following applies:
 - (i) Without the cover fitted, fit any removable item in accordance with the manufacturer's instructions.
 - (ii) Ensure that the child restraint is supported and remains stable on the reference surface.
 - (iii) Place Block A [6(b)(i)] into the child restraint with the locating pins in the appropriate shoulder slots which are not the highest (see Figure 2). If the child restraint is fitted with a moving headrest then the moving headrest shall be adjusted according to the manufacturer's instructions.
 - (iv) Ensure that the harness assembly is not caught beneath the reference block.
 - (v) Measure the recline angle of the reference block.
 - (vi) Repeat Steps (ii) to (v) a further two times. Record the measurements taken and record the average of these measurements.
- (e) For child restraints suitable for low birth weight babies, in addition to Step (c), the following applies:
 - (i) Fit the cover and any removable item specifically required for low birth weight occupant and/or adjust the child restraint so that it is suitable for a low birth weight occupant.
 - (ii) Ensure that the child restraint is supported and remains stable on the reference surface.
 - (iii) Place Block B [6(b)(ii)] into the child restraint with the locating pins in the lowest shoulder slots (see Figure 2).
 - (iv) Ensure that the harness assembly is not caught beneath the reference block.
 - (v) Measure the recline angle of the reference block.
 - (vi) Repeat Steps (ii) to (v) a further two times. Record the measurements taken and record the average of these measurements.

9 REPORT

The following shall be reported:

- (a) Sufficient description to identify the child restraint system.
- (b) The average recline angle for a Type A child restraint. Refer to Clause 8(c)(vi).
- (c) The average recline angle for a Type A child restraint fitted with removable items. Refer to Clause 8(d)(vi).
- (d) The average recline angle for Type A child restraint suitable for a low birth weight occupant. Refer to Clause 8(e)(vi).
- (e) A reference to this test method, i.e. AS/NZS 3629.6.