

Australian/New Zealand Standard™

AS/NZS 3629.5:2013

Methods of testing child restraints

Method 5: Determination of quick-release device and low attachment connector actuation force

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 3629.5:1995, *Methods of testing child restraints*, Method 5: *Determination of quick-release device actuation force*.

This Standard has been revised to introduce the test method for measuring the actuation force of low attachment connectors, as well as for quick-release devices that were previously covered. The revision has been made in response to the new requirements for lower attachment connectors in AS/NZS 1754, *Child restraint systems for use in motor vehicles*. These lower attachment connectors may be attached to flexible straps or rigidly mounted on a base.

METHOD

1 SCOPE

This Standard sets out the method for determining the force needed to be applied to the actuation surface of a quick-release device or a lower attachment connector for them to disengage. It also sets out the method for determining any reduction of the release force due to fatigue of any spring in the release mechanism of these devices.

The test method is intended to apply to lower attachment connectors that are attached to flexible straps as well as lower attachment connectors rigidly attached to a base structure that may require actuation by either pulling or pushing.

2 OBJECTIVE

The objective of the Standard is to provide manufacturers and testing authorities with a method for determining the force required to actuate the quick-release device and lower attachment connectors of a child restraint, both initially and after a simulated period of use.

3 APPLICATION

The test set out in this Standard applies where the quick-release devices and lower attachment connectors are operated by a push button.

4 REFERENCED DOCUMENTS

The following document is referred to in this Standard:

AS/NZS

1754 Child restraint systems for use in motor vehicles

5 DEFINITIONS

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

6 PRINCIPLE

The release actuation force, in a defined position and direction, is measured before and after 5000 defined movements of the release mechanism.

7 APPARATUS

The following apparatus is required:

- (a) A force measuring device and probe/hook, to measure the force required to operate an actuator to an accuracy of ± 1 N. The end of the probe shall have a 7 ± 0.5 mm radius hemispherical surface. A hook shall be such that the end of the hook can be applied to an actuator that is in line with the line of pull.
- (b) A fixture, comprising a flat, horizontal, rigid surface(s) upon which the quick-release device can be rigidly mounted.
- (c) A means of constraining the body of the quick-release device in all directions, so that there is no distortion of the body.
- (d) Machine(s) capable of operating the device for 5000 cycles at a frequency of 0.5 ± 0.25 Hz through a movement of not less than 90 percent of the designed actuator movement to cause a release. For a lower attachment connector a fixture with a 6 mm bar simulating an ISOFIX lower anchorage. For lower attachment connectors where the connectors are rigidly attached, a fixture similar to Figure 3.13 of AS/NZS 1754:2013 featuring a pair of ISOFIX low anchorages.
- (e) A device to register the number of cycles, i.e. not less than 5000 cycles.

8 TEST SPECIMEN

The test specimen shall be one unused and not previously tested device, including buckle tongue(s) where applicable.

9 PROCEDURE

The procedure shall be as follows:

- (a) Mount the device using the apparatus specified in Clauses 7(b) and 7(c).
- (b) In a single operation, and using the probe/hook specified in Clause 7(a), measure the force required for the device to release. If a push operation onto a button or surface is required, this force shall be applied to the geometric centre of the actuation surface and shall be measured normal to the surface, or, if there is no plane surface, parallel to and coincident with the line of action of the actuator.

If the force does not meet the requirements of the applicable clauses of AS/NZS 1754 then discontinue testing; otherwise continue the procedure.

For lower attachment connectors where the actuator releases two connectors, the force to release the first and second connector shall be measured.