

Australian/New Zealand Standard®

**Motor vehicles—Anchorages and
anchor points for securing internal
cargo**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME/48, Restraint Systems in Vehicles. It was approved on behalf of the Council of Standards Australia on 18 March 1996 and on behalf of the Council of Standards New Zealand on 28 November 1996. It was published on 5 January 1997.

The following interests are represented on Committee ME/48:

ACROD, Australia
Australian Automobile Association
Australian Chamber of Manufactures
Australian Faculty of Rehabilitation Medicine
Commercial Vehicle Industry Association of Australia
Department of Transport (Australia)
Federal Chamber of Automotive Industries, Australia
Federation of Automotive Products Manufacturers, Australia
Land Transport Safety Authority, New Zealand
New Zealand Ambulance Board
Roads and Traffic Authority of New South Wales

Additional interests participating in preparation of Standard:

Cargo barrier and restraint system manufacturers
Vehicle fleet operators

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME/48, Restraint Systems in Vehicles, to specify the minimum performance of anchorages for securing cargo inside a vehicle.

The objective of the Standard is to ensure that in vehicles where occupants share the interior space with cargo, passengers are protected from cargo moving under operational conditions by the use of appropriate restraint assemblies.

Of the interests listed on the inside front cover, the Federal Chamber of Automotive Industries (FCAI) did not support the publication of this Standard. The FCAI felt that the Scope of the Standard was not applicable to original equipment anchorages.

The basis for the performance criteria set by this Standard is the restraint of 125 kg of cargo as a single item during frontal impact under a deceleration equivalent to 20g for 30 ms. This restraining force is to be supported by at least two floor-mounted anchorages, although deceleration forces will not be evenly distributed over all anchorages. It is assumed that a single anchorage will be suitable for restraining 75 kg mass using inclined lashings. This force equates to 26 kN at a 35° lashing angle as described in Appendix A. Additional wall-mounted anchorages capable of supporting 10 kN (see Appendix A) may be supplied for use as supplementary restraints only.

This Standard is applicable to anchorages for securing cargo and it is recommended that anchorages be used in conjunction with a cargo barrier in accordance with AS/NZS 4034:1992, *Motor vehicles—Cargo barriers for occupant protection*.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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1 SCOPE This Standard specifies requirements for anchorages for use in securing cargo in vehicles where the occupants share the same interior space as the cargo. It is intended to provide the means by which, using appropriate restraint assemblies, cargo can be restrained so as to reduce injuries to occupants caused by cargo shifting. Provision is made for the restraint of single items of cargo up to 125 kg, utilizing the capacity of at least two floor-mounted anchorages.

Design and performance criteria are covered, and installation and usage instructions are to be provided for anchorages if fitted by the vehicle manufacturer or intended for retrofitting into a vehicle.

NOTE: Appendix A states the rationale for specifying the strength of anchorage points.

Appendix B and Appendix C set out the test procedures for determining the strength of floor-mounted and wall-mounted anchorages respectively.

2 DEFINITIONS For the purpose of this Standard, the definitions below apply.

2.1 Anchorage—a device designed to transfer loads from a restraint assembly to the vehicle. It includes bolts or screws and other hardware for the attachment of the anchorage and it may be fitted as original vehicle equipment or supplied as part of the anchorage.

2.2 Anchor point—that part of a vehicle at which the restraining forces are transferred from the anchorage to the vehicle.

2.3 Restraint assembly—a tension device for securing cargo to anchorages in a motor vehicle.

2.4 Shall—indicates that a statement is mandatory.

2.5 Should—indicates a recommendation.

3 ANCHORAGE CONFIGURATION Typical configurations of anchorages include single or double units installed through-floor or above-floor, and track type units that permit multiple attachment positions to suit the cargo dimensions. These types are illustrated in Figures 1, 2 and 3, respectively.

In addition, wall-mounted anchorages may be fitted and used only as a supplementary restraint system.

4 DESIGN AND CONSTRUCTION

4.1 General Anchorages shall be corrosion-resistant and without sharp edges.

Parts of the anchorage subject to frequent or occasional separation from the remainder of its assembly shall not unintentionally separate from other components or the vehicle, e.g. backing plates shall not fall away under normal use or during intended separation of components in use.