

Australian/New Zealand Standard™

**Heavy road vehicles—Mechanical
coupling between articulated vehicle
combinations**

**Part 3: Kingpins and associated
equipment**



AS/NZS 4968.3:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-053, Heavy Road Vehicles. It was approved on behalf of the Council of Standards Australia on 3 March 2011 and on behalf of the Council of Standards New Zealand on 5 April 2011.
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The following are represented on Committee ME-053:

Austrroads
Australian Road Transport Suppliers Association
Australian Trucking Association
Commonwealth Department of Transport and Regional Services
Department of Transport, WA
New Zealand Heavy Haulage Association
New Zealand Transport Agency
New Zealand Truck and Trailers Manufacturers Federation
Road Transport Forum, New Zealand
The Institute of Road Transport Engineers of New Zealand
Truck Industry Council

Additional Interests:

Mechanical coupling manufacturers

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Part 3: Kingpins and associated equipment

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-053, Heavy Road Vehicles, to supersede AS/NZS 4968.3:2003. This revision has been prepared in order to broaden the application of this Standard from semi-trailers to include lighter installations such as inverted installations where the kingpin is used on the tow vehicle.

The objectives of this Standard are to provide performance requirements and recommendations for the installation of kingpins and associated equipment, to assist in the development of standard practice in this field, to provide the transport industry with a standardized kingpin to ensure full interchangeability when coupling vehicle combinations, and provide a procedure for rating and selecting a kingpin for safe usage for specific vehicle combinations.

This Standard is Part 3 of AS/NZS 4968, *Heavy road vehicles—Mechanical coupling between articulated vehicle combinations*, which is published in three parts as follows:

- Part 1: Design criteria and selection requirements for fifth wheel, kingpin and associated equipment
- Part 2: Testing and installation of fifth wheel and associated equipment
- Part 3: Kingpins and associated equipment (this Standard)

The Standard correlates with the dimensional requirements in International Standards for 50 mm kingpins (ISO 337:1981, *Road vehicles—50 semi-trailer fifth wheel coupling pin—Basic and mounting/interchangeability dimensions*), 90 mm kingpins (ISO 4086:2001, *Road vehicles—90 semi-trailer fifth wheel kingpin—Interchangeability*), and the rating and selecting of kingpins is based on the ‘D-value’ method used in the United Nations ECE Regulation 55.

In this Standard, 75 mm kingpins have been included due to their widespread use in certain parts of Australia and recent developments in standardizing their dimensions. These kingpins are not contained in ISO Standards or ECE Regulations.

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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Australian/New Zealand Standard**Heavy road vehicles—Mechanical coupling between articulated vehicle combinations****Part 3: Kingpins and associated equipment****1 SCOPE**

This Standard specifies requirements for 50 mm, 75 mm and 90 mm kingpins for use in articulated vehicles, B-doubles and road trains, in normal use on both sealed and unsealed roads.

Requirements covering mechanical properties, dimensional standards for interchangeability and dynamic testing are provided in Appendix A.

The determination of dynamic strength using finite element analysis is given in Appendix B.

NOTES:

- 1 Recommendations and requirements for fifth wheel assemblies on prime movers are given in AS/NZS 4968.2.
- 2 Guidelines for the attachment of kingpin to skid plate are given in Appendix C.
- 3 The method of calculation of D-values is given in AS/NZS 4968.1.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

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| 1110 | ISO metric hexagon bolts and screws—Product grades A and B |
| 1110.1 | Part 1: Bolts |
| 1391 | Metallic materials—Tensile testing at ambient temperature |
| 1815 | Metallic materials—Rockwell hardness test (series) |
| 2174 | Heavy road vehicles—Mechanical coupling between prime movers and semi-trailers—Interchangeability requirements |
| 2174.1 | Part 1: Non-dedicated vehicle combinations |

AS/NZS

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|--------|--|
| 1594 | Hot-rolled steel flat products |
| 4968 | Heavy road vehicles—Mechanical coupling between articulated vehicle combinations |
| 4968.1 | Part 1: Design criteria and selection requirements for fifth wheel, kingpin and associated equipment |
| 4968.2 | Part 2: Testing and installation of fifth wheel and associated equipment |

ISO

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| 4287 | Geometrical Product Specifications (GPS)—Surface texture: Profile method—Terms, definitions and surface texture parameters |
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SAE

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| J700 | Upper Coupler Kingpin—Commercial Trailers and Semi-trailers |
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