AS 4084—2012

Australian Standard®

Steel storage racking

This Australian Standard® was prepared by Committee BD-062, Steel Storage Racking. It was approved on behalf of the Council of Standards Australia on 30 January 2012.
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The following are represented on Committee BD-062:

- Australian Industry Group
- Australian Steel Institute
- Consult Australia
- Engineers Australia
- Griffith University
- The University of Sydney
- WorkSafe Victoria

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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PREFACE

This Standard was prepared by the Standards Australia Committee BD-062, Steel Storage Racking, to supersede AS 4084—1993, *Steel storage racking*.

The objective of this Standard is to provide designers of steel storage racking with specifications for hot-rolled and cold-formed steel structural members used for action carrying purposes.

The design provisions of the Standard are based on the limit states method and are intended to supplement AS 4100 and AS/NZS 4600.

This edition incorporates the following major changes to the previous edition:

(a) The Standard is in limit states format.

(b) The Standard provides for internal actions to be determined by linear, geometric nonlinear, and material and geometric nonlinear analyses.

(c) The Standard contains a comprehensive range of tests for determining the stiffness and strength of rack components and subassemblies.

Reference has been made to the European Racking Code (EN 15512) and the American Rack Manufacturers Institute Specification (RMI).

The term ‘normative’ is used in this Standard to define the application of the appendix to which it applies. A normative appendix is an integral part of a Standard.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard sets out minimum requirements for the design, fabrication and erection tolerances, test methods, operation and maintenance of steel storage racking in the limit states method.

This Standard applies to adjustable static pallet racking made of cold-formed or hot-rolled steel structural members. It covers racking installed within a building, outside a building, and racking that forms part of the frame of the building.

The Standard does not cover drive-in and drive-through racking, cantilever racking, mobile racking or racking made of materials other than steel.

NOTE: Guidance for the design of drive-in and drive-through racking is available in FEM 10.2.07, and in FEM 10.2.09 for cantilever racking.

1.2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents for informative purposes are listed in the Bibliography.

AS
1170 Structural design actions
1170.4 Part 4: Earthquake actions in Australia

1391 Metallic materials—Tensile testing at ambient temperature

1657 Fixed platforms, walkways, stairways and ladders—Design, construction and installation

4100 Steel structures

AS/NZS
1170 Structural design actions
1170.0 Part 0: General principles
1170.1 Part 1: Permanent, imposed and other actions
1170.2 Part 2: Wind actions

4600 Cold-formed steel structures

FEM The European Federation of Materials Handling
9.831 Calculation Principles for Storage and Retrieval Machines. Tolerances, Deformations and Clearances in the High-bay Warehouse

9.832 Basis of Calculations for Storage and Retrieval Machines, Tolerances, Deformations and Clearances in Automatic Small Parts Warehouses (not Silo Design)