Australian Standard™

Railway track material

Part 1: Steel rails

Standards Australia

This Australian Standard was prepared by Committee CE-002, Railway Track Materials. It was approved on behalf of the Council of Standards Australia on 14 June 2002 and published on 1 August 2002.

The following are represented on Committee CE-002:

Australasian Railway Association

Australian Chamber of Commerce and Industry

Australian Industry Group

Bureau of Steel Manufactures of Australia

Rail Track Association Australia

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Part 1: Steel rails

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PREFACE

This Standard was prepared by the Standards Australia Committee CE-002, Railway Track Materials, to supersede AS 1085.1—2000, *Railway permanent way material*, Part 1: *Steel rails*.

The objective of this Standard is to provide purchasers and suppliers, including owners, operators, designers and manufacturers of railway rail with requirements for as-rolled and hardened steel rails, made from continuously cast blooms for railway purposes.

This Standard is Part 1 of the AS 1085 series (*Railway track material*) comprised of the following parts:

Part 1: Steel rails

Part 2: Fishplates

Part 3: Sleeper plates

Part 4: Fishbolts and nuts

Part 7: Spring washers

Part 8: Dogspikes

Part 10: Rail anchors

Part 12: Insulated joint assemblies

Part 13: Spring fastening spikes for sleeper plates

Part 14: Prestressed concrete sleepers

Part 15: Aluminothermic rail welding

Part 17: Steel sleepers

New parts also under development are Part 18: *Screw spikes and threaded inserts*, Part 19: *Resilient fastening assemblies* and Part 20: *Welding of steel rail*.

Of interest to users of this series are the following:

AS 3818.2, *Timber—Heavy structural products—Visually graded*, Part 2: *Railway track timbers*

AS 2758.7, *Aggregates and rock for engineering purposes*, Part 7: *Railway ballast*

Changes to the previous edition are as follows:

(a) Change of title of the AS 1085 series (previously *Railway permanent way material*).

(b) Referenced documents list has been revised.

(c) Reference to the surface hardness test in Clause 9.1.1.

(d) Amendments to dimensions in Figures D1 and D4.

(e) Changes to the tolerances for 68 kg rail.

(f) Column 6 of Table E3 noted as minimum values.

(g) The most recent version of the informative Appendix ‘Means of demonstrating compliance with this Standard’ has been included.

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.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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1 SCOPE

This Standard specifies requirements for as-rolled and hardened steel rails made from continuously cast blooms and profiles for asymmetric switch rails and elevated guard rails for railway purposes.

NOTES:

1 Guidelines for purchasers are given in Appendix A.

2 Guidance on the means for demonstrating compliance with this Standard is given in Appendix B.

3 Information on residual stresses in rail is given in Appendix C.

2 PURPOSE AND CONTEXT OF USE

2.1 Function

Steel rail forms the direct longitudinal support member of the railway permanent way and provides the guiding and running surface for rolling stock. Rail may also be used to conduct current for signalling and traction purposes.

2.2 Action

Steel rail is subjected to—

(a) loads imposed by the passage of rolling stock and during maintenance;

(b) the effects of temperature in welding systems, joints and welding; and

(c) fatigue, wear, damage and corrosion.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1003 Engineers' straightedges (metric units)
1100 Technical drawing
1100.201 Part 201: Mechanical drawing
1199 Sampling procedures and tables for inspection by attributes
1391 Methods for tensile testing of metals
1399 Guide to AS 1199—Sampling procedures and tables for inspection by attributes
1816 Metallic materials—Brinell hardness test
1817 Metallic materials—Vickers hardness test
1929 Non-destructive testing—Glossary of terms

AS
2205 Methods of destructive testing of welds in metal
2205.5.1 Part 5.1: Macro metallographic test for cross-section examination
2706 Numerical values—Rounding and interpretation of limiting values