Superseded by AS 1594-1992.

Amendment 1-October 1990.

AS 1594—1989

Australian Standard®

Hot-rolled steel flat products

D

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee MT/1, Iron and Steel. It was approved on behalf of the Council of Standards Australia on 22 December 1988 and published on 7 July 1989.

The following interests are represented on Committee MT/1:

Australian Foundry Institute

Australian Institute of Steel Construction

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Department of Defence

Department of Labour, Vic.

Institute of Metals and Materials, Australasia

Institute of Steel Services Centres of Australia

Metal Trades Industry Association of Australia

Railways of Australia Committee

Society of Automotive Engineers, Australasia

This Standard was issued in draft form for comment as DR 87231.

STANDARDS AUSTRALIA

Amendment No 1
to
AS 1594—1989
Hot-rolled steel flat products

REVISED TEXT

SUMMARY: This Amendment applies to Clause 1.3, and Tables 2.1, 2.3, 3.1 and 3.2.

Published on 15 October 1990.

AS 1594—1989

Australian Standard®

Hot-rolled steel flat products

First published as part of AS G2—1945.
Revised and redesignated AS G16—1967.
AS G33 first published 1971.
AS G16—1967 and AS G33—1971 revised, amalgamated and redesignated AS 1594—1974.
Second edition 1981.
Third edition 1989.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY NSW
ISBN 0 7262 5508 4

PREFACE

This Standard was prepared under the direction of Standards Australia's Committee on Iron and Steel, to supersede AS 1594—1981, *Hot-rolled low carbon steel plate, sheet and strip.*

This edition incorporates changes which have occurred in the flat products area of the Australian steel industry, in particular, the introduction of micro-alloyed steels. In addition, it was decided that only AS 1594 should include continuous mill product, thus appropriate grades from AS 1204, *Structural steels—Ordinary weldable grades*, have been incorporated in this revision. Excluded from this Standard are steel plate for boilers and pressure vessels, steel plate for oil storage tank construction, steel slabs and structural steel plate and floorplate rolled on a reversing mill; these products are dealt with in other Standards. Although slab-cast grades are predominant in the marketplace, requirements for capped, rimmed, and semi-killed grades have been included.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard
Hot-rolled steel flat products

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies requirements for hot-rolled steel plate, floorplate, sheet and strip, rolled on a continuous mill, in thicknesses up to 13 mm and widths up to 2000 mm, and includes slit material, provided that the parent material has an as-rolled width of not less than 600 mm.

The requirements specified are as follows:

(a) For structural grades, formable grades, extra formability grades, and weather-resistant grades—both chemical composition and mechanical property.

(b) For analysis grades—chemical composition only.

(c) For floorplate—mechanical properties only.

NOTES:

1. This Standard does not cover the following:
   (a) steel plate for boilers and pressure vessels (see AS 1548);
   (b) steel plate for oil storage tank construction (see AS 2624);
   (c) structural steel plate and floorplate rolled on a reversing mill (see AS 1204);
   (d) steel slabs (see AS 1204).
2. Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in the purchasing guidelines set out in Appendix A.
3. Information on the determination of the compliance of a batch is given in Appendix B.

1.2 REFERENCED DOCUMENTS. The following Standards are referred to in this Standard:

AS	
1050	Methods for the analysis of iron and steel
1199	Sampling procedures and tables for inspection by attributes
1204	Structural steels—Ordinary weldable grades
1213	Iron and steel—Methods of sampling
1365	Tolerances for flat-rolled steel products
1391	Methods for the tensile testing of metals
1399	Guide to AS 1199, Sampling procedures and tables for inspection by attributes
1548	Steel plates for boilers and pressure vessels
1821–1823	Suppliers Quality Systems
2000	Guide to AS 1821–1823—Suppliers Quality Systems
2338	Preferred dimensions of wrought metal products
2505	Methods for bend and related testing of metals
2505.1	Part 1: Sheet, strip and plate
2624	Steel plate and strip for the construction of welded steel tanks for oil storage
2706	Numerical values—Rounding and interpretation of limiting values
3900	Quality systems—Guide to selection and use
3901	Quality systems for design/development, production, installation and servicing
3902	Quality systems for production and installation
3903	Quality systems for final inspection and test
3904	Quality systems—Guide to quality management and quality system elements
K1	Methods for the sampling and analysis of iron and steel

1.3 DESIGNATION.

1.3.1 General. The steel designation shall be as given in Tables 2.1 to 2.3, and shall include the number of this Australian Standard, i.e. AS 1594, together with a solidus followed by additional characters in accordance with Clauses 1.3.2 to 1.3.6, as appropriate.

1.3.2 Analysis grades. The designation for analysis grades shall consist of a five-digit alphanumeric system in accordance with the following:

(a) First character, a letter indicating deoxidation practice, as follows:

U = Unspecified deoxidation.
A = Aluminium killed.
K = Silicon killed, with or without aluminium additions.
R = Rimmed.

(b) A four-digit series designation, as follows, wherein the first two digits of the number indicate the type of steel and the last two digits indicate the approximate mean of the specified carbon range:

10XX ..... Plain carbon steels.
15XX ..... Carbon–manganese steels.

NOTE: The double X has no significance other than to indicate the position for digits to be added.

1.3.3 Modification symbols for analysis grades. Modification symbols may be added to the grade designation given in Clause 1.3.2, as follows:

(a) The prefix letter X shall be used to indicate a major deviation in chemical composition of any grade from the corresponding AISI–SAE grade.

(b) The letter B shall be used to indicate boron-treated steel, and is placed between the second and third character of the four-digit series designation.

Examples of designation: AS 1594/A1006, AS 1594/XK1016, AS 1594/K10B55.

1.3.4 Extra formability grades. The designation for extra formability grades shall consist of a five-digit alphanumeric system in accordance with the following:

(a) First two characters XF to indicate extra formability.

(b) Third to fifth characters indicating the nominal minimum yield strength in megapascals.

Examples of designation: AS 1594/XF300, AS 1594/XF500