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COLD-ROLLED UNALLOYED LOW CARBON STEEL SHEET AND STRIP

[Title allocated by Defence Cataloguing Authority:
METAL PLATE, SHEET AND STRIP (Cold-rolled, Unalloyed Low
Carbon Steel).... NSC 9515]



STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Electrical and Electronic Manufacturers Association
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Industry and Commerce
Institute of Steel Service Centres of Australia
Metal Trades Industry Association of Australia
Society of Automotive Engineers—Australasia

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STANDARDS ASSOCIATION OF AUSTRALIA

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Amendment No 1

to

AS 1595—1981

**COLD-ROLLED UNALLOYED LOW CARBON STEEL SHEET AND
STRIP**

REVISED TEXT

SUMMARY: This amendment applies to Clause 3.1.

Published on 6 December 1982.

AUSTRALIAN STANDARD

**COLD-ROLLED UNALLOYED
LOW CARBON STEEL SHEET
AND STRIP**

AS 1595—1981

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PREFACE

This standard was prepared under the direction of the Association's Committee on Iron and Steel by its subcommittee on uncoated unalloyed steel sheet and strip, to supersede both AS 1595, Part 1—1974 and AS 1595, Part 2—1974. It specifies requirements for cold-rolled unalloyed steel sheet and strip produced on a continuous mill and supplied as both coil and cut lengths to hardness or formability requirements.

In the preparation of this standard, the committee took cognizance of the following standard and draft proposals under the jurisdiction of the International Organization for Standardization, and alignment with these was carried out as far as practicable:

- ISO 3574 Cold-reduced Carbon Steel Sheet of Commercial and Drawing Qualities
- DP 5954 Cold-reduced Carbon Steel Sheet to Hardness Requirements
- DP 6509 Cold-reduced Carbon Steel Strip

Appendix A presents purchasing guidelines, including contractual requirements previously included in the body of AS 1595, and directs attention to matters requiring consideration at the time of enquiry and/or order. The intention is to avoid mis-interpretation or other problems and to ensure a clear understanding of product requirements by both purchaser and supplier.

This standard requires reference to the following Australian standards:

- AS 1050 Methods for the Analysis of Iron and Steel
- AS 1213 Methods for the Sampling of Iron, Steel, Permanent Magnet Alloys and Ferro-alloys
- AS 1365 Tolerances for Hot-rolled and Cold-rolled Unalloyed Low Carbon Steels (Coils and Cut Lengths)
- AS 1391 Methods for the Tensile Testing of Metals
- AS 1815 Method for Rockwell Hardness Test
Part 1—Testing of Metals
- AS 2025 Method for Rockwell Superficial Hardness Test
Part 1—Testing of Metals, N and T Scales
- AS 2338 Preferred Dimensions of Wrought Metal Products
- AS 2403 Method for the Measurement of the Plastic Strain Ratio 'r' of Sheet and Strip Metals
- AS 2505 Methods for Bend and Related Testing of Metals
Part 1—Sheet, Strip and Plate
- AS K1 Methods for the Sampling and Analysis of Iron and Steel

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

COLD-ROLLED UNALLOYED LOW CARBON STEEL SHEET AND STRIP

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for cold-rolled, unalloyed low carbon steel sheet and strip, supplied as both coil and cut lengths.

Provision is made for four temper-rolled grades produced to hardness requirements and four grades based on formability. In addition, three surface finishes are specified, and provision is also made for levels of surface quality.

NOTE: Guidelines to purchasers on requirements that must be specified by the purchaser and those that must be agreed at the time of enquiry and/or order are given in Appendix A.

1.2 DESIGNATION.

1.2.1 General. The steel designation, as given in Tables 2.1 and 3.1, shall include the number of this Australian standard, i.e. AS 1595, together with a set of characters in accordance with the following:

1st character—the letter 'C' to represent cold-rolled steel

2nd character—the letters U, R or A, as follows, to indicate the degree of deoxidation:

- U = unspecified deoxidation (see Clause 1.3.3)
- R = rimming
- A = aluminium killed.

3rd and subsequent characters—alphanumeric in accordance with Clauses 1.2.2 and 1.2.3.

Suffix letters—to include surface finish and surface quality in accordance with Clauses 1.2.4 and 1.2.5.

1.2.2 Hardness Grades.

1.2.2.1 Third and fourth characters. The third and fourth characters shall be a two-digit number representing the minimum Rockwell hardness (Scale B) as given in Table 3.1.

1.2.2.2 Fifth character. For temper rolled grades, the fifth character shall be the letter 'T'.

1.2.3 Formability Grades.

1.2.3.1 Third character. The third character shall consist of the number 1, 2, 3 or 4 to indicate formability, as follows:

- 1 = commercial forming
- 2 = commercial drawing
- 3 = deep drawing
- 4 = extra deep drawing

1.2.3.2 Fourth character. The fourth character shall be used in accordance with the following:

- S = skin-passed
- A = annealed, not skin-passed

1.2.3.3 Fifth character. Where non-ageing (stabilized) grades are required, the fifth character shall be the letter 'N'.

1.2.4 Surface Finish. Surface finish shall be designated as follows and joined to the steel designation by a dash:

- P = plating
- L = lustre
- B = bright
- M = matt
- U = unspecified

1.2.5 Surface Quality. Surface quality shall be designated as follows immediately after surface finish:

- G = general purpose
- E = exposed
- F = fully inspected

Examples of complete designation:

Hardness grades: AS 1595/CU70T-MG, AS 1595/CA50T-LE.
Formability grades: AS 1595/CU1S-UG, AS 1595/CR2A-MG,
AS 1595/CA4SN-ME.

1.3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

1.3.1 Cold-rolled sheet—a rolled product of any width and thickness, supplied in cut lengths. Edges available are mill, sheared or slit.

1.3.2 Cold-rolled strip—a rolled product of any width and thickness, supplied in coil form. Edges available are mill or slit.

1.3.3 Unspecified deoxidation—denoted by the letter 'U' and indicates that steel may be supplied at the manufacturer's option in respect of deoxidation.

1.3.4 Temper rolling—the practice of producing a property range by controlled cold rolling.

1.3.5 Skin passing—a light cold rolling practice for the suppression of stretcher strain, as well as controlling the flatness and surface texture of the product.

1.3.6 Ageing—a term applied to changes in physical and mechanical properties of low carbon steel that occur with the passage of time, and which adversely affect formability. Ageing accelerates as the temperature is raised.

Grades indicated by the following suffix letters allow strain-ageing effects to be modified:

A = annealed, not skin-passed. (This grade will not significantly strain-age but may exhibit stretcher strain markings in pressing.)

It should also be noted that ageing could occur if delays occur during inter-stage press operations.)

N = non-ageing (stabilized) steels in which the yield point will not reappear in storage, and therefore will not exhibit stretcher strain markings in pressing.