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Australian Standard 1294—1980

COATED AND ETCHED STEEL MEASURING TAPES

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

THE FOLLOWING SCIENTIFIC, INDUSTRIAL, PROFESSIONAL AND GOVERNMENTAL organizations were officially represented on the committee entrusted with the preparation of this standard:

Association of Consulting Engineers, Australia

Australian Institute of Steel Construction

CSIRO National Measurement Laboratory

Department of Housing and Construction

Department of Lands, N.S.W.

Department of Public Works, N.S.W.

Master Builders Federation of Australia Incorporated

Manufacturers and importers

National Association of Australian State Road Authorities

Royal Australian Institute of Architects

The Institution of Surveyors, Australia

University of Sydney

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AUSTRALIAN STANDARD

COATED AND ETCHED STEEL MEASURING TAPES

AS 1294—1980

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PREFACE

This standard was prepared by the Association's Committee on Linear Measuring Instruments. It supersedes the first (1972) edition which was issued in one volume with other standards in the series under the designation AS 1290 to 1298, Linear Measuring Instruments for Use in Construction. Except for AS 1296 which is now withdrawn each of these standards is the subject of a new edition, issued separately.

The method of graduation is consistent with decisions on units, their multiples and submultiples made by the Metric Conversion Board and the Standards Association of Australia Metric Standards Advisory Committee.

In the preparation of this standard reference was made to a number of sources including—

BS 3693	Recommendations for the Design of Scales and Indexes Part 1—Instruments of Bold Presentation and for Rapid Reading
BS 4484	Measuring Instruments for Constructional Works Part 1—Metric Graduation and Figuring of Instruments for Linear Measurement

and acknowledgment is made of the assistance obtained therefrom.

In this edition the following clauses and figure have been amended:

1 Scope
3.1 Ribbon
4.1 Form of Graduation
5 Accuracy
6 Marking
Fig. 1

This standard requires reference to AS 1920, General Requirements for Linear Measuring Instruments Used in Construction.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
COATED AND ETCHED STEEL MEASURING TAPES

1 SCOPE. This standard specifies the requirements for coated and etched steel measuring tapes up to 30 m in length for use in construction.

2 GENERAL REQUIREMENTS. For the purpose of this standard the definitions and requirements for presentation, graduation, figuring and other markings set out in AS 1290 shall apply.

3 COMPONENTS.

3.1 Ribbon. The ribbon shall comply with the following requirements:

(a) The ribbon shall be manufactured in one continuous length and shall be made from carbon steel or stainless steel, having a tensile strength of not less than 1450 MPa.

(b) The width of ribbon shall be between 9 mm and 16 mm with a tolerance of ± 0.5 mm.

(c) The ribbon shall be manufactured from material having a tolerance on thickness of ± 0.03 mm and the thickness of the ribbon, after processing, shall be not less than 0.15 mm nor more than 0.28 mm at any point.

(d) The maximum permissible error in edge straightness shall conform to the values shown in Table 1.

TABLE 1
EDGE STRAIGHTNESS

Test length m	Maximum permissible error in edge straightness mm
10	6
20	9
30	12

(e) The outer end of the ribbon shall be fitted with a metal ring, connected to the ribbon by a metal strip of the same width as the ribbon. The ring and connection shall withstand a direct static force of 200 N without damage or deformation.

3.2 Winding Drum. The winding drum shall rotate freely but be provided with a frictional device suitable for preventing spin.

The ribbon shall be connected to the winding drum directly or by means of a connecting strip of suitable material and length which shall permit the ribbon to be disconnected from outside the case.

The connection between the winding drum and the ribbon shall withstand a direct static force of 200 N.

The diameter of the winding drum shall be not less than 28 mm.

3.3 Winding Handle. The handle shall be hinged to the winding drum to fold into or against the case, reel or winding drum, and have a winding radius of not less than 30 mm. The winder knob shall be non-detachable, and shall rotate freely on a spindle.

3.4 Case or Reel. All exposed steel parts of the case or reel shall be processed to resist corrosion. The opening in the case for the ribbon shall be provided with rollers or slides forming a bearing. There shall be adequate clearance between the internal peripheral face of the case and the fully wound in tape.

4 GRADUATION AND FIGURING.

4.1 Form of Graduation. Graduation of the ribbon shall comply with the following requirements:

(a) The outside surface of the outer extremity of the ring at the end of the ribbon shall normally constitute the zero of the instrument.

NOTE: Instruments in which the zero is the inner surface of the ring or hook end, or a graduation mark on the ribbon, may be deemed to be acceptable.

(b) The tape shall be graduated throughout, along one edge of the upper face only, in the following manner:

(i) with the major graduation marks on 1-m intervals (first order of magnitude);

(ii) with intermediate graduation marks at 100-mm, 10-mm and 5-mm intervals (first, second and third orders of magnitude respectively);

(iii) with minor graduation marks at 1-mm intervals (fourth order of magnitude).

(c) The choice of edge used for graduation is optional.

Tapes graduated in a manner similar to that shown in Fig. 1(a), (b) or (c) shall be deemed to satisfy the above requirements.

4.2 Graduation Marks. The graduation marks shall be clear lines of uniform thickness, normal to the edges of the ribbon.

The width of the graduation marks shall be not less than 0.2 mm nor more than 0.3 mm.

4.3 Form of Figuring. Tapes graduated in a manner similar to those shown in Fig. 1(a), (b) or (c) shall be deemed to satisfy the requirements of this standard.

5 ACCURACY. With the tape supported on a horizontal surface, at a tension of 50 N and at a temperature of 20°C, the magnitude of the error in the distance from the zero of the instrument to the centreline of any graduation mark throughout the length