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AS 1298—1980
UDC 531.716.3

# Australian Standard 1298—1980

# LEVELLING STAFFS

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

# LEVELLING STAFFS

## AS 1298—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 Except for AS 1296 which is now withdrawn each of these standards is the subject of a new edition, issued separately.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 Clause 7, Marking has been amended.

This standard requires reference to AS 1290, General Measurements for Linear Measuring Instruments Used in Construction.

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STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard for LEVELLING STAFFS

**1 SCOPE.** This standard specifies the requirements for figuring on levelling staffs.

**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 WIDTH OF READING FACE.** The reading face should not be less than 50 mm in width.

**4 FORM OF GRADUATION.** The form of graduation of levelling staffs shall comply with the following requirements:

(a) Staffs shall be graduated in 10-mm intervals.

(b) All graduations shall have a vertical dimension of 10 mm and the space between graduation marks shall also be 10 mm. No graduation mark shall be less than 10 mm in its horizontal direction.

(c) The outside edge of the top three graduation marks in each 100 mm shall be connected by a vertical band 5 mm wide forming a natural 'E' on the left-hand face, the upper and lower edges of which locate the 100-mm and 50-mm intervals respectively.

**5 FORM OF NUMERALS.**

**5.1 Shape of Numerals.**

NOTE: The limitations imposed by the necessity to incorporate vertical figuring within the confines of a relatively narrow reading face will result in numerals which do not comply with Appendix A of AS 1290.

Figuring, however, should be designed to obtain the maximum use of available space without detracting from the legibility of the graduation marks.

Figuring shall be 30 mm in height. The outlines of the figure shall be 3 mm wide.

**5.2 Form of Figuring.** The form of figuring shall comply with the following requirements:

(a) The staff shall be figured at 100-mm intervals with figures or symbols denoting the relevant metre and 100 mm. The figures shall be placed so that their lower extremity is 5 mm above the bottom of the first 10-mm graduation mark.

(b) The number of metres shall be shown by solid circles 5 mm in diameter placed in the patterns shown in Fig. 1. However, for a staff with a reading face in excess of 75 mm it is permissible to use figures in lieu of circles.

(c) Figuring shall be seen on the right-hand side of the staff when viewed through the official instrument.

(d) All figuring shall be black on a white or yellow background.

(e) Staffs figured in a manner similar to that illustrated in Fig. 1 shall be deemed to satisfy the above requirements.

**6 ACCURACY.** The error in length between any two points on the instrument at standard temperature shall not exceed the values set out in Table 1.

**TABLE 1**
**ERROR IN LENGTH**

| Length of instrument m | Maximum permissible error mm |
|---|---|
| 2 | 1 |
| 3 | 1 |
| 4 | 1.5 |
| 5 | 1.5 |

The positional error of intermediate graduations shall be subject to the same limits when tested under the same conditions.

**7 MARKING.** The instrument shall be marked in a permanent manner with the manufacturer's name and/or trademark with or without date code.

NOTE: Manufacturers who place the number of this Australian standard on products, packaging or literature related thereto should ensure that the products comply with the standard.

Attention is particularly drawn to the scheme for independent assurance provided by the AS Mark which is a registered certification trademark owned by the Standards Association of Australia.

The presence of the AS Mark on or in relation to a product is an assurance that the goods have been produced under a system of supervision, control and testing applied during manufacture and including periodical inspections at the manufacturer's works in accordance with the certification mark scheme of the SAA.

The AS Mark can be used only by manufacturers licensed under the certification mark scheme operated by the SAA, and only when accompanied by the number of the relevant Australian standard. It will usually be a requirement that the words 'Manufactured to Australian Standard' accompany the number of the standard and enclose the Mark as shown below.

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