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BRITISH ASSOCIATION (BA) SCREW THREADS AND ASSOCIATED GAUGES AND GAUGING PRACTICE

This Australian standard was prepared by Committee ME/28, Screw Threads. It was approved on behalf of the Council of the Standards Association of Australia on 4 September 1985 and published on 6 January 1986.

The following interests are represented on Committee ME/28:

Confederation of Australian Industry
CSIRO, Division of Applied Physics
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Department of Technical and Further Education, N.S.W.
Electricity Supply Association of Australia
Fasteners Institute of Australia
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Institution of Engineers, Australia
Institution of Production Engineers
Metal Trades Industry Association of Australia
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Society of Automotive Engineers, Australasia

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PREFACE

This standard was prepared by the Association's Committee on Screw Threads. It supersedes AS B46—1953, British Association (BA) Screw Threads. The standard also covers associated gauges and gauging practices previously specified in AS B121, Screw Gauge Limits and Tolerances, Part 2—1953, Gauges for Screw Threads Other Than Those of Unified Form, which was withdrawn in 1978.

It has become apparent over recent years that British Association (BA) screw threads, which theoretically are obsolescent, in fact have a continuing use in industry, particularly in instrumentation and similar applications, which are not really catered for by the metric screw thread system, the main reason being that the smallest metric thread, i.e. 1.0 mm diameter, is too large for some requirements, whereas the BA thread system covers diameters down to 0.25 mm.

In recognition of this, the committee agreed that a replacement for AS B46 was warranted, but at the same time the opportunity was taken to improve the presentation of the technical information, to introduce contemporary terms and definitions in line with the metric screw thread standards, and to include the gauges and gauging practices for BA threads previously given in AS B121, Part 2.

The technical requirements for the screw threads themselves are unchanged from AS B46, but the requirements for gauges and gauging practices have been rationalized to take account of contemporary technology. This rationalization has introduced some technical changes, the major ones being as follows:

(a) *Reference gauges of all types have been deleted.* It was considered that these types of gauges were not relevant for this type of thread and, furthermore, there was no evidence to suggest that reference grade gauges are being used by industry.

(b) *NOT GO screw ring gauges have been deleted.* Again, there was no evidence that these gauges are used by industry for this type of thread and, furthermore, such gauges contravene the basic gauging principle, i.e. the 'Taylor Principle'.

(c) *GO and NOT GO screw check plugs have been added for checking solid GO screw ring gauges.* It was not considered practical to directly measure the screw gauge parameters particularly for sizes from 2 BA to 10 BA inclusive. The GO and NOT GO check plugs also reflect current practice.

(d) Requirements for all types of gauges have been restricted to sizes 0 BA to 10 BA inclusive, for practical considerations.

There are no related ISO standards for BA screw threads, but for the screw threads i.e. excluding gauges and gauging practice, the standard is technically identical with BS 93: 1951, British Association (B.A.) Screw Threads with Tolerances for sizes 0 B.A. to 16 B.A.

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Australian Standard
for
BRITISH ASSOCIATION (BA) SCREW THREADS AND ASSOCIATED GAUGES AND GAUGING PRACTICE

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for British Association (BA) screw threads in sizes 0 BA (6.00 mm diameter) to 25 BA (0.25 mm diameter) inclusive.

The standard gives information on the screw thread system, including tolerances, deviations, symbols used for the screw thread parameters, and designation.

Requirements are also specified for associated gauges and gauging practices used for the verification of the screw threads for sizes from 0 BA to 10 BA inclusive.

Appendices are included giving the basis of the tabulated values, notes on the pitch diameter equivalent of pitch and angle errors, and notes on the verification of screw threads.

NOTES:

1. Because the tolerances as calculated from the formulas given in Appendix A require rounding, the values for the various parameters given in the tables are to be taken as authoritative for the application of this standard.
2. These screw threads are obsolescent and should not be used in new designs.

1.2 REFERENCED DOCUMENTS. The following standards are referred to in this standard.

AS 1014 Gauging of Metric Screw Threads

AS 1098 Roller-type Screw Calliper Gauges

AS B129 Designs for Geometric Limit Gauges (Plain and Screwed in Inch Units)

AS XXXX Screw Threads Terms and Definitions*

Attention is drawn to the following related standard:

AS 2710 Screw Gauges—Verification

1.3 DEFINITIONS. For the purpose of this standard, the definitions given in AS XXXX apply.

1.4 SYMBOLS. The symbols used in this standard to define the screw thread parameters are given in Table 1.1

TABLE 1.1

SYMBOLS FOR SCREW THREAD PARAMETERS

Symbol	Explanation
P	Pitch
H	Height of fundamental triangle
h	Height of thread profile
R	Root and crest radii
S	Truncation at crest and root

1.5 DESIGNATION. Screw threads designed or manufactured to this standard shall be designated in accordance with the following system:

(a) External threads.

(i) Bolt: designating an external thread.

(ii) A number: designating the size.

(iii) BA: designating the thread series.

(iv) Normal or Close: designating the thread class.

(v) Coated or Uncoated (if applicable).

Examples: Bolt—2 BA-Normal
Bolt—2 BA-Close—Uncoated
Bolt—12 BA-Normal—Coated

(b) Internal threads.

(i) Nut: designating an internal thread.

(ii) A number: designating the size.

(iii) BA: designating the thread series.

Example: Nut—2 BA

* In course of preparation.