

Australian Standard[®]

**CYLINDRICAL SCREW
THREADS—
VOCABULARY**

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PREFACE

This Standard was prepared by the Association's Committee on Screw Threads. It is identical with and has been reproduced from ISO 5408—1983 drawn up by ISO/TC 1, Screw Threads.

The purpose of this Standard is to provide a glossary of preferred terms for cylindrical screw threads.

Any amendment issued by ISO in respect of this Standard will have to be ratified by the Association's Committee before it can be incorporated in this Standard.

For the purpose of this Australian Standard the text of the ISO Standard is modified as follows:

- (a) The text in French is deleted.
- (b) Annex A, Equivalent Russian Terms, Annex B, Equivalent German Terms, and Annex C, Equivalent Italian Terms, are deleted.
- (c) Clause 1, Scope and Field of application, is reworded and its Note deleted since the original text refers to languages other than English.
- (d) The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.
- (e) For Figure 6, Fundamental Triangle and Basic Profile, the thread angle α should replace the thread angle 60° to agree with the wording of Clause 3.4, Fundamental Triangle Height, H .

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1 Scope and field of application

This Australian Standard provides fundamental terms and definitions applicable to cylindrical screw threads with profiles (in an axial plane) based on triangles.

2 Geometrical and general terms

2.1 helix: A curve on a right, circular cylindrical surface, intersecting the generators of the surface at constant angles other than 0 or $\pi/2$ radians (see figure 1).

NOTES

1 The axis of the cylindrical surface is also the axis of the helix.

2 If the cylindrical surface is cut along a straight line generator and then developed flat onto a plane, the helix will appear as a number of inclined, straight, parallel lines.

3 Terms 2.1, 2.2, 2.3 and figure 1 define general helix parameters which shall not be confused with parameters applicable to a screw thread.

4 The terms "cylinder" and "cylindrical surface", when used in this International Standard stand for "right circular cylinder" and "right circular cylinder surface" respectively.

2.2 lead of a helix: The axial distance (P_h in figure 1) between two consecutive points of intersection of a helix by a straight line generator of the cylinder on which it lies; i.e. the axial movement of a point following the helix one turn around its axis.

2.3 lead angle of a helix: The acute angle (ϕ in figure 1) between the tangent of a helix and a plane perpendicular to the axis of the cylinder on which it lies; i.e. the angle whose tangent is equal to the helix lead divided by the circumference of the cylinder on which the helix

lies, $\tan \phi = \frac{P_h}{\pi d}$

2.4 screw thread: A continuous and projecting helical ridge of uniform section on a cylindrical surface.

NOTE — In fact, every point on a thread follows its own helix. All the helices have a common axis, the thread axis, and the same lead, but the tangent of the lead angle is inversely proportional to the radial distance from the helix to the axis.

2.5 external thread, bolt thread: A screw thread formed on the outside of a cylindrical surface (see figure 2).

2.6 internal thread, nut thread: A screw thread formed on the inside of a cylindrical surface (see figure 3).

2.7 right-hand thread: A screw thread that is screwed in or on clockwise (see figures 2 and 3).

2.8 left-hand thread: A screw thread that is screwed in or on counter-clockwise (see figure 4).

2.9 single-start thread: A screw thread with only one start (see figures 2, 3 and 4).

2.10 multi-start thread: A screw thread with two or more starts (see figure 5).

3 Terms relating to screw thread elements

3.1 basic profile: The theoretical profile of the screw thread in an axial plane defined by theoretical dimensions and angles common to internal and external threads. As an example the basic profile for ISO metric screw threads is shown in figure 6.

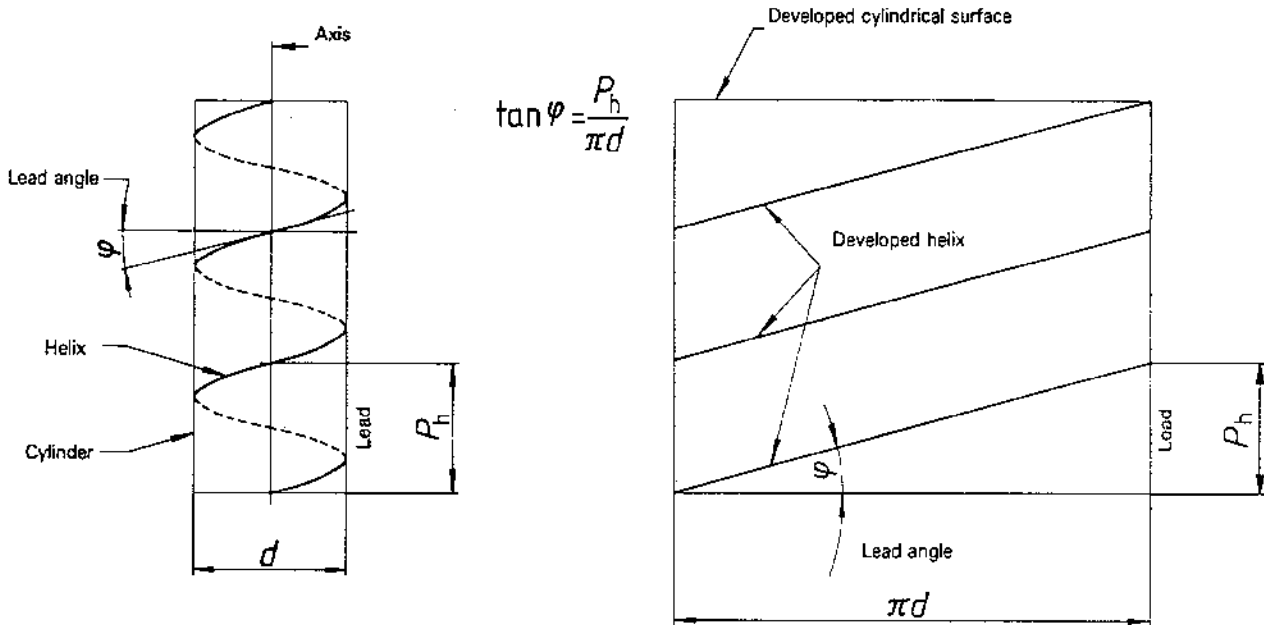


Figure 1 — Helix