
INTERNATIONAL STANDARD



68

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ISO general purpose screw threads — Basic profile

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Descriptors : fasteners, threads, screw threads, profiles, dimensions.

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 68 replaces ISO Recommendation R 68-1969 drawn up by Technical Committee ISO/TC 1, *Screw threads*.

The Member Bodies of the following countries approved the Recommendation :

| | | |
|----------------|----------------|-----------------------|
| Austria | Israel | South Africa, Rep. of |
| Belgium | Italy | Spain |
| Canada | Japan | Sweden |
| Chile | Korea, Rep. of | Switzerland |
| Czechoslovakia | Netherlands | Thailand |
| Cuba | New Zealand | Turkey |
| Denmark | Norway | U.A.R. |
| France | Peru | United Kingdom |
| Germany | Poland | U.S.S.R. |
| Hungary | Portugal | |
| India | Romania | |

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Australia
U.S.A.

ISO general purpose screw threads – Basic profile

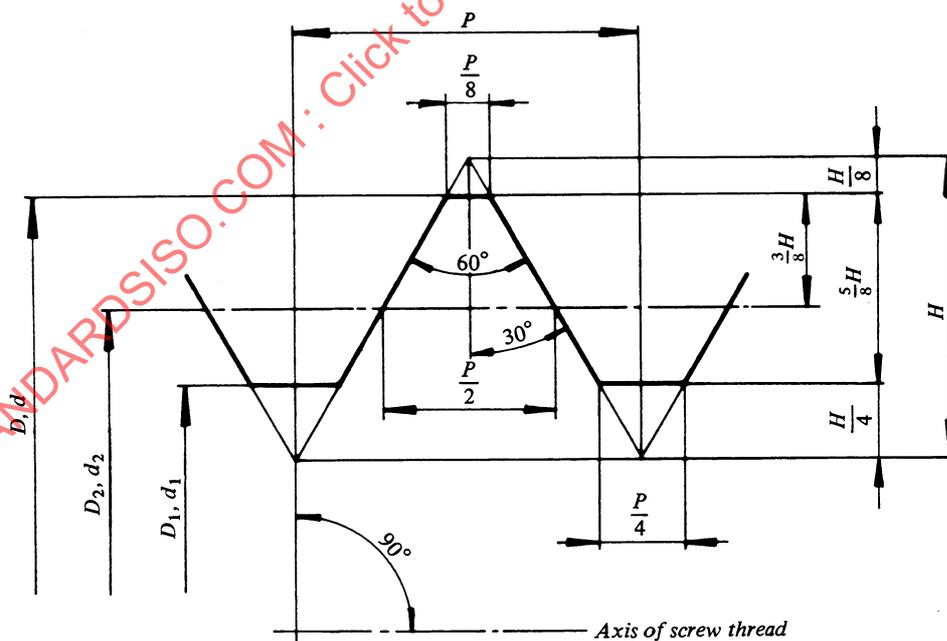
1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the basic profile for ISO general purpose metric and inch screw threads.

2 DEFINITION

basic profile : The theoretical profile, associated with the basic sizes of the major, pitch, and minor diameters of the thread.

The deviations are applied to these basic sizes.



- D = major diameter of internal thread
- d = major diameter of external thread
- D_2 = pitch diameter of internal thread
- d_2 = pitch diameter of external thread
- D_1 = minor diameter of internal thread
- d_1 = minor diameter of external thread
- P = pitch
- H = height of fundamental triangle

3 DIMENSIONS

3.1 Metric dimensions

$$H = \frac{\sqrt{3}}{2} P = 0,866\ 025\ 404\ P$$

$$\frac{5}{8} H = 0,541\ 265\ 877\ P$$

$$\frac{3}{8} H = 0,324\ 759\ 526\ P$$

$$\frac{H}{4} = 0,216\ 506\ 351\ P$$

$$\frac{H}{8} = 0,108\ 253\ 175\ P$$

TABLE 1

Dimensions in millimetres

| Pitch <i>P</i> | <i>H</i> | $\frac{5}{8}H$ | $\frac{3}{8}H$ | $\frac{H}{4}$ | $\frac{H}{8}$ |
|-------------------|-----------|----------------|----------------|---------------|---------------|
| 0,2 | 0,173 205 | 0,108 253 | 0,064 952 | 0,043 301 | 0,021 651 |
| 0,25 | 0,216 506 | 0,135 316 | 0,081 190 | 0,054 127 | 0,027 063 |
| 0,3 | 0,259 808 | 0,162 380 | 0,097 428 | 0,064 952 | 0,032 476 |
| 0,35 | 0,303 109 | 0,189 443 | 0,113 666 | 0,075 777 | 0,037 889 |
| 0,4 | 0,346 410 | 0,216 506 | 0,129 904 | 0,086 603 | 0,043 301 |
| 0,45 | 0,389 711 | 0,243 570 | 0,146 142 | 0,097 428 | 0,048 714 |
| 0,5 | 0,433 013 | 0,270 633 | 0,162 380 | 0,108 253 | 0,054 127 |
| 0,6 | 0,519 615 | 0,324 760 | 0,194 856 | 0,129 904 | 0,064 952 |
| 0,7 | 0,606 218 | 0,378 886 | 0,227 332 | 0,151 554 | 0,075 777 |
| 0,75 | 0,649 519 | 0,405 949 | 0,243 570 | 0,162 380 | 0,081 190 |
| 0,8 | 0,692 820 | 0,433 013 | 0,259 808 | 0,173 205 | 0,086 603 |
| 1 | 0,866 025 | 0,541 266 | 0,324 760 | 0,216 506 | 0,108 253 |
| 1,25 | 1,082 532 | 0,676 582 | 0,405 949 | 0,270 633 | 0,135 316 |
| 1,5 | 1,299 038 | 0,811 899 | 0,487 139 | 0,324 760 | 0,162 380 |
| 1,75 | 1,515 544 | 0,947 215 | 0,568 329 | 0,378 886 | 0,189 443 |
| 2 | 1,732 051 | 1,082 532 | 0,649 519 | 0,433 013 | 0,216 506 |
| 2,5 | 2,165 063 | 1,353 165 | 0,811 899 | 0,541 266 | 0,270 633 |
| 3 | 2,598 076 | 1,623 798 | 0,974 279 | 0,649 519 | 0,324 760 |
| 3,5 | 3,031 089 | 1,894 431 | 1,136 658 | 0,757 772 | 0,378 886 |
| 4 | 3,464 102 | 2,165 063 | 1,299 038 | 0,866 025 | 0,433 013 |
| 4,5 | 3,897 114 | 2,435 696 | 1,461 418 | 0,974 279 | 0,487 139 |
| 5 | 4,330 127 | 2,706 329 | 1,623 798 | 1,082 532 | 0,541 266 |
| 5,5 | 4,763 140 | 2,976 962 | 1,786 177 | 1,190 785 | 0,595 392 |
| 6 | 5,196 152 | 3,247 595 | 1,948 557 | 1,299 038 | 0,649 519 |
| 8 | 6,928 203 | 4,330 127 | 2,598 076 | 1,732 051 | 0,866 025 |