
International Standard



1580

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Slotted pan head screws — Product grade A

Vis à métaux à tête cylindrique large, fendue — Grade A

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Descriptors : fasteners, screws, slotted head screws, dimensions, designation.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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.

International Standard ISO 1580 was developed by Technical Committee ISO/TC 2, *Fasteners*, and was circulated to the member bodies in December 1981.

It has been approved by the member bodies of the following countries:

| | | |
|---------------------|------------------------|-----------------------|
| Australia | Hungary | Poland |
| Belgium | India | Romania |
| Brazil | Ireland | South Africa, Rep. of |
| Canada | Italy | Spain |
| China | Japan | Sri Lanka |
| Czechoslovakia | Korea, Dem. P. Rep. of | Sweden |
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The member bodies of the following countries expressed disapproval of the document on technical grounds:

Austria
United Kingdom

This International Standard cancels and replaces ISO Recommendation R 1580-1970, of which it constitutes a technical revision.

Slotted pan head screws — Product grade A

1 Scope and field of application

This International Standard specifies the characteristics of slotted pan head screws in product grade A and with thread sizes M 1,6 to M 10 inclusive.

If other specifications are required, it is recommended that they should be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898, ISO 965, ISO 3506.

2 References

ISO 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions.*

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 888, *Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts.*

ISO 898, *Mechanical properties of fasteners.*

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 3269, *Fasteners — Acceptance inspection.*¹⁾

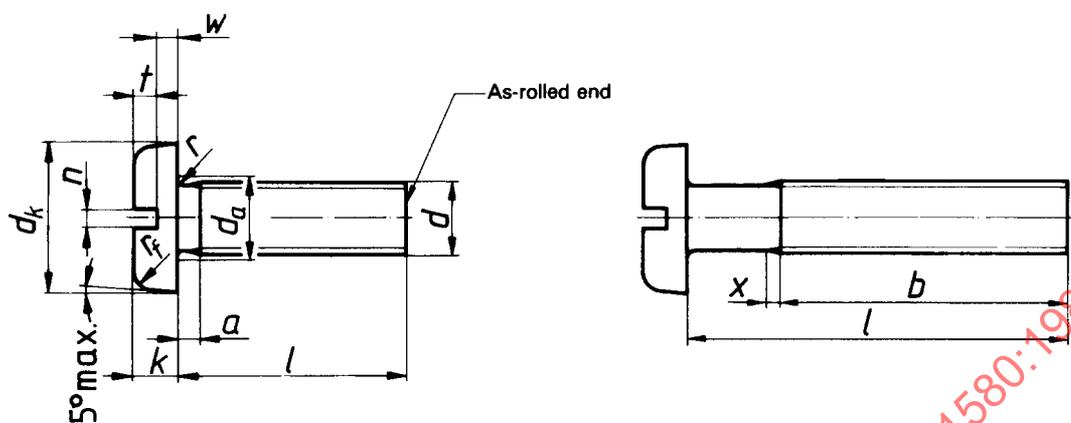
ISO 3506, *Corrosion-resistant stainless steel fasteners — Specifications.*

ISO 4042, *Threaded components — Electroplated coatings components.*¹⁾

ISO 4759/1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters > 1,6 and < 150 mm and product grades A, B and C.*

¹⁾ At present at the stage of draft.

3 Dimensions



Shank diameter is approximately equal to pitch diameter or equal to major thread diameter permissible

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Dimensions in millimetres

| Thread size <i>d</i> | | | M 1,6 | M 2 | M 2,5 | M 3 | (M 3,5) ¹⁾ | M 4 | M 5 | M 6 | M 8 | M 10 |
|------------------------|------|------|------------|------|-------|------|-----------------------|------|------|-------|-------|-------|
| <i>p</i> ²⁾ | | | 0,35 | 0,4 | 0,45 | 0,5 | 0,6 | 0,7 | 0,8 | 1 | 1,25 | 1,5 |
| <i>a</i> | max. | | 0,7 | 0,8 | 0,9 | 1 | 1,2 | 1,4 | 1,6 | 2 | 2,5 | 3 |
| <i>b</i> | min. | | 25 | 25 | 25 | 25 | 38 | 38 | 38 | 38 | 38 | 38 |
| <i>d_k</i> | max. | | 3,2 | 4 | 5 | 5,6 | 7 | 8 | 9,5 | 12 | 16 | 20 |
| | min. | | 2,9 | 3,7 | 4,7 | 5,3 | 6,64 | 7,64 | 9,14 | 11,57 | 15,57 | 19,48 |
| <i>d_a</i> | max. | | 2,1 | 2,6 | 3,1 | 3,6 | 4,1 | 4,7 | 5,7 | 6,8 | 9,2 | 11,2 |
| <i>k</i> ³⁾ | max. | | 1 | 1,3 | 1,5 | 1,8 | 2,1 | 2,4 | 3 | 3,6 | 4,8 | 6 |
| | min. | | 0,85 | 1,1 | 1,3 | 1,6 | 1,9 | 2,2 | 2,8 | 3,3 | 4,5 | 5,7 |
| <i>n</i> | nom. | | 0,4 | 0,5 | 0,6 | 0,8 | 1 | 1,2 | 1,2 | 1,6 | 2 | 2,5 |
| | min. | | 0,46 | 0,56 | 0,66 | 0,86 | 1,06 | 1,26 | 1,26 | 1,66 | 2,06 | 2,56 |
| | max. | | 0,6 | 0,7 | 0,8 | 1 | 1,2 | 1,51 | 1,51 | 1,91 | 2,31 | 2,81 |
| <i>r</i> | min. | | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,2 | 0,2 | 0,25 | 0,4 | 0,4 |
| <i>r_f</i> | ref. | | 0,5 | 0,6 | 0,8 | 0,9 | 1 | 1,2 | 1,5 | 1,8 | 2,4 | 3 |
| <i>t</i> | min. | | 0,35 | 0,5 | 0,6 | 0,7 | 0,8 | 1 | 1,2 | 1,4 | 1,9 | 2,4 |
| <i>w</i> | min. | | 0,3 | 0,4 | 0,5 | 0,7 | 0,8 | 1 | 1,2 | 1,4 | 1,9 | 2,4 |
| <i>x</i> | max. | | 0,9 | 1 | 1,1 | 1,25 | 1,5 | 1,75 | 2 | 2,5 | 3,2 | 3,8 |
| (1), 3), 4) | | | | | | | | | | | | |
| nom. | min. | max. | | | | | | | | | | |
| 2 | 1,8 | 2,2 | | | | | | | | | | |
| 2,5 | 2,3 | 2,7 | | | | | | | | | | |
| 3 | 2,8 | 3,2 | | | | | | | | | | |
| 4 | 3,7 | 4,3 | | | | | | | | | | |
| 5 | 4,7 | 5,3 | | | | | | | | | | |
| 6 | 5,7 | 6,3 | | | | | | | | | | |
| 8 | 7,7 | 8,3 | | | | | | | | | | |
| 10 | 9,7 | 10,3 | | | | | | | | | | |
| 12 | 11,6 | 12,4 | | | | | | | | | | |
| (14) | 13,6 | 14,4 | Range | | | | | | | | | |
| 16 | 15,6 | 16,4 | of | | | | | | | | | |
| 20 | 19,6 | 20,4 | commercial | | | | | | | | | |
| 25 | 24,6 | 25,4 | lengths | | | | | | | | | |
| 30 | 29,6 | 30,4 | | | | | | | | | | |
| 35 | 34,5 | 35,5 | | | | | | | | | | |
| 40 | 39,5 | 40,5 | | | | | | | | | | |
| 45 | 44,5 | 45,5 | | | | | | | | | | |
| 50 | 49,5 | 50,5 | | | | | | | | | | |
| (56) | 54 | 56 | | | | | | | | | | |
| 60 | 59 | 61 | | | | | | | | | | |
| (65) | 64 | 66 | | | | | | | | | | |
| 70 | 69 | 71 | | | | | | | | | | |
| (75) | 74 | 76 | | | | | | | | | | |
| 80 | 79 | 81 | | | | | | | | | | |

- 1) Sizes in brackets should be avoided if possible.
- 2) *P* = pitch of the thread.
- 3) Min. and max. values according to ISO 4759/1 but rounded to one decimal place.
- 4) Screws with nominal lengths above the stepped line, marked thus - - -, are threaded up to the head ($b = l - a$).

4 Specifications and reference International Standards

| | | | | |
|------------------------------|-------------------------|--|------------------|-------------------|
| Material | | Steel | Stainless steel | Non-ferrous metal |
| Thread | Tolerance | 6g | | |
| | International Standards | ISO 261, ISO 965 | | |
| Mechanical properties | Property class | 4.8 ¹⁾ , 5.8 ¹⁾ | A2 - 70, A2 - 50 | 2) |
| | International Standards | ISO 898/1 | ISO 3506 | |
| Tolerances | Product grade | A | | |
| | International Standard | ISO 4759/1 | | |
| Finish | | Plain Requirements for electroplating are covered in ISO 4042. If different electroplating requirements are desired or if requirements are needed for other finishes, they should be negotiated between supplier and customer. | | |
| Acceptability | | The acceptance procedure is covered in ISO 3269. | | |

- 1) Max. hardness 255 HV permissible.
- 2) Will be covered in a future International Standard.

5 Designation

Example for the designation of a slotted pan head screw with thread size $d = M5$, nominal length $l = 20$ mm and property class 4.8:

Pan head screw ISO 1580 - M5 × 20 - 4.8

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