INTERNATIONAL STANDARD

# ISO 11381

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# Optics and optical instruments — Ophthalmic optics — Screw threads

*Optique et instruments d'optique — Optique ophtalmique — Filetages*

Reference number
ISO 11381:1994(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11381 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 8, *Ophthalmic optics*.

Annex A of this International Standard is for information only.





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# Optics and optical instruments — Ophthalmic optics — Screw threads



## 1 Scope

This International Standard specifies requirements for ISO metric screw threads for use with spectacle frames. Provision is made for screw threads of the following nominal sizes: S0,8 × 0,2; M1,0 × 0,25; M1,2 × 0,25; M1,4 × 0,3; M1,6 × 0,35 and M2,0 × 0,4 and for related taps and gauges.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 529:1993, *Short machine taps and hand taps.*

ISO 965-3:1980, *ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional threads.*

ISO 1501/R:1970, *ISO miniature screw threads.*

ISO 1502:—[1], *ISO general-purpose metric screw threads — Gauges and gauging.*

## 3 Screw threads

The screw threads shall be either

— ISO metric threads of size S0,8 × 0,2, complying with the requirements of ISO/R 1501, or

— ISO metric screw threads of sizes M1,0 × 0,25; M1,2 × 0,25; M1,4 × 0,3; M1,6 × 0,35 or M2,0 × 0,4, complying with the requirements of ISO 965-3.

The class of fit shall be as given in table 1.

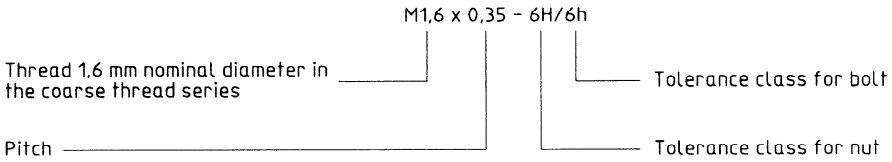
**Table 1 — Class of fit of screw threads**

| Screw thread | Class of fit | |
|---|---|---|
| | Nut | Screw |
| S0,8 × 0,2 | 4H6 | 5h3 |
| M1,0 × 0,25 | 5H | 6h or 6g |
| M1,2 × 0,25 | | |
| M1,4 × 0,3 | | |
| M1,6 × 0,35 | 6H | |
| M2,0 × 0,4 | | |

The designation of a screw thread consists of a capital letter indicating the thread series, followed by the value of the nominal diameter and of the pitch, expressed in millimetres and separated by a cross (×). The designation of the class of fit consists of a figure indicating the tolerance grade and a letter indicating the tolerance position, capital for nuts and lower case for bolts. The screw thread designation is separated from the class of fit by a dash.

1) To be published. (Revision of ISO 1502:1978)

EXAMPLE:




## 4 Definitions and tolerances on lengths of screws

### 4.1 Flat head machine screws (figure 1)

The length of screws with flat heads is defined to be the distance from the underside surface of the head to the extreme end of the shank, including any chamfer, radius or cone point.

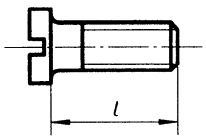



**Figure 1**

### 4.2 Countersunk head screws (figure 2)

The length of screws with countersunk heads is defined to be the distance from the upper surface of the head to the extreme end of the shank, including any chamfer, radius, or cone point.

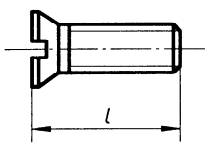



**Figure 2**

### 4.3 Fillister — countersunk head screws (figure 3)

The length of screws with raised countersunk heads is defined to be the distance from the underside surface of the head to the extreme end of the shank, including any chamfer, radius, or cone point.

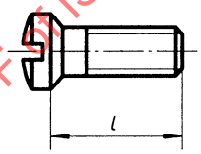



**Figure 3**

### 4.4 Pan and cheese head screws (figure 4)

The length of screws with pan or cheese heads is defined to be the distance from the underside of the head to the extreme end of the shank, including any chamfer, radius, or cone point.

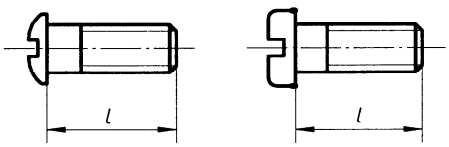



**Figure 4**

### 4.5 Tolerance on length

The nominal length of the screw, as defined in 4.1, 4.2 or 4.3 as appropriate, shall comply with the requirements of the purchaser, subject to a tolerance of 0 mm to – 0,15 mm.

## 5 Screwing taps

Screwing taps for sizes M1,0 × 0,25; M1,2 × 0,25; M1,4 × 0,3; M1,6 × 0,35 and M2,0 × 0,4 shall comply with the requirements of ISO 529.

NOTE 1 Screwing taps of size S0,8 × 0,2 are not specified in any International Standard.

## 6 Gauges

Gauges shall comply with the requirements of ISO 1502.

# Annex A
(informative)

## Use and application of screw threads

| Screw thread | Use and application |
|---|---|
| S0,8 × 0,2 | |
| M1,0 × 0,25 | Pad |
| M1,2 × 0,25 | |
| M1,4 × 0,3 | Joint and closing block |
| M1,6 × 0,35 | Joint |
| M2,0 × 0,4 | |