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**Mineral and sapphire watch-glasses —**  
**Part 1:**  
**Dimensions and tolerances**

*Verres de montres minéraux et en saphir —*  
*Partie 1: Dimensions et tolérances*



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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this part of ISO 14368 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14368-1 was prepared by Technical Committee ISO/TC 114, *Horology*, Subcommittee SC 13, *Watch-glasses*.

ISO 14368 consists of the following parts, under the general title *Mineral and sapphire watch-glasses*:

- *Part 1: Dimensions and tolerances*
- *Part 2: Assembly to the case by adhesive or using a gasket*
- *Part 3: Qualitative criteria and test methods*



# Mineral and sapphire watch-glasses —

## Part 1: Dimensions and tolerances

### 1 Scope

This part of ISO 14368 specifies the dimensions and tolerances of mineral and sapphire watch-glasses. It is applicable to round, flat watch-glasses, typically of diameter 8 mm to 35 mm.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 14368. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 14368 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 286-1, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*.

ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

### 3 Terms, definitions and symbols

#### 3.1 Terms and definitions

For the purposes of this part of ISO 14368, the terms and definitions given in ISO 286-1 and in ISO 286-2 apply.

#### 3.2 Symbols

See Figure 1.

- $d$  diameter of the glass
- $h_1$  cylindrical side height of the glass
- $h_2$  height of the lower slope of the glass
- $h_3$  height of the upper slope of the glass
- $h_4$  determining height for glasses assembled with adhesive
- $t$  total thickness of the glass
- $\beta$  angle of the lower slope of the glass

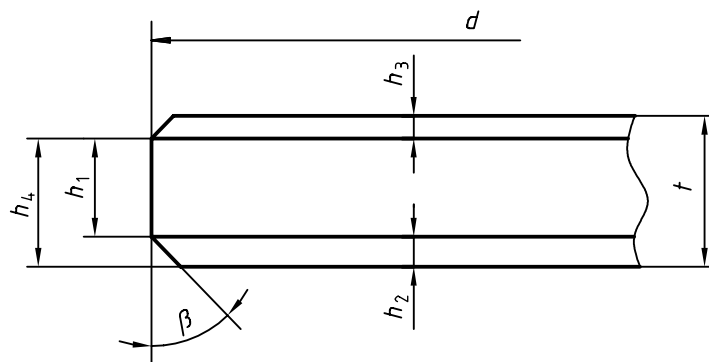


Figure 1 — Details of symbols

## 4 Dimensions

The dimensions shall be as given in Tables 1 and 2.

For glasses assembled with adhesive, the lower slope height  $h_2$  shall be 0,10 mm provided that height  $h_4$  is no less than  $t/2$  [ $h_4 = (h_2 + h_1)$  or  $h_4 = (t - h_3)$ ].

For glasses assembled with a gasket, the lower slope height  $h_2$  shall be between 0,15 mm and 0,40 mm inclusive, in steps of 0,05 mm, provided that the cylindrical side height of the glass  $h_1$  is no less than  $t/2$  [ $h_1 = t - (h_2 + h_3)$ ].

The cylindrical side height of the glass,  $h_1$ , is a determining factor for glasses assembled with a gasket.

The lower slope angle  $\beta$  of the glass will have the following values:

- for glasses assembled with adhesive,  $\beta = 45^\circ$
- for glasses assembled with a gasket,  $35^\circ \leq \beta \leq 40^\circ$ .

Table 1 — Thickness and diameter of glass

Dimensions in millimetres

| $t$                                | $d$                               |
|------------------------------------|-----------------------------------|
| From 0,60 to 1,60 in 0,10 mm steps | From 8,0 to 35,0 in 0,50 mm steps |

Table 2 — Tolerances

Dimensions in millimetres  
Tolerances in micrometres

| Glasses assembled with adhesive |                     |              |                    | Glasses assembled with a gasket |                     |              |                    |
|---------------------------------|---------------------|--------------|--------------------|---------------------------------|---------------------|--------------|--------------------|
| $t$                             |                     | $d$          |                    | $t$                             |                     | $d$          |                    |
| 0,6 to 1,0                      | js13 ( $\pm 70$ )   | 8,0 to 10,0  | js10 ( $\pm 29$ )  | 0,6 to 1,0                      | js13 ( $\pm 70$ )   | 8,0 to 10,0  | js9 ( $\pm 18$ )   |
|                                 |                     | 10,5 to 18,0 | js9,5 ( $\pm 28$ ) |                                 |                     | 10,5 to 18,0 | js9 ( $\pm 21$ )   |
| > 1,0                           | js13,5 ( $\pm 98$ ) | 18,5 to 30,0 | js9 ( $\pm 26$ )   | > 1,0                           | js13,5 ( $\pm 98$ ) | 18,5 to 30,0 | js8,5 ( $\pm 21$ ) |
|                                 |                     | > 30,5       | js9 ( $\pm 31$ )   |                                 |                     | > 30,5       | js8 ( $\pm 19$ )   |

NOTE 1 The values of the tolerances are in accordance with ISO 286-1 and ISO 286-2.

NOTE 2 In certain cases, the tolerances defined for glasses assembled with adhesive may apply to glasses assembled with a gasket.