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ISO general purpose metric screw threads — Tolerances —

Part 5:
Limits of sizes for internal threads to mate with hot-dip galvanized external threads with maximum size of tolerance position h before galvanizing

Filetages métriques ISO pour usages généraux — Tolérances —

Partie 5: Dimensions limites pour filetages intérieurs pour assemblages avec des filetages extérieurs galvanisés à chaud de position de tolérance maximale h avant galvanisation

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This document was prepared by Technical Committee ISO/TC 1, *Screw threads*.

This second edition cancels and replaces the first edition (ISO 965-5:1998), which has been technically revised. It also incorporates the amendment ISO 965-5:1998/Amd.1:2021.

The main changes are as follows:

— in Clauses 1 and 5, including Table 1, "limit deviations" has been replaced by "fundamental deviations";

— in Table 1, a small pitch 1 has been added for the tolerance position AZ, and two pitches (1,25 and 1,5) have been deleted for the tolerance position AX;

— in Table 2, the large nominal diameters (from 68 mm to 100 mm) and the two small nominal diameters (6 mm and 7 mm) have been added;

— in Table 3, the large nominal diameters (from 68 mm to 100 mm) have been added, and two small nominal diameters (8 mm and 10 mm) have been deleted;

— in Tables 2 and 3, the columns of minimum major diameter columns have been deleted, respectively.

A list of all parts in the ISO 965 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO general purpose metric screw threads — Tolerances —

Part 5:
Limits of sizes for internal threads to mate with hot-dip galvanized external threads with maximum size of tolerance position h before galvanizing

1 Scope

This document specifies the fundamental deviations and limits of sizes for the pitch and minor diameters of ISO general purpose metric internal threads (M) conforming to ISO 262 (M6 to M68 with the coarse pitches and M72 to M100 with pitch 6) having basic and design profiles in accordance with ISO 68-1.

This document is applicable to the metric internal threads oversized to tolerance class 6AZ or 6AX to mate with the hot-dip galvanized external threads with maximum size of tolerance position h before galvanizing.

This document is not applicable to internal threads with coating on thread surface. The limits of sizes before coating are decided by agreement between manufacturer and purchaser.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 965-1, *ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 965-4, *ISO general purpose metric screw threads — Tolerances — Part 4: Limits of sizes for hot-dip galvanized external threads to mate with internal threads made to tolerance position H or G after galvanizing*

ISO 5408, *Screw threads — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5408 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 General

There are two tolerance classes for internal threads: 6AZ and 6AX. Tolerance class 6AZ offers a smaller fundamental deviation intended to mate with hot-dip galvanized external threads having a thin coating. Tolerance class 6AX offers a larger fundamental deviation intended to mate with hot-dip galvanized external threads having a heavy coating.

Internal threads oversized to tolerance class 6AZ or 6AX according to this document, shall not be mated with external threads undersized to tolerance class 6az before galvanizing in accordance with ISO 965-4. Such combinations ~~will~~ create high probability for screw thread stripping.

Internal threads according to this document shall be made after the hot-dip galvanizing process has been completed~~, therefore~~. Therefore, no coating is present on the surface of internal threads.

The root contours and truncations of screw threads shall be according to ISO 965-1.

5 Fundamental deviations

The fundamental deviations for internal threads shall be as specified in Table 1.

The fundamental deviations, EI_{AZ} and EI_{AX}, have been calculated according to Formulae (1) and (2), respectively:

$$EI_{AZ} = + (300 + 20P) \tag{1}$$

NOTE 1   This is not applicable to threads with $P < 1$ mm.

$$EI_{AX} = + (220P - 20) \tag{2}$$

NOTE 2   This is not applicable to threads with $P < 1,75$ mm.

where

EI is the fundamental deviation, expressed in micrometres;

P is the pitch, expressed in millimetres.

Table 1 — Fundamental deviations for internal threads

Pitch P mm	Tolerance position AZ EI_{AZ} µm	Tolerance position AX EI_{AX} µm
1	+320	—[a]
1,25	+325	—[a]
1,5	+330	—[a]
1,75	+335	+365
2	+340	+420
2,5	+350	+530
3	+360	+640
3,5	+370	+750
4	+380	+860
4,5	+390	+970
5	+400	+1 080
5,5	+410	+1 190
6	+420	+1 300
[a] Use the tolerance position AZ.		

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