



DPC: 24/30482003 DC

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Date: 05 September 2024

Origin: International

Latest date for receipt of comments: 29 October 2024

Project No. 2023/02508

Responsible committee: FME/9 Fasteners

Interested committees:

Title: Draft BS ISO 965-1 ISO general purpose metric screw threads - Tolerances. Part 1: Principles and basic data.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 965-1

ISO general purpose metric screw threads — Tolerances —

Part 1: Principles and basic data

*Filetages métriques ISO pour usages généraux — Tolérances —
Partie 1: Principes et données fondamentales*

ICS: 21.040.10

ISO/TC 1

Secretariat: **SAC**

Voting begins on:
2024-09-05

Voting terminates on:
2024-11-28

This document is circulated as received from the committee secretariat.

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Reference number
ISO/DIS 965-1:2024(en)

Full document details: 24/30482003 DC

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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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

This fifth edition cancels and replaces the fourth edition (ISO 965-1:2013), which has been technically revised. It also incorporates the AMENDMENT ISO 965-1:2013/Amd.1:2021.

The main changes are as follows:

- in [Clauses 6, 7](#) and [A.1](#), the last paragraphs (special tolerances) have been added, respectively;
- [Clause 10](#) (Coated threads) has been added;
- [Clause 13.5](#) (Designation of coated threads) has been added;
- [Annex B](#) (Formulae for the minor diameters of external threads) has been added, and in [Clause 4](#) (Symbols), the symbol T_{d3} has been added.

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 1:

Principles and basic data

1 Scope

This document specifies a tolerance system for ISO general purpose metric screw threads (M) conforming to ISO 261 having basic and design profiles in accordance with ISO 68-1.

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 68-1, *ISO general purpose screw threads — Basic and design profiles — Part 1: Metric screw threads*

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

ISO 1502, *ISO general-purpose metric screw threads — Gauges and gauging*

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 Symbols

For the purposes of this document, the following symbols apply.

Symbol	Meaning
D	major diameter of internal thread (nominal diameter)
d	major diameter of external thread (nominal diameter)
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 on basic profile
d_3	minor diameter of external thread on design profile
P	pitch
Ph	lead
H	fundamental triangle height

Symbol	Meaning
S	designation for short length group of thread engagement
N	designation for normal length group of thread engagement
L	designation for long length group of thread engagement
<i>T</i>	tolerance
$T_{D1}, T_{D2}, T_d, T_{d2}, T_{d3}$	tolerances for D_1, D_2, d, d_2 and d_3
<i>El</i>	lower deviations of internal thread (fundamental deviations)
<i>es</i>	upper deviations of external thread (fundamental deviations)
$R_{1\min}$	minimum root radius of external thread on design profile
<i>C</i>	root truncation of external thread on design profile

5 Tolerance system

The tolerance system consists of tolerance grades and tolerance positions. The tolerance grades are expressed by number, such as 4, 6 and 8. The tolerance positions are expressed by letter, such as H, G, h and g. The tolerance class designation shall be the combination of the number and the letter, for example 6H and 6g.

6 Tolerance positions

The following tolerance positions are standardized:

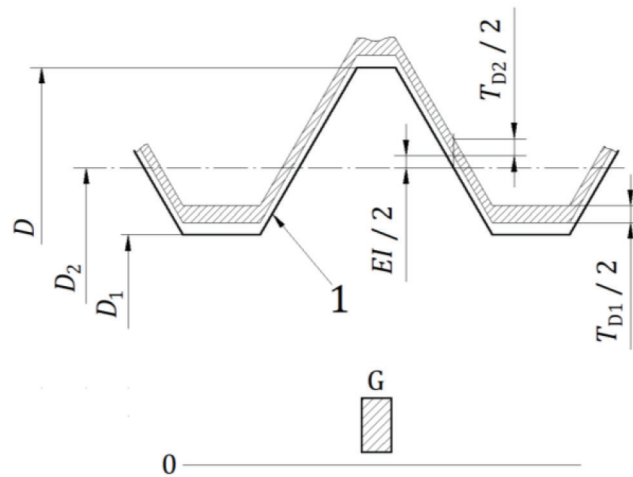
- for internal threads:
 - G with positive fundamental deviation (*El*), shown in [Figure 1](#);
 - H with zero fundamental deviation (*El*), shown in [Figure 2](#).
- for external threads:
 - a, b, c, d, e, f and g with negative fundamental deviations (*es*), shown in [Figure 3](#);
 - h with zero fundamental deviation (*es*), shown in [Figure 4](#).

NOTE For the tolerance positions az, AZ and AX used for hot dip galvanized screw threads, see ISO 965-4 and ISO 965-5.

The established tolerance positions comply with the needs of coating thickness and with the demands of easy assembly.

The fundamental deviations for internal and external threads shall be as specified in [Table 1](#).

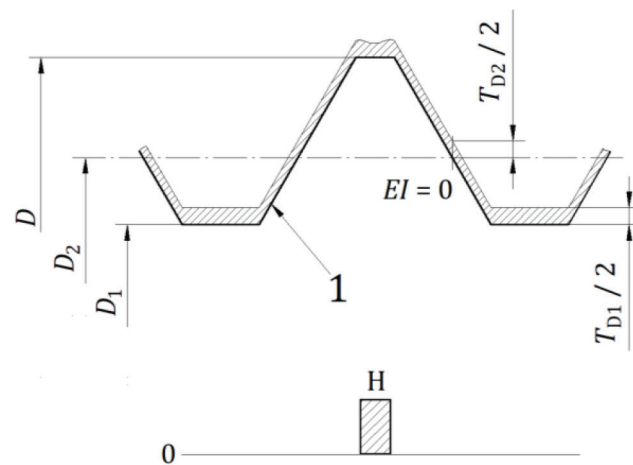
For the special pitches which are not included in [Table 1](#), their fundamental deviations should be calculated by the formulae given in [Annex A](#). These special fundamental deviation values shall be specified in the relevant threaded product documents.



Key

1 basic profile

Figure 1 — Internal threads with tolerance position G



Key

1 basic profile

Figure 2 — Internal threads with tolerance position H