



SLOVENSKI STANDARD

oSIST prEN ISO 14581:2022

01-januar-2022

Vezni elementi - Notranji šestrogeljni v ugrezni ploski glavi vijaka (običajna oblika glave) z manjšo obremenljivostjo (ISO/DIS 14581:2021)

Fasteners - Hexalobular socket countersunk flat head screws (common head style) with reduced loadability (ISO/DIS 14581:2021)

Mechanische Verbindungselemente - Senkschrauben mit Innensechsrund (Einheitskopf) mit reduzierter Belastbarkeit (ISO/DIS 14581:2021)

Fixations - Vis à tête fraisée (tête commune) à six lobes internes à capacité de charge réduite (ISO/DIS 14581:2021)

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Ta slovenski standard je istoveten z: prEN ISO 14581

ICS:

21.060.10 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

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en,fr,de

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DRAFT INTERNATIONAL STANDARD

ISO/DIS 14581

ISO/TC 2/SC 11

Secretariat: DIN

Voting begins on:
2021-11-16Voting terminates on:
2022-02-08

Fasteners — Hexalobular socket countersunk flat head screws (common head style) with reduced loadability

Fixations — Vis à tête fraisée réduite à six lobes internes à capacité de charge réduite

ICS: 21.060.10

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Reference number
ISO/DIS 14581:2021(E)

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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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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 11, *Fasteners with metric external thread*.

This second edition cancels and replaces the first edition (ISO 14581:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

- common head style added in title (see also ISO 7046-1 and ISO 7046-2);
- the whole standard has been improved to clearly point out that these hexalobular socket countersunk flat head screws have reduced loadability because of their head design (head dimensions and penetration of the hexalobular socket);
- option for partially threaded screws without underhead reinforcement (formerly designated as “shoulder”) for range M2 to M4 has been added (see [Figure 1 b](#)) and reinforcement feature for partially threaded screws M5 to M10 has been modified from a radius to a conical shape as adjustment to manufacturing conditions (see [Figure 1 d](#));
- detailed head configuration has been added (see [Figure 2](#));
- shank diameter d_s has been added in [Table 1](#);
- minimum head height k_{\min} has been added as reference dimension in [Table 1](#);
- radius r has been added in [Figures 1 b](#)), [1 c](#)) and [1 d](#)) and r_{\min} has been added [Table 1](#);
- minimum length ranges have been increased in [Table 1](#);
- b has been introduced as a reference dimension which is applicable for partially threaded screws;

- calculations for M2 and M2,5 have been added; as their minimum ultimate tensile loads for full loadability are not specified in ISO 898-1 and ISO 3506-1, they have been calculated with the same formulae accordingly (see [Annex A](#));
- the minimum ultimate tensile loads were recalculated and have been changed to more precise values for M2, M2,5 (property classes 4.8, 8.8, 50 and 70), M3 (property classes 4.8, 50 and 70), M5 (property class 8.8), M6 (property classes 4.8, 50 and 70), M8 (property classes 50 and 70) and M10 (property class 70), see [Table 3](#);
- property class 10.9 has been added in [Table 2](#);
- new clause [4.2](#) “Gauging of head” has been added;
- new clause [6.2](#) “Labelling on package” has been added;
- with regard to “countersinks” reference to ISO 15065 has been added in Bibliography;
- references to ISO 7046-1 and ISO 7046-2 have been added in Bibliography.

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.

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Fasteners — Hexalobular socket countersunk flat head screws (common head style) with reduced loadability

1 Scope

This document specifies the characteristics of hexalobular socket countersunk flat head screws with reduced loadability due to head design, made of steel and stainless steel with metric coarse pitch threads M2 to M10 and with product grade A.

If in certain cases other specifications are requested, stainless steel grades can be selected from ISO 3506-1, and dimensional options from ISO 888 and ISO 4753.

NOTE 1 The reduced loadability (related to the countersunk head dimensions in combination with penetration of the hexagon socket specified in this document) implies a limitation of ultimate tensile load. The loadability in the head is assumed to be 80 % of that in the thread for all sizes and all property classes; see [Table 3](#).

NOTE 2 Hexalobular socket countersunk head screws, high head with full loadability, are specified in ISO 14582, but these products are not interchangeable, because of different head heights.

NOTE 3 Particular attention is needed to ensure alignment of the countersunk head with the bearing surface of the countersink in the assembly.

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2 Normative references (standards.iteh.ai)

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 888, *Fasteners — Bolts, screws and studs — Nominal lengths and thread lengths*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

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

ISO 1891-4, *Fasteners — Vocabulary — Part 4: Control, inspection, delivery, acceptance and quality*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-1, *Fasteners — Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs with specified grades and property classes*

ISO 4042, *Fasteners — Electroplated coating systems*

ISO 4753, *Fasteners — Ends of parts with external ISO metric thread*

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

ISO 6157-1, *Fasteners — Surface discontinuities — Part 1: Bolts, screws and studs for general requirements*

ISO 7721, *Countersunk head screws — Head configuration and gauging*

ISO 8991, *Designation system for fasteners*

ISO 8992, *Fasteners — General requirements for bolts, screws, studs and nuts*

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ISO 10664, *Hexalobular internal driving feature for bolts and screws*ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coating systems***3 Terms and definitions**

No terms and definitions are listed in this document.

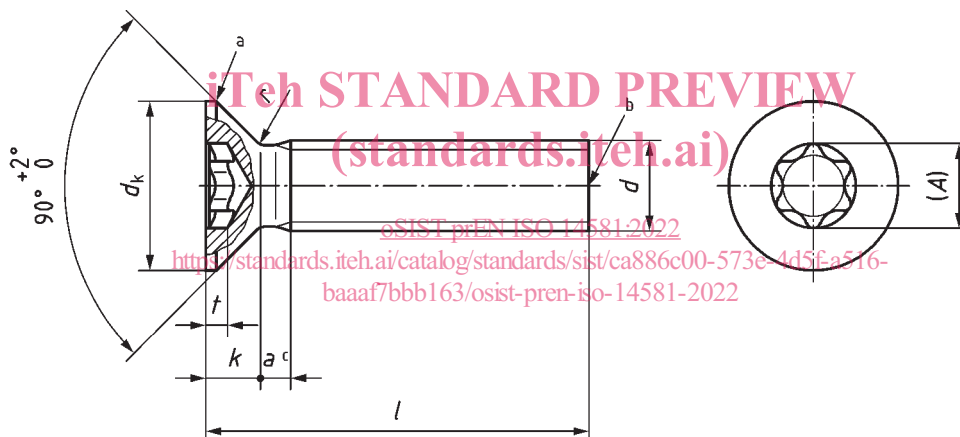
ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

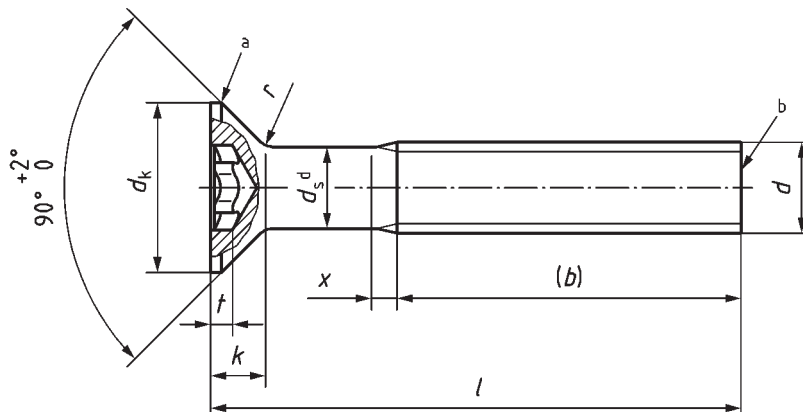
4 Dimensions and gauging of the head**4.1 Dimensions**

Dimensions shall be in accordance with [Figure 1](#) and [Figure 2](#) and [Table 1](#).

Symbols and descriptions of dimensions are specified in ISO 225.



a) Fully threaded screws without underhead reinforcement for sizes M2 to M4



b) Partially threaded screws without underhead reinforcement for sizes M2 to M4