ICS 21.060.10 SLOVENSKÁ TECHNICKÁ NORMA Jún 2023

STN	**Spojovacie súčiastky Skrutky s polguľovou hlavou s redukovanou zaťažiteľnosťou Časť 1: Skrutky s polguľovou hlavou s vnútorným šesťhranom (ISO 7380-1: 2022)**	**STN EN ISO 7380-1 02 1147**

Fasteners - Button head screws with reduced loadability - Part 1: Hexagon socket button head screws (ISO 7380-1:2022)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/23

Obsahuje: EN ISO 7380-1:2023, ISO 7380-1:2022

Oznámením tejto normy sa ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 7380-1

January 2023

ICS 21.060.10

Supersedes EN ISO 7380-1:2011

English Version

Fasteners - Button head screws with reduced loadability - Part 1: Hexagon socket button head screws (ISO 7380-1:2022)

Fixations - Vis à tête cylindrique bombée plate à capacité de charge réduite - Partie 1: Tête cylindrique bombée plate à six pans creux (ISO 7380-1:2022)

Mechanische Verbindungselemente - Schrauben mit abgeflachtem Halbrundkopf mit reduzierter Belastbarkeit - Teil 1: Schrauben mit abgeflachtem Halbrundkopf mit Innensechskant (ISO 7380-1:2022)

This European Standard was approved by CEN on 26 November 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 7380-1:2023 E

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European foreword

This document (EN ISO 7380-1:2023) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 “Fasteners” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2023, and conflicting national standards shall be withdrawn at the latest by July 2023.

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

This document supersedes EN ISO 7380-1:2011.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 7380-1:2022 has been approved by CEN as EN ISO 7380-1:2023 without any modification.

INTERNATIONAL STANDARD

ISO 7380-1

Second edition
2022-12

Fasteners — Button head screws with reduced loadability —

Part 1: Hexagon socket button head screws

Fixations — Vis à tête cylindrique bombée plate à capacité de charge réduite —

Partie 1: Tête cylindrique bombée plate à six pans creux

Reference number
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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185, *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 7380-1:2011), which has been technically revised.

The main changes are as follows:

— the whole standard (including title) has been improved to clearly point out that these hexagon socket button head screws have reduced loadability because of their head design (head dimensions and penetration of the hexagon socket);

— the reference thread length b has been increased to $3d$ for partially threaded screws M16, so that these screws can be tensile tested in accordance with ISO 3506-1 ($b \geq 3d$ is required to tensile test screws with reduced loadability);

— the reference datum for the outer diameter of the bearing face has been specified (see Figure 1), and the minimum values have been reduced to $d_{w,min} = d_{k,min} \times 0{,}92$ considering the manufacturing aspects for “button head” (see Table 1);

— e_{min} values have been rounded to two decimal places (see Table 1);

— the maximum depth of the hexagon socket t_{max} has been added (see Table 1);

— symbol w has been substituted by the new symbol w_b in order to define the wall thickness between the bottom of the cylindrical broached hole and the bearing face (see Figure 2 and Table 1);

— the definition of r_f in Figure 1 has been changed to allow the offset of the centre of the radius from the thread axis;

— the smallest and greatest standard lengths have been amended (see Table 2);

— stainless steel grades A3 and A5 have been deleted from Table 3;

— the minimum ultimate tensile loads were recalculated and have been changed to more precise values for steel screws with property classes 8.8 (M5, M12 and M16), 10.9 (M3, M6 and M10) and 12.9/12.9 (M4 to M8) and for stainless steel screws with property classes 70 (M3 to M10 and M16) and 80 (M5, M12 and M16); see Table 4;

— specifications for marking and labelling have been added as new Clause 6.

A list of all parts in the ISO 7380 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.

INTERNATIONAL STANDARD **ISO 7380-1:2022(E)**

Fasteners — Button head screws with reduced loadability —

Part 1: Hexagon socket button head screws

1 Scope

This document specifies the characteristics of hexagon socket button head screws with reduced loadability due to head design, in steel and stainless steel, with metric coarse pitch threads M3 to M16, and with product grade A.

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

NOTE The reduced loadability (related to the head dimensions in combination with penetration of the hexagon socket specified in this document) implies a limitation of ultimate tensile load shown by a specific marking (property class preceded by a zero). The loadability in the head is assumed to be 80 % of that in the thread for all sizes and all property classes, see Table 4.

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 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 6157-3, *Fasteners — Surface discontinuities — Part 3: Bolts, screws and studs for special requirements*

ISO 8991, *Designation system for fasteners*

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

ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coating systems*