

Fasteners - Heat treated tapping screws - Mechanical and physical properties (ISO 2702:2022)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 2702:2022 sisaldab Euroopa standardi EN ISO 2702:2022 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 2702:2022 consists of the English text of the European standard EN ISO 2702:2022.
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English Version

Fasteners - Heat treated tapping screws - Mechanical and physical properties (ISO 2702:2022)

Fixations - Vis à tôle traitées thermiquement -
Caractéristiques mécaniques et physiques (ISO
2702:2022)

Mechanische Verbindungselemente -
Wärmebehandelte Blechschrauben - Mechanische und
physikalische Eigenschaften (ISO 2702:2022)

This European Standard was approved by CEN on 5 December 2022.

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European foreword

This document (EN ISO 2702:2022) 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of an identical text or by endorsement, at the latest by June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.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 2702:2011.

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 2702:2022 has been approved by CEN as EN ISO 2702:2022 without any modification.

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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 13, *Fasteners with non-metric thread*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185, *Threaded and nonthreaded mechanical fasteners and accessories*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 2702:2011), which has been technically revised.

The main changes are as follows:

- document newly structured with regard to requirements and test methods;
- new [Table 1](#) for mechanical and physical properties and related test methods (see [5.1](#));
- maximum case-hardened depth increased to 0,12 mm for ST2,2 and ST2,6 (see [5.3](#));
- maximum core hardness changed from 370 HV back to 390 HV and core hardness test specified more precisely (see [5.4](#) and [6.4](#));
- new clauses for ductility and ductility test added (see [5.8](#) and [6.8](#));
- test method for case-hardened depth determination modified (see [6.3](#));
- torsional test specified more precisely (see [6.7](#));
- new [Clause 7](#) for inspection added;
- new [Clause 8](#) for marking and labelling added.

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.

Fasteners — Heat treated tapping screws — Mechanical and physical properties

1 Scope

This document specifies the mechanical and physical properties of heat treated tapping screws made of steel, with thread sizes ST2,2 to ST9,5 in accordance with ISO 1478, when tested at the ambient temperature range of 10 °C to 35 °C, and the related test methods.

Tapping screws are designed to form mating threads in sheet metals, without their own threads being deformed. Tapping screws are not intended to be pretensioned by design, even though they can experience varying degrees of low-level tensile stress after installation.

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 1478, *Tapping screws thread*

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

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 16228, *Fasteners — Types of inspection documents*

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/>

3.1

tapping screw

sheet metal screw

screw with thread in accordance with ISO 1478 which, when driven into a hole, creates its own mating threads in the materials of the parts being assembled (usually thin metal sheets) without deforming its own thread

4 Materials

Tapping screws shall be made from cold heading steel that can be case-hardened (see e.g. ISO 4954, EN 10263-3, ASME B18.6.3, GB/T 6478, JIS G 3507-2).