

Sintered metal materials, excluding hardmetals -
Tensile test pieces (ISO 2740:2023)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 2740:2023 sisaldab Euroopa standardi EN ISO 2740:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.09.2023.</p> <p>Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 2740:2023 consists of the English text of the European standard EN ISO 2740:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 20.09.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

**Sintered metal materials, excluding hardmetals - Tensile
test pieces (ISO 2740:2023)**

Matériaux en métal fritté, à l'exclusion des métaux-
durs - Éprouvettes pour essai de traction (ISO
2740:2023)

Sintermetalle, ausgenommen Hartmetalle -
Zugprobestäbe (ISO 2740:2023)

This European Standard was approved by CEN on 1 September 2023.

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

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European foreword

This document (EN ISO 2740:2023) has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy" in collaboration with Technical Committee CEN/SS M11 "Powder metallurgy" the secretariat of which is held by CCMC.

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of an identical text or by endorsement, at the latest by March 2024, and conflicting national standards shall be withdrawn at the latest by March 2024.

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 2740:2009.

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 2740:2023 has been approved by CEN as EN ISO 2740:2023 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 document 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 119, *Powder metallurgy*, Subcommittee SC 3, *Sampling and testing methods for sintered metal materials (excluding hardmetals)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS M11, *Powder metallurgy*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This sixth edition cancels and replaces the fifth edition (ISO 2740:2009), which has been technically revised.

The main changes are as follows:

- [Figure 3](#), specifically the die in it, has been updated;
- [Figure 4](#) (former Figure 3), table below, Type A1: Value R_1 has been corrected to 12,5 mm;
- [Figure 4](#) (former Figure 3), table below, Type A2: Value R_1 has been corrected to 11,5 mm;
- references to the revised ISO 6892-1 has been updated;
- in [5.2](#), measurement unit given to optional die exit taper and 4th paragraph has been inserted;
- a new test piece geometry has been added as [Figure 3](#).

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Sintered metal materials, excluding hardmetals — Tensile test pieces

1 Scope

This document is applicable to all sintered metals and alloys, excluding hardmetals.

This document specifies:

- the die cavity dimensions used for making tensile test pieces by pressing and sintering, and by metal injection moulding (MIM) and sintering;
- the dimensions of tensile test pieces machined from sintered and powder forged materials.

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 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

3 Terms and definitions

No terms and definitions are listed in this document.

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 Method of testing

4.1 Test pieces shall be tested in accordance with ISO 6892-1, and the tensile test machine shall be calibrated to Class 1, in accordance with ISO 7500-1.

4.2 Data are to be reported for three or more test pieces.

5 Manufacture of test pieces

5.1 Pressed and sintered test pieces

The tensile test pieces shall have thicknesses from 5 mm to 6,5 mm. A thickness tolerance of 1,5 mm accommodates varying apparent densities in metal powders.

During testing, the thinner pieces have less grip slippage and are more likely to break near the centre of the gauge length.