



SLOVENSKI STANDARD
SIST EN 24492:2000
01-december-2000

Metallic powders, excluding powders for hardmetals - Determination of dimensional changes associated with compacting and sintering (ISO 4492:1985)

Metallic powders, excluding powders for hardmetals - Determination of dimensional changes associated with compacting and sintering (ISO 4492:1985)

Metallpulver, mit Ausnahme von Hartmetallpulver - Ermittlung der Maßänderungen beim Pressen und Sintern (ISO 4492:1985)

Poudres métalliques à l'exclusion des poudres pour métaux-durs - Détermination de changements dimensionnels liés à la compression et au frittage (ISO 4492:1985)

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Ta slovenski standard je istoveten z: EN 24492:1993

ICS:

77.160 Metalurgija prahov Powder metallurgy

SIST EN 24492:2000 **en**

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EUROPEAN STANDARD

EN 24492:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1993

UDC 621.762:669-492.2:620.1:539.379.2

Descriptors: Powder metallurgy, metallic powder, compression, compacting, sintering, dimensional stability tests, dimensional measurements

English version

**Metallic powders, excluding powders for
hardmetals - Determination of dimensional
changes associated with compacting and sintering
(ISO 4492:1985)**

Poudres métalliques à l'exclusion des poudres
pour métaux-durs - Détermination de changements
dimensionnels liés à la compression et au
frittage (ISO 4492:1985)

Metallpulver, mit Ausnahme von Hartmetallpulver
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This European Standard was approved by CEN on 1993-04-02. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

In 1992 ISO 4492:1985 "Metallic powders, excluding powders for hardmetals - Determination of dimensional changes associated with compacting and sintering" was submitted to the CEN Primary Questionnaire procedure.

Following the positive result of the CEN/CS Proposal ISO 4492:1985 was submitted to the CEN Formal Vote. The result of the Formal Vote was positive.

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 October 1993, and conflicting national standards shall be withdrawn at the latest by October 1993.

According to the Internal Regulations of CEN/CENELEC, the following countries are bound to implement this European Standard :

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Endorsement notice

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The text of the International Standard ISO 4492:1985 was approved by CEN as a European Standard without any modification.

NOTE: The European references to international publications are given in annex ZA (normative).

Annex ZA (normative)
Normative references to international publications
with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 2740		Sintered metal materials (excluding hard-metal) - Tensile test piece	----	----
ISO 3927		Metallic powders, excluding powders for hard-metals - Determination of compactibility (Compressibility) in uniaxial compression	EN 23927	

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International Standard



4492

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Metallic powders, excluding powders for hard metals — Determination of dimensional changes associated with compacting and sintering

Poudres métalliques à l'exclusion des poudres pour métaux-durs — Détermination de changements dimensionnels liés à la compression et au frittage

Second edition — 1985-06-15

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SIST EN 4492:2000

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UDC 621.762.4/.5 : 531.71

Ref. No. ISO 4492-1985 (E)

Descriptors : powder metallurgy, metallic powder, compacting, sintering, tests, dimensional stability tests, dimensional measurement.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4492 was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*.

ISO 4492 was first published in 1978. This second edition ~~replaces the first edition, of which it constitutes a minor revision.~~ <https://standards.iteh.ai/catalog/standards/sist/ddb3ba70-9063-40d5-ad4f-96a9e146dd6a/sist-en-24492-2000>

ITeH STANDARD PREVIEW
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Metallic powders, excluding powders for hardmetals — Determination of dimensional changes associated with compacting and sintering

1 Scope and field of application

This International Standard specifies a method by which the dimensional changes associated with compacting and sintering of metallic powders are compared with those of a reference powder when processed under similar conditions. (See clause 4.)

The method applies to the determination of three types of dimensional changes involved with the processing of metallic powders, excluding powders for hardmetals.

2 References

ISO 2740, *Sintered metal materials (excluding hardmetal) — Tensile test pieces.*

ISO 3927, *Metallic powders, excluding powders for hardmetals — Determination of compactibility (compressibility) in uniaxial compression.*

3 Principle

Compaction of a metallic powder or powder mix with admixed lubricant to produce a test piece and then sintering it under controlled conditions. Depending upon the particular dimensional change required, measurement of the dimension of the unloaded die cavity, the green compact and/or the sintered test piece. Calculation of the algebraic difference between these various measurements as a percentage of the dimension of the die cavity or the green compact. (See clause 9.)

Standard test pieces made from a reference lot of powder are processed together with the sample under test and the dimensional changes of the two powders are reported.

4 Test parameters

The reference powder shall be chosen by agreement between supplier and user and shall have a composition and properties as close as possible to those of the powder to be tested.

The following three types of dimensional changes are dealt with in this International Standard:

4.1 From die size to green size (spring back): The increase in dimensions of a compact, measured at right angles to the direction of pressing, after being ejected from the die.

4.2 From green size to sintered size (sintered dimensional change): The change in dimensions of an object that occurs as a result of sintering.

4.3 From die size to sintered size (total dimensional change):

5 Symbols and designations

Symbol	Designation	Unit
d_D	Test dimension of unloaded die	mm
d_G	Test dimension of green compact	mm
d_S	Test dimension of sintered compact	mm
Δd_{DG}	Spring back	% (+)
Δd_{GS}	Sintered dimensional change	% (+ or -)
Δd_{DS}	Total dimensional change	% (+ or -)

6 Apparatus

6.1 Tool set that will produce cylindrical (see figure 1), rectangular (see figure 2) or tensile test pieces (in accordance with ISO 2740) or test pieces similar to the actual components for which the powder is required.

6.2 Press capable of applying the pressures necessary to achieve the required density.

6.3 Balance capable of weighing at least 100 g to an accuracy of $\pm 0,01$ g.

6.4 Micrometer or other suitable measuring device for measuring the dimensions of the compacts and the die to an accuracy of $\pm 0,005$ mm.