BS EN ISO 4492:2017

BSI Standards Publication

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

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 4492:2017. It is identical to ISO 4492:2017. It supersedes BS EN ISO 4492:2013, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/65, Sintered metal components.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Metallic powders, excluding powders for hardmetals - Determination of dimensional changes associated with compacting and sintering (ISO 4492:2017)

Poudres métalliques à l'exclusion des poudres pour métaux-durs - Détermination de changements dimensionnels liés à la compression et au frittage (ISO 4492:2017)

Metallpulver, mit Ausnahme von Hartmetallpulvern - Ermittlung der Maßänderungen beim Pressen und Sintern (ISO 4492:2017)

This European Standard was approved by CEN on 2 November 2017.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

This document (EN ISO 4492:2017) has been prepared by Technical Committee ISO/TC 119 “Powder metallurgy”.

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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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 4492:2013.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4492:2017 has been approved by CEN as EN ISO 4492:2017 without any modification.

Contents

Page

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 on 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 the following URL: www.iso.org/iso/foreword.html

This document was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*, Subcommittee SC 2, *Sampling and testing methods for powders (including powders for hardmetals)*.

This fourth edition cancels and replaces the third edition (ISO 4492:2013), of which it constitutes a minor revision to adjust tolerances and geometry in Figures 1 and 2 and clarify the use of scale and micrometer.

INTERNATIONAL STANDARD ISO 4492:2017(E)

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

1 Scope

This document 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 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 2740, *Sintered metal materials, excluding hardmetals — Tensile test pieces*

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 http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

Compaction of a metallic powder or powder mix with admixed lubricant was used to produce a test piece that was sintered under controlled conditions. Depending upon the particular dimensional change required, measurement of the dimension of the uploaded die cavity, the green compact, and/or the sintered test piece is calculated. The algebraic difference between these various measurements is calculated 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 (see Annex A for additional information).

5 Test parameters

The reference powder shall be chosen by agreement between the 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 document:

5.1 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.