Irish Standard
I.S. EN ISO 3927:2017

Metallic powders, excluding powders for hardmetals - Determination of compressibility in uniaxial compression (ISO 3927:2017)

I.S. EN ISO 3927:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 3927:2017 is the adopted Irish version of the European Document EN ISO 3927:2017, Metallic powders, excluding powders for hardmetals - Determination of compressibility in uniaxial compression (ISO 3927:2017)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 3927

September 2017

ICS 77.160

Supersedes EN ISO 3927:2011

English Version

Metallic powders, excluding powders for hardmetals - Determination of compressibility in uniaxial compression (ISO 3927:2017)

Poudres métalliques, à l'exclusion des poudres pour métaux-durs - Détermination de la compressibilité sous compression uniaxiale (ISO 3927:2017)

Metallpulver, mit Ausnahme von Hartmetallpulvern - Bestimmung der Verdichtbarkeit bei einachsigem Pressen (ISO 3927:2017)

This European Standard was approved by CEN on 26 September 2017.

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European foreword

This document (EN ISO 3927:2017) 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.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.

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Endorsement notice

The text of ISO 3927:2017 has been approved by CEN as EN ISO 3927:2017 without any modification.

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INTERNATIONAL STANDARD

ISO 3927

Fifth edition
2017-09

Metallic powders, excluding powders for hardmetals — Determination of compressibility in uniaxial compression

Poudres métalliques, à l'exclusion des poudres pour métaux-durs — Détermination de la compressibilité sous compression uniaxiale

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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 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 fifth edition cancels and replaces the fourth edition (ISO 3927:2011), of which it constitutes a minor revision to adjust punch tolerances in Figure 2 and clarify the use of scale and micrometer.

Metallic powders, excluding powders for hardmetals — Determination of compressibility in uniaxial compression

1 Scope

This document specifies methods for measuring the extent to which a metallic powder is compacted when subjected to uniaxial compressive loading in a confining die under specified conditions.

The method is not applicable to powders for hardmetals.

2 Normative references

There are no normative references in this document.

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 Symbols

For the purposes of this document, the symbols given in Table 1 apply.

Table 1 — Symbols

Symbol	Designation	Unit
ρ_p	Compressibility[a]	g/cm^3
m	Mass of the compact	g
V	Volume of the compact	cm^3

[a] If the compressibility is measured at one pressure only, e.g. 400 N/mm^2, the symbol becomes $\rho_{p(400)}$.

5 Principle

Uniaxial compaction of a powder in a confining die by double-action pressing. Samples of the powder may be pressed either at a single specified pressure or at a series of specified pressures. After ejection from the die, the density of the compacts is determined.

The density obtained in the former case represents the compressibility of the powder at the specified pressure. The densities obtained in the latter case can be utilized for drawing the compressibility curve of the powder, i.e. a plot of the density as a function of the compacting pressure.