



NSAI
Standards

Irish Standard
I.S. EN ISO 4490:2014

Metallic powders - Determination of flow rate by means of a calibrated funnel (Hall flowmeter) (ISO 4490:2014)

I.S. EN ISO 4490:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document is based on:

EN ISO 4490:2014

Published:

2014-08-20

This document was published under the authority of the NSAI and comes into effect on:

2014-09-06

ICS number:

77.160

NOTE: If blank see CEN/CENELEC cover page

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EUROPEAN STANDARD

EN ISO 4490

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2014

ICS 77.160

Supersedes EN ISO 4490:2008

English Version

Metallic powders - Determination of flow rate by means of a calibrated funnel (Hall flowmeter) (ISO 4490:2014)

Poudres métalliques - Détermination du temps d'écoulement au moyen d'un entonnoir calibré (appareil de Hall) (ISO 4490:2014)

Metallpulver - Ermittlung der Durchflussdauer mit Hilfe eines kalibrierten Trichters (Hall flowmeter) (ISO 4490:2014)

This European Standard was approved by CEN on 30 July 2014.

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EN ISO 4490:2014 (E)

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Foreword

This document (EN ISO 4490:2014) 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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4490:2008.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4490:2014 has been approved by CEN as EN ISO 4490:2014 without any modification.

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INTERNATIONAL STANDARD

**ISO
4490**

Fourth edition
2014-08-15

Metallic powders — Determination of flow rate by means of a calibrated funnel (Hall flowmeter)

*Poudres métalliques — Détermination du temps d'écoulement au
moyen d'un entonnoir calibré (appareil de Hall)*



Reference number
ISO 4490:2014(E)

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ISO 4490:2014(E)



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Published in Switzerland

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ISO 4490:2014(E)

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is 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 4490:2008), of which it constitutes a minor revision with the following changes:

- a note has been added in [3.1](#);
- “stopwatch” replaced with “timing device” in [3.4](#).

Metallic powders — Determination of flow rate by means of a calibrated funnel (Hall flowmeter)

1 Scope

This International Standard specifies a method for determining the flow rate of metallic powders, including powders for hard metals, by means of a calibrated funnel (Hall flowmeter).

The method is applicable only to powders which flow freely through the specified test orifice.

2 Principle

Measurement of the time required for 50 g of a metallic powder to flow through the orifice of a calibrated funnel of standardized dimensions.

3 Apparatus

3.1 Calibrated funnel, having the dimensions shown in [Figure 1](#) (see [Clause 4](#)).

The funnel shall be made of a non-magnetic, corrosion-resistant metallic material having sufficient wall thickness and hardness to withstand distortion and excessive wear.¹⁾

NOTE The dimensions shown for the funnel, including the orifice, are not to be considered controlling factors. Calibration with emery, as specified in [Clause 4](#), determines the working flow rate of the funnel.

3.2 Stand and horizontal vibration-free base, to support the funnel rigidly, e.g. as indicated in [Figure 2](#).¹⁾

3.3 Balance, of sufficient capacity, capable of weighing the test portion to an accuracy of $\pm 0,05$ g.

3.4 Timing device, capable of measuring the elapsed time to an accuracy of $\pm 0,1$ s.

3.5 Chinese emery grit, a reference powder used for calibration of the funnel.¹⁾

1) Apparatus complying with 3.1 and 3.2, and standard Chinese emery grit can be purchased from ACuPowder International, LLC, 901 Lehigh Avenue, Union, NJ 07083, USA. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of the company named above. Equivalent products may be used if they can be shown to lead to the same results.

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