SVENSK STANDARD
SS-ISO 18549-2:2010

Fastställd/Approved: 2010-02-22
Publicerad/Published: 2010-03-30
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 77.160

Metalliska pulver – Bestämning av fylldensitet och flytförmåga vid förhöjda temperaturer – Del 2: Bestämning av flytförmåga vid förhöjda temperaturer (ISO 18549-2:2009, IDT)

Metallic powders – Determination of apparent density and flow rate at elevated temperatures – Part 2: Determination of flow rate at elevated temperatures (ISO 18549-2:2009, IDT)

SWEDISH STANDARDS INSTITUTE

Hitta rätt produkt och ett leveranssätt som passar dig

Standarder
Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster
Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på. På så sätt är du säker på att du alltid arbetar efter rätt utgåva.
e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt
Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter
Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement". Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt
Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards
By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services
Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.
e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery
You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products
We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements. Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project
You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Den internationella standarden ISO 18549-2:2009 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 18549-2:2009.

The International Standard ISO 18549-2:2009 has the status of a Swedish Standard. This document contains the official English version of ISO 18549-2:2009.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00.
Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.
Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.
E-mail: sis.sales@sis.se Internet: www.sis.se

Contents

Page

Foreword ... iv

1 Scope ... 1

2 Normative references ... 1

3 Apparatus ... 1

4 Calibration of the funnel ... 3
4.1 Method A ... 3
4.2 Method B ... 4

5 Test sample ... 4

6 Procedure (Methods A and B) ... 4

7 Result ... 4
7.1 Method A ... 4
7.2 Method B ... 5

8 Test report ... 5

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 18549-2 was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*, Subcommittee SC 2, *Sampling and testing methods for powders (including powders for hardmetals)*.

ISO 18549 consists of the following parts, under the general title *Metallic powders — Determination of apparent density and flow rate at elevated temperatures*:

— *Part 1: Determination of apparent density at elevated temperatures*

— *Part 2: Determination of flow rate at elevated temperatures*

Metallic powders — Determination of apparent density and flow rate at elevated temperatures —

Part 2:
Determination of flow rate at elevated temperatures

1 Scope

This part of ISO 18549 describes two methods for the determination of the time (flow rate) it takes for a given quantity of a heated powder mix, based on iron or steel powders and to be used for warm compaction, to pass through a funnel with a given orifice diameter.

Method A uses a funnel with an orifice of 2,5 mm and a test portion of 50 g and is, to a large extent, based on the method standardized in ISO 4490. The method can only be used for powder mixes that flow freely through the 2,5 mm orifice in the heated condition.

Method B uses a funnel with an orifice of 5 mm and a test portion with a size of 150 g.

Both methods cover a testing temperature range of 60 °C to 180 °C and either of them can be selected after agreement between the parties involved.

2 Normative references

The following referenced documents are indispensable for the application 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 4490:2008, *Metallic powders — Determination of flow rate by means of a calibrated funnel (Hall flowmeter)*

3 Apparatus

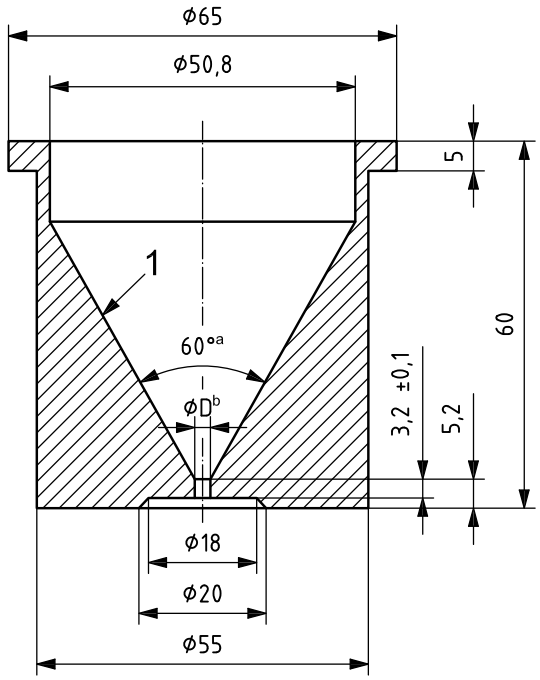
3.1 Thermally insulated enclosure, where the actual measurement shall take place.

3.2 Funnel with an orifice diameter of 2,5 mm (Method A) or, alternatively, a **funnel with an orifice of 5 mm (Method B)**, see Figure 1 or 2, respectively.

The funnel should be made of a non-magnetic, corrosion-resistant metallic material with sufficient wall thickness and hardness to avoid distortion and excessive wear. The inner surface of the funnel should be polished.

3.3 Stand and horizontal vibration-free base to support the funnel rigidly, e.g. as shown in Figure 3 (Methods A and B).

Dimensions in millimetres



Key

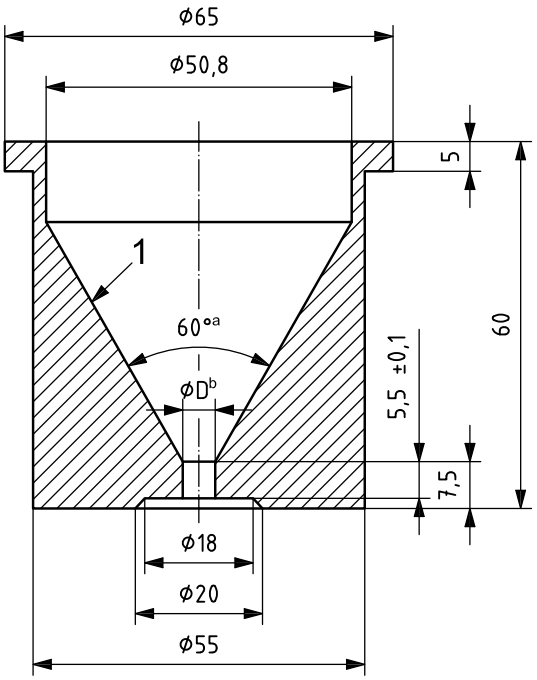
1 polished to $Ra \leqslant 0{,}4\ \mu m$

a this value is mandatory

b $D = 2{,}5^{+0,2}_{0}$

Figure 1 — Funnel with orifice diameter of 2,5 mm (Method A)

Dimensions in millimetres



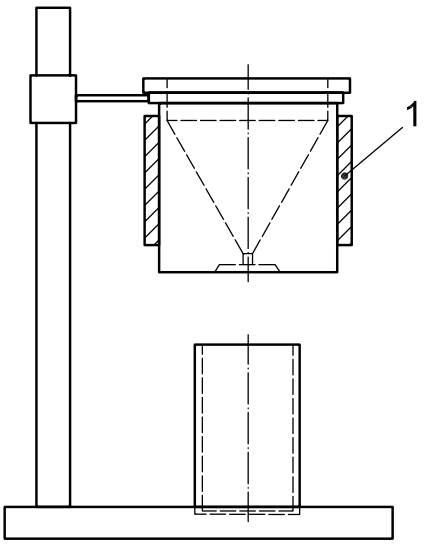
Key

1 polished to $Ra \leqslant 0{,}4\ \mu m$

a this value is mandatory

b $D = 5^{+0,2}_{0}$

Figure 2 — Funnel with orifice diameter of 5 mm (Method B)



Key

1 heating device, e.g. band heater

Figure 3 — Arrangement of the stand with funnel, including heating device, and receptacle