

SVENSK STANDARD

SS-EN ISO 3927:2011

Fastställt/Approved: 2011-02-15
Publicerad/Published: 2011-03-16
Utgåva/Edition: 2
Språk/Language: engelska/English
ICS: 77.160

Metalliska pulver exklusive hårdmetallpulver – Bestämning av pressbarhet vid enaxlig pressning (ISO 3927:2011)

Metallic powders, excluding powders for hardmetals – Determination of compressibility in uniaxial compression (ISO 3927:2011)

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-76507>

Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.



Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00



Europastandarden EN ISO 3927:2011 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 3927:2011.

Denna standard ersätter SS-EN ISO 3927, utgåva 1 och SS-EN ISO 3927/AC:2009, utgåva 1.

The European Standard EN ISO 3927:2011 has the status of a Swedish Standard. This document contains the official version of EN ISO 3927:2011.

This standard supersedes the Swedish Standard SS-EN ISO 3927, edition 1 and SS-EN ISO 3927/AC:2009, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Uppllysningar 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 uppllysningar om svensk och utländsk standard.

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

Denna standard är framtagen av kommittén för Pulvermetallurgi, SIS/TK 133.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD

EN ISO 3927

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2011

ICS 77.160

Supersedes EN ISO 3927:2001

English Version

**Metallic powders, excluding powders for hardmetals -
Determination of compressibility in uniaxial compression (ISO
3927:2011)**

Poudres métalliques, à l'exclusion des poudres pour
métaux-durs - Détermination de la compressibilité sous
compression uniaxiale (ISO 3927:2011)

Metallpulver, mit Ausnahme von Hartmetallpulvern -
Bestimmung der Verdichtbarkeit bei einachsigem Pressen
(ISO 3927:2011)

This European Standard was approved by CEN on 10 January 2011.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 3927:2011) has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy" in collaboration with Technical Committee CEN/TC SS M11 "Powder metallurgy" the secretariat of which is held by CCMC.

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 August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

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 3927:2001.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 3927:2011 has been approved by CEN as a EN ISO 3927:2011 without any modification.

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

1 Scope

This International Standard 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 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/mm², the symbol becomes $\rho_{p(400)}$.

3 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.

4 Apparatus

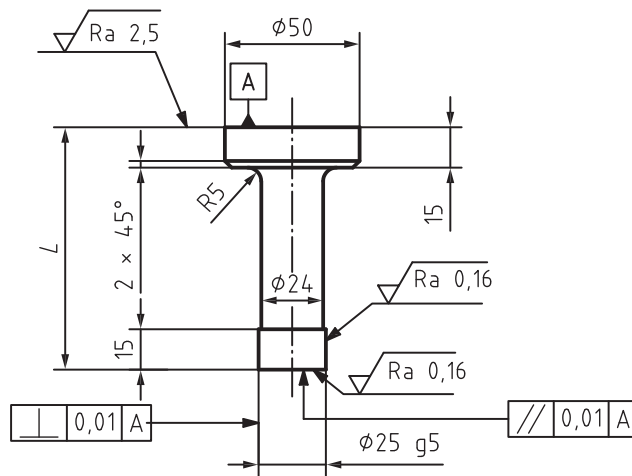
4.1 Die, preferably of cemented carbide, or alternatively of tool steel, and two punches for producing either cylindrical or rectangular compacts.

The cylindrical die should be capable of making compacts of diameter 20 mm to 26 mm with a height to diameter ratio between 0,8 and 1. An example of a design for tooling is shown in Figure 1.

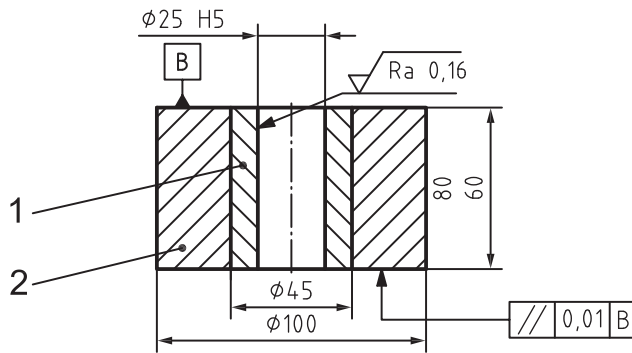
The rectangular die should be capable of making compacts of 30 mm × 12 mm and of thickness 5 mm to 7 mm. An example of a design for tooling is shown in Figure 2.

Mating parts shall be fitted and lapped.

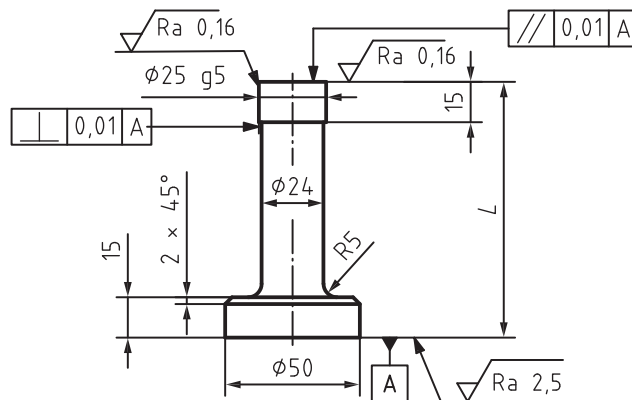
Dimensions in millimetres



a) Upper punch, $L = H - 10$



b) Die, $H = 60 \text{ mm to } 80 \text{ mm}$



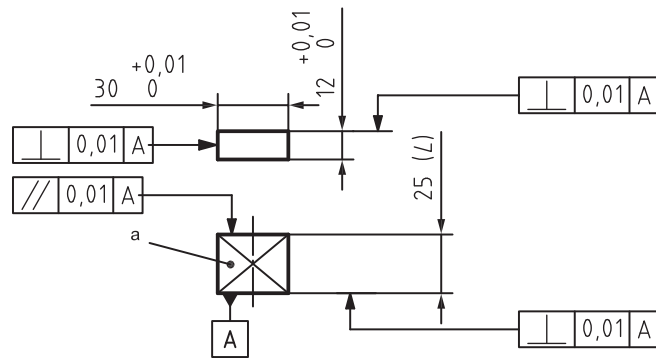
c) Lower punch, $L = H + 35$

Key

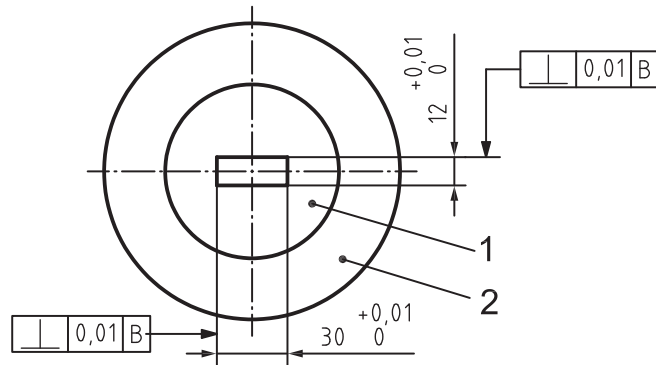
- 1 cemented carbide
- 2 shrink ring
- H height of tool die

Figure 1 — Example of tooling to produce a cylindrical test piece

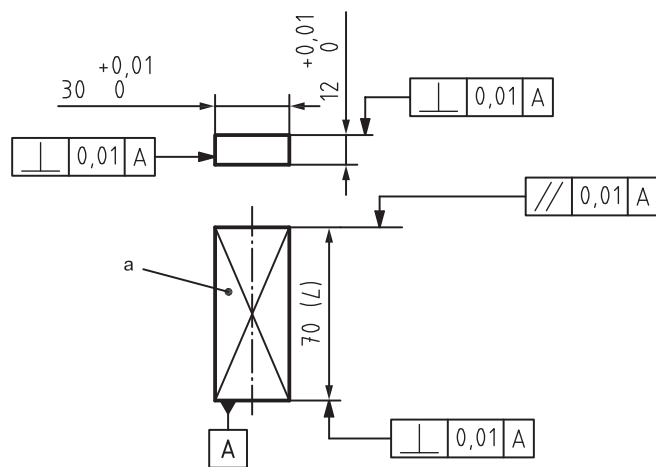
Dimensions in millimetres



a) Upper punch, $L = 25$



b) Die



c) Lower punch, $L = 70$

Key

- 1 cemented carbide
- 2 shrink ring
- a Steel, HRC 60 to 62.

Figure 2 — Example of tooling to produce a rectangular test piece