

SVENSK STANDARD

SS-EN ISO 4126-6:2014



Fastställt/Approved: 2014-06-23
Publicerad/Published: 2014-06-25
Utgåva/Edition: 2
Språk/Language: engelska/English
ICS: 13.240; 23.060.01; 23.060.40; 23.060.99

Rörledningsarmatur – Säkerhetskomponenter till skydd mot otillåten tryckförhöjning – Del 6: Utförande, val och installation av sprängbleck (ISO 4126-6:2014)

Safety devices for protection against excessive pressure – Part 6: Application, selection and installation of bursting disc safety devices (ISO 4126-6:2014)

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-102337>

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.

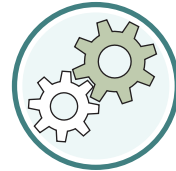
Ta del av det färdiga arbetet

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 4126-6:2014 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 4126-6:2014.

Denna standard ersätter SS-EN ISO 4126-6:2004, utgåva 1.

The European Standard EN ISO 4126-6:2014 has the status of a Swedish Standard. This document contains the official version of EN ISO 4126-6:2014.

This standard supersedes the Swedish Standard SS-EN ISO 4126-6:2004, edition 1.

**Förhållandet till övriga delar under samma huvudtitel - Utdrag ur Förord i ISO 4126-6:2014/
Relations to other parts under the same general title - Extract from the Foreword of
ISO 4126-6:2014**

ISO 4126 consists of the following parts, under the general title *Safety devices for protection against excessive pressure*:

- Part 1: *Safety valves*
- Part 2: *Bursting disc safety devices*
- Part 3: *Safety valves and bursting disc safety devices in combination*
- Part 4: *Pilot operated safety valves*
- Part 5: *Controlled safety pressure relief systems (CSPRS)*
- Part 6: *Application, selection and installation of bursting disc safety devices*
- Part 7: *Common data*
- Part 9: *Application and installation of safety devices excluding stand-alone bursting disc safety devices*
- Part 10: *Sizing of safety valves for gas/liquid two-phase flow*
- Part 11: *Performance testing*¹⁾

Part 7 contains data, which is common to more than one of the parts of ISO 4126 to avoid unnecessary Repetition

1) In development.

© 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.

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), 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 Armatur av Fe-legering, SIS/TK 299.

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 4126-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2014

ICS 13.240

Supersedes EN ISO 4126-6:2003

English Version

**Safety devices for protection against excessive pressure - Part
6: Application, selection and installation of bursting disc safety
devices (ISO 4126-6:2014)**

Dispositifs de sécurité pour protection contre les pressions
excessives - Partie 6: Application, sélection et installation
des dispositifs de sûreté à disque de rupture (ISO 4126-
6:2014)

Sicherheitseinrichtungen gegen unzulässigen Überdruck -
Teil 6: Berstscheibeneinrichtungen; Anwendung, Auswahl
und Einbau (ISO 4126-6:2014)

This European Standard was approved by CEN on 22 May 2014.

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, 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 United Kingdom.



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

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

Contents		Page
Foreword		iv
Introduction		v
1 Scope		1
2 Normative references		1
3 Terms and definitions		1
4 Symbols and units		5
5 Application		6
6 Selection		8
6.1 Selection of bursting disc safety devices		8
6.2 Selection of the performance tolerance		10
7 Installation		12
7.1 General		12
7.2 Location of bursting disc safety devices		12
7.3 Installation of bursting disc safety devices		12
Annex A (informative) Information to be supplied by the purchaser		14
Annex B (informative) Guidelines for determining the replacement period of a bursting disc		16
Annex C (informative) Pressure relief system discharge capacity		18
Annex D (informative) Flow testing of bursting disc safety devices		21
Annex E (informative) Type testing of non-reclosing bursting disc safety devices		35
Annex F (informative) Performance characteristics of bursting disc safety devices		37
Bibliography		39

Foreword

This document (EN ISO 4126-6:2014) has been prepared by Technical Committee ISO/TC 185 “Safety devices for protection against excessive pressure” in collaboration with Technical Committee CEN/TC 69 “Industrial valves” the secretariat of which is held by AFNOR.

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 December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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 4126-6:2003.

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 4126-6:2014 has been approved by CEN as EN ISO 4126-6:2014 without any modification.

Introduction

Safety devices for the protection of pressure equipment against excessive pressure include pressure relief devices such as safety valves and bursting disc safety devices which, dependent upon the application, may be used either as the sole pressure relieving devices or in conjunction with each other.

Operating problems frequently arise due to the use of pressure relieving devices not having been properly selected for the intended service or properly selected but whose performance is adversely affected by improper handling, wrong installation or lack of maintenance, any of which may affect the safety of the pressure equipment being protected.

It is important to consider not only the pressure relief devices but also the whole of the pressure relief system so as not to reduce the relieving capacity below that required or adversely affect the proper operation of the pressure relieving devices.

A bursting disc safety device is a non-reclosing pressure relief device which typically comprises a bursting disc, which is a pressure-containing and pressure-sensitive part designed to open by bursting at a predetermined pressure, and a bursting disc holder. There are many different types of bursting disc safety devices manufactured in corrosion resistant materials, both metallic and non-metallic, to cover a wide range of nominal sizes, burst pressures and temperatures. They are used to protect pressure equipment such as vessels, piping, gas cylinders or other enclosures from excessive pressure and/or excessive vacuum.

This standard covers the important considerations necessary in the application, selection and installation of bursting disc safety devices to give the required protection against excessive pressure and/or excessive vacuum.

Safety devices for protection against excessive pressure —

Part 6:

Application, selection and installation of bursting disc safety devices

1 Scope

This International standard gives guidance on the application, selection and installation of bursting disc safety devices used to protect pressure equipment from excessive pressure and/or excessive vacuum.

[Annex A](#) provides a checklist for the information to be supplied by the purchaser to the manufacturer.

[Annex B](#) gives guidance on the replacement period of a bursting disc.

[Annex C](#) provides guidance for determining the discharge capacity, for single phase fluids, of a pressure relief system that contains a bursting disc safety device.

[Annex D](#) is a non-mandatory procedure for establishing the flow resistance of a burst bursting disc assembly.

[Annex E](#) is a non-mandatory procedure for type testing of bursting disc safety devices.

[Annex F](#) provides typical performance characteristics for various bursting disc safety device types.

The requirements for the manufacture, inspection, testing, marking, certification and packaging of bursting disc safety devices are given in ISO 4126-2.

2 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4126-2, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices*

ISO 4126-3, *Safety devices for protection against excessive pressure — Part 3: Safety valves and bursting disc safety devices in combination*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4126-2 and the following apply.

3.1

bursting disc safety device

non-reclosing pressure relief device actuated by differential pressure and designed to function by the bursting of the bursting disc(s), and which is the complete assembly of installed components including, where appropriate, the bursting disc holder

3.2

bursting disc assembly

complete assembly of components, which are installed in the bursting disc holder to perform the desired function

**3.3
bursting disc**

pressure-containing and pressure-sensitive component of a bursting disc safety device

**3.4
bursting disc holder**

that part of a bursting disc safety device, which retains the bursting disc assembly in position

**3.5
conventional domed bursting disc (also referred to as, forward acting)**

bursting disc which is domed in the direction of the bursting pressure (i.e. where the bursting pressure is applied to the concave side of the bursting disc)

Note 1 to entry: See ISO 4126-2:2003, Figure 1).

**3.6
slotted lined bursting disc**

bursting disc made up of two or more layers, at least one of which is slit or slotted to control the bursting pressure of the bursting disc

**3.7
reverse domed bursting disc (also referred to as, reverse acting)**

bursting disc which is domed against the direction of the bursting pressure (i.e. where the bursting pressure is applied to the convex side of the bursting disc)

Note 1 to entry: See ISO 4126-2:2003, Figure 2).

**3.8
flat bursting disc**

bursting disc having one or more layers which is flat when installed. It may be made of a ductile or brittle material

**3.9
graphite bursting disc**

bursting disc manufactured from graphite, impregnated graphite, flexible graphite or graphite composite and designed to burst due to bending or shearing forces

**3.10
specified bursting pressure**

bursting pressure quoted with a coincident temperature when defining the bursting disc requirements (used in conjunction with a performance tolerance, see [3.14](#))

**3.11
specified maximum bursting pressure**

maximum bursting pressure quoted with the coincident temperature when defining the bursting disc requirements (used in conjunction with specified minimum bursting pressure, see [3.12](#))

**3.12
specified minimum bursting pressure**

minimum bursting pressure quoted with the coincident temperature when defining the bursting disc requirements (used in conjunction with specified maximum bursting pressure, see [3.11](#))

**3.13
coincident temperature**

temperature of the bursting disc associated with a bursting pressure (see [3.10](#), [3.11](#) and [3.12](#)) and which is the expected temperature of the bursting disc when it is required to burst

3.14

performance tolerance

range of pressure between the specified minimum bursting pressure and the specified maximum bursting pressure or the range of pressure in positive and negative percentages or quantities which is related to the specified bursting pressure

3.15

operating pressure

pressure existing at normal operating conditions within the system being protected

3.16

relieving pressure

maximum pressure under discharge conditions in the pressurized system

Note 1 to entry: It can differ from the bursting pressure of the bursting disc.

3.17

relieving temperature

temperature under discharge conditions in the pressurized system

Note 1 to entry: It can differ from the coincident temperature specified for the bursting disc.

3.18

differential back pressure

differential pressure across a bursting disc in the opposite direction to the direction of the bursting pressure, which is the result of pressure in the discharge system from other sources and/or a result of vacuum on the upstream side of the bursting disc

3.19

vent area

cross-section area available for discharge of fluid as calculated by the manufacturer

Note 1 to entry: The calculated vent area should not exceed the cross-sectional area of the upstream piping, A_1 .

3.20

batch

quantity of bursting discs or bursting disc safety devices made as a single group of the same type, size, materials and specified bursting pressure requirements where the bursting discs are manufactured from the same lot of material

3.21

bursting pressure

value of the differential pressure between the upstream side and the downstream side of the bursting disc when it bursts

3.22

stiffening ring

component of a bursting disc assembly used primarily for reinforcing bursting discs

3.23

back pressure support

component of a bursting disc safety device, which prevents damage to the bursting disc due to differential back pressure

Note 1 to entry: A back pressure support, which is intended to prevent damage to the bursting disc when the system pressure falls below atmospheric pressure, is sometimes referred to as a vacuum support.

3.24

coating

layer of metallic or non-metallic material applied to components of a bursting disc safety device by a coating process