

SVENSK STANDARD

SS-EN ISO 22568-3:2019



Fastställt/Approved: 2019-04-25
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 13.340.50

Skyddsskor – Krav och testmetoder för utvärdering av skokomponenter – Del 3: Metalliska spiktrampskydd ISO 22568-3:2019)

Foot and leg protectors – Requirements and test methods for footwear components – Part 3: Metallic perforation resistant inserts (ISO 22568-3:2019)



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 22568-3:2019 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 22568-3:2019.

Denna standard ersätter SS-EN 12568:2010, utgåva 2

The European Standard EN ISO 22568-3:2019 has the status of a Swedish Standard. This document contains the official version of EN ISO 22568-3:2019.

This standard supersedes the SS-EN 12568:2010, edition 2

© 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 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, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Skyddsskor, SIS/TK 397.

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 22568-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2019

ICS 13.340.50

Supersedes EN 12568:2010

English Version

Foot and leg protectors - Requirements and test methods for footwear components - Part 3: Metallic perforation resistant inserts (ISO 22568-3:2019)

Protecteurs du pied et de la jambe - Exigences
et méthodes d'essais pour les composants de
chaussure - Partie 3: Inserts anti-perforation
métalliques (ISO 22568-3:2019)

Fuß- und Beinschutz - Anforderungen und
Prüfverfahren für Schuhkomponenten -
Teil 3: Metallische perforationsbeständige
Einlagen (ISO 22568-3:2019)

This European Standard was approved by CEN on 25 February 2019.

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, Republic of North Macedonia, Romania, Serbia, 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

European foreword	vii
Introduction	viii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements for metallic perforation resistant insert	1
4.1 General	1
4.2 Resistance to nail perforation	2
4.3 Flexing resistance	2
4.4 Corrosion resistance.....	2
5 Test methods for the metallic perforation resistant inserts	3
5.1 Determination of perforation resistance.....	3
5.1.1 Apparatus	3
5.1.2 Test sample	4
5.1.3 Test procedure.....	4
5.1.4 Test report.....	6
5.2 Determination of flexing resistance.....	6
5.2.1 Apparatus	6
5.2.2 Sampling	6
5.2.3 Test procedure.....	6
5.2.4 Results.....	7
5.2.5 Test report.....	8
5.3 Determination of corrosion resistance	8
5.3.1 Preliminary examination	8
5.3.2 Test procedure.....	8
5.3.3 Test report.....	9
6 Marking	9
Bibliography	10

European foreword

This document (EN ISO 22568-3:2019) has been prepared by Technical Committee ISO/TC 94 "Personal safety -- Personal protective equipment" in collaboration with Technical Committee CEN/TC 161 "Foot and leg protectors" the secretariat of which is held by BSI.

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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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.

This document supersedes EN 12568:2010.

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

Endorsement notice

The text of ISO 22568-3:2019 has been approved by CEN as EN ISO 22568-3:2019 without any modification.

Introduction

ISO 20345, ISO 20346 and ISO 20347 are related to safety, protective and occupational footwear which define the performance and required properties of the footwear. On introducing these standards all national standards relating to metallic perforation resistant inserts were withdrawn leaving the manufacturers of these items with no means of demonstrating the performance of their products. This document has been prepared to allow manufacturers to demonstrate the performance level of the metallic perforation resistant inserts before being inserted into the footwear.

Metallic perforation resistant inserts and materials complying with the requirements of this document are suitable components of “PPE footwear”.

Foot and leg protectors — Requirements and test methods for footwear components —

Part 3: Metallic perforation resistant inserts

1 Scope

This document specifies requirements and test methods for the metallic perforation resistant inserts with resistance against mechanical perforation, intended to function as components of PPE footwear (e.g. as described by ISO 20345, ISO 20346 and ISO 20347).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 20345, *Personal protective equipment — Safety footwear*

ISO 20346, *Personal protective equipment — Protective footwear*

ISO 20347, *Personal protective equipment — Occupational footwear*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20345, ISO 20346 and ISO 20347 and the following apply.

3.1

metallic perforation resistant insert

metallic footwear component placed (or intended to be placed) in the sole complex in order to provide protection against mechanical perforation

4 Requirements for metallic perforation resistant insert

4.1 General

Perforation resistant material shall be tested in accordance with this document, even in an unshaped status, if it is intended to be cut and/or shaped by the footwear or sole manufacturer. When shaped inserts are tested in accordance with this document, their suitability to fit into footwear is not assured, because the dimensional conformity to the footwear depends on the individual shape of each model of footwear.

For each of the required measurements performed in accordance with this document, a corresponding estimate of the uncertainty of measurement should be evaluated. One of the following approaches shall be used:

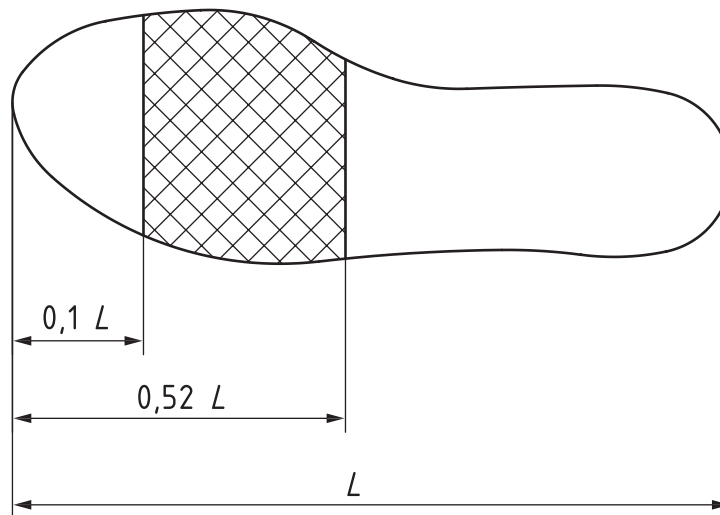
- statistical method, e.g. that given in ISO 5725-2[1];
- mathematical method, e.g. that given in ISO/IEC Guide 98-3[2];
- uncertainty and conformity assessment as given in ISO/IEC Guide 98-4[3];
- JCGM 100:2008[4].

Table 1 — Summary of requirements and number of samples

Property	Subclause	Number of samples
Resistance to nail perforation	4.2.	Metallic material: 1 sample Ready -shaped inserts: 1 sample
Flexing resistance	4.3	Metallic plate: 1 sample Ready -shaped inserts: 2 different sizes
Corrosion resistance	4.4	Metallic plate: 1 sample Ready -shaped inserts: 1 sample

NOTE 2 For details, see [4.2](#) to [4.4](#).

Metal perforation resistant inserts can be flat or bended in order to better fit the individual boot design. For the needs of their positioning in the footwear, the presence of up to 3 holes in one insert is allowed, each of them with a diameter of not more than 3 mm. However, no holes are allowed in the area between 10 % and 52 % of the overall length of the insert, measured from its top (see [Figure 1](#)).



Key

L overall length of the metal insert

Figure 1 — Designation of the area of metal perforation resistant inserts in which no holes are permitted

4.2 Resistance to nail perforation

When the metallic perforation resistant inserts are tested in accordance with the applicable method described in [5.1](#), all the results reported as described in [5.1.3](#) shall be equal or greater than 1 100 N.

4.3 Flexing resistance

When tested in accordance with the method described in [5.2](#), the metallic perforation resistant inserts shall exhibit no visible signs of cracking, disintegration or delamination after having been subjected to 1×10^6 (one million) flexion cycles.

4.4 Corrosion resistance

Both before and after testing in accordance with the method described in [5.3](#), the metallic perforation resistant inserts shall exhibit not more than three areas of corrosion, none of which shall measure more than 2 mm in any direction.

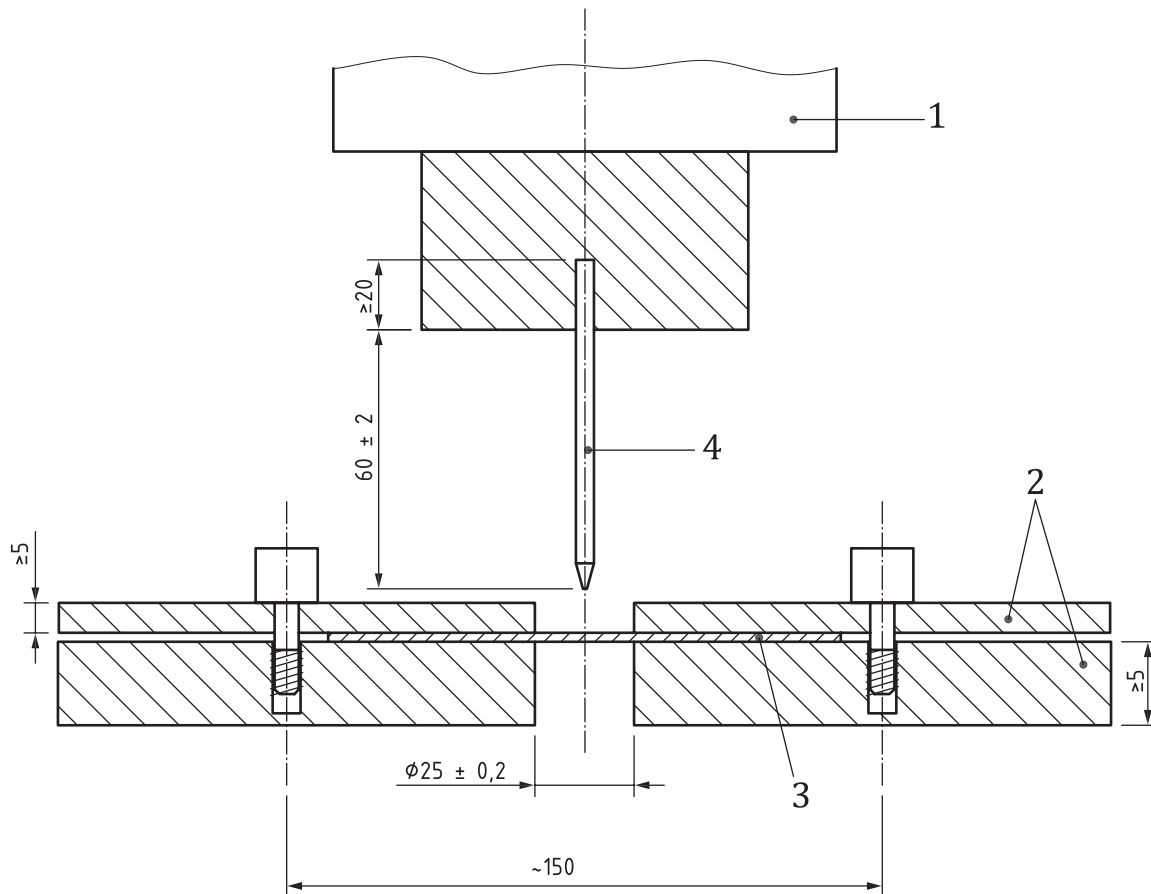
5 Test methods for the metallic perforation resistant inserts

5.1 Determination of perforation resistance

5.1.1 Apparatus

5.1.1.1 Test equipment, capable of measuring a compressive force up to at least 2 000 N, fitted with a pressure plate (5.1.1.2), in which a test nail (5.1.1.3) is fixed, and a parallel plate with a circular opening of diameter $(25 \pm 0,2)$ mm. The axes of this opening and the test nail shall be coincident (see Figure 2).

Dimensions in millimetres



Key

- | | | | |
|---|-----------------|---|------------|
| 1 | pressure platen | 3 | test piece |
| 2 | plates | 4 | nail |

Figure 2 — Apparatus for perforation resistance test of metallic perforation resistant insert (example)