



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 20349-1:2017&LC:2018

Personal protective equipment - Footwear protecting against risks in foundries and welding - Part 1: Requirements and test methods for protection against risks in foundries (ISO 20349-1:2017)

**I.S. EN ISO 20349-1:2017&LC:2018**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

*Published:*

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

2018-03-16

ICS number:

13.340.50

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

## National Foreword

I.S. EN ISO 20349-1:2017&LC:2018 is the adopted Irish version of the European Document EN ISO 20349-1:2017, Personal protective equipment - Footwear protecting against risks in foundries and welding - Part 1: Requirements and test methods for protection against risks in foundries (ISO 20349-1:2017)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

**Compliance with this document does not of itself confer immunity from legal obligations.**

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

This page is intentionally left blank

## Correction Notice

**Reference:** EN ISO 20349-1:2017

**Title:** Personal protective equipment - Footwear protecting against risks in foundries and welding - Part 1: Requirements and test methods for protection against risks in foundries (ISO 20349-1:2017)

**Work Item:** 00161088

Brussels, 2018-02-07

**Please include the following minor editorial correction(s) in the document related to:**

the following language version(s) :

- ☒ English
- ☒ French
- ☐ German

for the following procedure :

- ☐ PQ/UQ
- ☐ Enquiry
- ☐ 2nd Enquiry
- ☐ Parallel Enquiry
- ☐ 2<sup>nd</sup> Parallel Enquiry
- ☐ Formal Vote
- ☐ 2<sup>nd</sup> Formal Vote
- ☐ Parallel Formal Vote
- ☐ 2<sup>nd</sup> Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2<sup>nd</sup> TC Approval
- ☐ Publication
- ☒ Parallel Publication

---

It has been brought to our attention that this document, issued on 2017-08-23, requires modification.

DOW has been corrected in the forewords, "August 2019".

Please find enclosed the updated English and French versions.

We apologize for any inconvenience this may cause.

## Correction Notice

**Reference:** EN ISO 20349-1:2017

**Title:** Personal protective equipment - Footwear protecting against risks in foundries and welding - Part 1: Requirements and test methods for protection against risks in foundries (ISO 20349-1:2017)

**Work Item:** 00161088

Brussels, 2017-09-27

**Please include the following minor editorial correction(s) in the document related to:**

the following language version(s) :

- ☒ English
- ☐ French
- ☐ German

for the following procedure :

- ☐ PQ/UQ
- ☐ Enquiry
- ☐ 2nd Enquiry
- ☐ Parallel Enquiry
- ☐ 2<sup>nd</sup> Parallel Enquiry
- ☐ Formal Vote
- ☐ 2<sup>nd</sup> Formal Vote
- ☐ Parallel Formal Vote
- ☐ 2<sup>nd</sup> Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2<sup>nd</sup> TC Approval
- ☐ Publication
- ☒ Parallel Publication

---

It has been brought to our attention that this document, issued on 2017-08-23, requires modification.

Modification made to Table ZA.1

Please find enclosed the updated English version.

We apologise for any inconvenience this may cause.

**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN ISO 20349-1**

August 2017

ICS 13.340.50

Supersedes EN ISO 20349:2010

English Version

**Personal protective equipment - Footwear protecting  
against risks in foundries and welding - Part 1:  
Requirements and test methods for protection against  
risks in foundries (ISO 20349-1:2017)**

Équipement de protection individuelle - Chaussures de protection contre les risques dans les fonderies et lors d'opérations de soudage - Partie 1: Exigences et méthode d'essai pour la protection contre les risques dans les fonderies (ISO 20349-1:2017)

Persönliche Schutzausrüstung - Schuhe zum Schutz gegen Risiken in Gießereien und beim Schweißen - Teil 1: Anforderungen und Prüfverfahren zum Schutz gegen Risiken in Gießereien (ISO 20349-1:2017)

This European Standard was approved by CEN on 12 June 2017.

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, 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: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 89/686/EEC Personal Protective Equipment aimed to be covered.....</b>	<b>4</b>



## **European foreword**

This document (EN ISO 20349-1:2017) has been prepared by Technical Committee CEN/TC 161 “Foot and leg protectors” the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 94 “Personal safety - Protective clothing and equipment”.

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 2018, and conflicting national standards shall be withdrawn at the latest by August 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 ISO 20349:2010.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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 20349-1:2017 has been approved by CEN as EN ISO 20349-1:2017 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the essential requirements of EU Directive 89/686/EEC Personal Protective Equipment aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/031 Personal protective equipment to provide one voluntary means of conforming to essential requirements of the New Approach Directive 89/686/EEC Personal Protective Equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive 89/686/EEC, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive 89/686/EEC, and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and EU Directive 89/686/EEC Personal Protective Equipment**

Essential Requirements of Directive 89/686/EEC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.1.1 Ergonomics	7.1	EN ISO 20345:2011, 5.3.4
1.2 Innocuousness of PPE	7.9	
1.4 Information supplied by the manufacturer	9	
2.2 PPE enclosing the parts of the body to be protected		EN ISO 20345:2011, 5.4.6 and 5.5.3
2.4 PPE subject to ageing	7.3, 7.4, 7.5, 7.6, and 7.7	EN ISO 20345:2011, 5.3.2.5, 6.4.1 and 6.2.3.2
2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	8	
3.1.1 Impact caused by falling or ejected objects and collisions of parts of the body with an obstacle		EN ISO 20345:2011, 5.3.2, 6.2.4, 6.2.6 and 6.2.7
3.1.2.1 Prevention of falls due to slipping		EN ISO 20345:2011, 5.3.5
3.2 Protection against (static) compression of part of the body		EN ISO 20345:2011, 5.3.2.4, 6.2.1 and 6.2.4
3.3 Protection against physical injury (abrasion, perforation, cuts, bites)		EN ISO 20345:2011, 6.2.1 and 6.2.8
3.6 Protection against heat and/or fire	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7 and 7.8	EN ISO 20345:2011, 6.4.1
3.7 Protection against cold		EN ISO 20345:2011, 6.2.3.2
3.8 Protection against electric		EN ISO 20345:2011, 6.2.2.3

shock		
-------	--	--

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

This page is intentionally left blank

# INTERNATIONAL STANDARD

**ISO  
20349-1**

First edition  
2017-07

---

---

## **Personal protective equipment — Footwear protecting against risks in foundries and welding —**

### **Part 1: Requirements and test methods for protection against risks in foundries**

*Équipement de protection individuelle — Chaussures de protection  
contre les risques dans les fonderies et lors d'opérations de soudage —*

*Partie 1: Exigences et méthode d'essai pour la protection contre les  
risques dans les fonderies*



Reference number  
ISO 20349-1:2017(E)

© ISO 2017

## **ISO 20349-1:2017(E)**



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Classification of footwear</b> .....	<b>2</b>
<b>5 Sampling and conditioning</b> .....	<b>2</b>
<b>6 Requirements</b> .....	<b>2</b>
<b>7 Specific requirements</b> .....	<b>4</b>
7.1 Height of upper.....	4
7.2 Footwear design.....	4
7.3 Resistance to the effects of molten metal.....	5
7.4 Resistance of upper to contact heat transmission.....	5
7.5 Burning behaviour.....	5
7.6 Heat insulation of sole complex.....	5
7.7 Surface shrinkage of leather.....	5
7.8 Footwear removal time.....	7
7.9 Innocuousness.....	7
<b>8 Marking</b> .....	<b>7</b>
<b>9 Information to be supplied by the manufacturer</b> .....	<b>8</b>
9.1 General.....	8
9.2 Information regarding perforation resistant insert.....	9
9.3 Electrical properties.....	10
9.3.1 Antistatic footwear.....	10
9.3.2 Electrically insulating footwear.....	10
9.4 Insocks.....	10
<b>Annex A (normative) Test method for the resistance of footwear to the effects of large quantities of molten metal</b> .....	<b>11</b>
<b>Bibliography</b> .....	<b>15</b>

## ISO 20349-1:2017(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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by the European Committee Standardization (CEN) Technical Committee CEN/TC 161, *Foot and leg protectors in equipment*, in collaboration with ISO Technical Committee TC 94 *Personal safety — Protective clothing and equipment*, Subcommittee SC 3, *Foot protection*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 20349-1 cancels and replaces ISO 20349:2010, which has been technically revised.

A list of all parts in the ISO 20349 series can be found on the ISO website.



# Personal protective equipment — Footwear protecting against risks in foundries and welding —

## Part 1:

## Requirements and test methods for protection against risks in foundries

**WARNING** — This document calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

### 1 Scope

This document specifies requirements and test methods for footwear protecting users against risks, such as those encountered in foundries.

Footwear complying with this document also offers other protection as defined in ISO 20345.

**NOTE** Gaiters over boot and clothing intended to provide protection to the feet and legs against molten metal are addressed by ISO 11612.

### 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 17227:2002, *Leather — Physical and mechanical tests — Determination of dry heat resistance of leather*

ISO 20344:2011, *Personal protective equipment — Test methods for footwear*

ISO 20345:2011, *Personal protective equipment — Safety footwear*

EN 702:1995, *Protective clothing — Protection against heat and flame — Test method — Determination of the contact heat transmission through protective clothing or its materials*

EN 12477, *Protective gloves for welders*

EN 15090:2012, *Foot wear for firefighters*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-