NSAI Standards

Irish Standard
I.S. EN ISO 20345:2022

Personal protective equipment - Safety footwear (ISO 20345:2021)

I.S. EN ISO 20345:2022

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 20345:2022 is the adopted Irish version of the European Document EN ISO 20345:2022, Personal protective equipment - Safety footwear (ISO 20345:2021)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20345

March 2022

ICS 13.340.50

Supersedes EN ISO 20345:2011

English Version

Personal protective equipment - Safety footwear (ISO 20345:2021)

Équipement de protection individuelle - Chaussures de sécurité (ISO 20345:2021)

Persönliche Schutzausrüstung - Sicherheitsschuhe (ISO 20345:2021)

This European Standard was approved by CEN on 30 December 2021.

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

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Ref. No. EN ISO 20345:2022 E

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European foreword

This document (EN ISO 20345:2022) 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 September 2022, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 20345:2011.

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

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

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 20345:2021 has been approved by CEN as EN ISO 20345:2022 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of PPE Regulation (EU) 2016/425 aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/571 to provide one voluntary means of conforming to essential requirements of REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

Once this standard is cited in the Official Journal of the European Union under that REGULATION (EU) 2016/425, 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 Regulation, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex II of REGULATION (EU) 2016/425

ESSENTIAL HEALTH AND SAFETY REQUIREMENTS of REGULATION (EU) 2016/425		Clause(s)/sub-clause(s) of this EN ISO	Remarks/Notes
General requirements applicable to all PPE			
1.1.1	Ergonomics	5.3.4	
1.1.2.1	Optimum level of protection	5.3.4	
1.2.1	Absence of inherent risks and other nuisance factors	5.3.4	
1.2.1.1	Suitable constituent materials	5.3.6	
1.2.1.2	Satisfactory surface condition of all PPE parts in contact with the user	5.3.4	
1.2.1.3	Maximum permissible user impediment	5.3.4	
1.3.1	Adaptation of PPE to user morphology	5.3.4	
1.3.2	Lightness and strength	5.3.1.2, 5.4.3, 5.4.4, 5.4.5, 5.5.2, 5.6.2, 5.8.3, 5.8.4, 5.8.6, 6.2.7, 6.2.8	
1.4	Manufacturer's instructions and information	Clause 8	
2.2	PPE enclosing the parts of the body to be protected	5.4.6, 5.5.4, 5.7.3	
2.4	PPE subject to ageing	Clause 7 and Clause 8	
2.6	PPE for use in potentially explosive Atmospheres	6.2.2.1; 6.2.2.2	
2.12	PPE bearing one or more	6.1 Table 16, Clause 7	

	identification markings or indicators directly or indirectly relating to health and safety		
2.14	Multi-risk PPE	5.3.5 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.7, 6.2.8, 6.2.10, 6.4.1, 6.4.2	
3.1.1	Impact caused by falling or ejected objects and collisions of parts of the body with an obstacle	5.3.2.6, 6.2.6, 6.2.7	
3.1.2.1	Prevention of falls due to slipping	5.3.5, 5.8.2, 6.4.3, 6.2.10,	
3.2	Protection against static compression of part of the body	5.3.2.7, 6.2.4	
3.3	Protection against mechanical injuries	5.5.2, 5.8.3, 6.2.1, 6.2.8, 6.2.9	
3.6	Protection against heat and/or fire	6.2.3.1; 6.4.1	
3.7	Protection against cold	6.2.3.2	

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.

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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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

ISO 20345 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 161, *Foot and leg protectors*, in collaboration with Technical Committee ISO/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 third edition cancels and replaces the second edition (ISO 20345:2011), which has been technically revised. The main changes compared to the previous edition are as follows:

— revision of the terms and definitions in Clause 3;

— Figure 1 to Figure 4 revised;

— Tables 1, 2 and 3 revised;

— heel area defined (5.2.3);

— toe protection, depending on ISO 22568-1 and ISO 22568-2, exchanging EN 12568:2010;

— requirement on slip resistance revised (5.3.5 and 6.2.10); marking “SRA, SRB and SRC” deleted; marking “SR” and “Ø” introduced;

— pH value and chromium VI tests added in 5.3.6; former separate clauses under upper, lining, tongue and insole/insock deleted;

— requirement for seam strength of hybrid footwear added (5.3.7);

— requirement for upper materials not fulfilling WVP explained (5.4.6);

— abrasion of insoles revised (5.7.4);

— outsole requirements revised (5.8);

— outsole thickness revised (5.8.2.1);

— flexing resistance of outsole clarified (5.8.5);

— perforation resistant insert, depending on ISO 22568-3 and ISO 22568-4, exchanging EN 12568:2010;

— tolerance added (6.2.3.1);

— former Annex A Hybrid footwear included in the general text (Table 2, 5.4.1.2);

— optional requirement of metatarsal protection revised (6.2.6);

— optional requirement on ankle protection clarified (6.2.7);

— optional requirement for “SC” scuff cap abrasion added (6.2.9);

— water penetration and absorption, symbol “WRU” deleted, symbol “WPA” introduced;

— optional requirement for “LG” Ladder grip of outsoles added (6.4.3);

— marking revised (Table 16 and Table 20);

— two new categories added, S6 and S7 (Table 20);

— information on obsolescence date added (8.5);

— Annex A with requirements for customized safety footwear added;

— Annex B added;

— Annex C added;

— requirement for electrically insulating footwear (EN 50321) deleted.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Personal protective equipment — Safety footwear

1 Scope

This document specifies basic and additional (optional) requirements for safety footwear used for general purpose. It includes, for example, mechanical risks, slip resistance, thermal risks, ergonomic behaviour. It also specifies requirements for safety footwear equipped with customized insocks, customized safety footwear or individual manufactured customized safety footwear. This standard does not cover the property of high visibility because of interaction with the clothing (e.g. trousers cover the footwear) and work area conditions (e.g. dirt, mud).

Special risks are covered by complementary job-related standards (e.g. footwear for firefighters, electrical insulating footwear, protection against chain saw injuries, protection against chemicals and molten metal splash, protection for motorcycle riders).

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 20344:2021, *Personal protective equipment — Test methods for footwear*

ISO 22568-1:2019, *Foot and leg protectors — Requirements and test methods for footwear components — Part 1: Metallic toecaps*

ISO 22568-2:2019, *Foot and leg protectors — Requirements and test methods for footwear component — Part 2: Non-metallic toecaps*

EN 13832-3:2018, *Footwear protecting against chemicals — Part 3: Requirements for footwear highly resistant to chemicals under laboratory conditions*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

Note 1 to entry The component parts of footwear are illustrated in Figure 1, Figure 2 and Figure 3.

Note 2 to entry Further terms and definitions can be found in ISO 19952[4].

3.1
safety footwear
footwear incorporating safety features to protect the wearer from injuries that could arise through accidents

Note 1 to entry: Items of safety footwear are fitted with toecaps designed to give protection against impact of at least 200 J and against compression at least 15 kN.