



SLOVENSKI STANDARD
oSIST prEN 15090:2024
01-oktober-2024

Obutev za gasilce

Footwear for firefighters

Schuhe für die Feuerwehr

Chaussures pour pompiers

Ta slovenski standard je istoveten z: prEN 15090

ICS:

13.220.10 Gašenje požara Fire-fighting
13.340.50 Varovanje nog in stopal Leg and foot protection

oSIST prEN 15090:2024

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 15090

July 2024

ICS 13.340.50

Will supersede EN 15090:2012

English Version

Footwear for firefighters

Chaussures pour pompiers

Schuhe für die Feuerwehr

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 161.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard. 15090:2024

<https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024>



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 Classification, design, and type	6
4.1 Classification.....	6
4.2 Design.....	7
4.3 Type.....	7
5 General testing parameters.....	7
6 Requirements.....	8
6.1 Types and classifications.....	8
6.2 General requirements	8
6.3 Thermal behaviour.....	13
6.3.1 Insulation against heat.....	13
6.3.2 Radiant heat	13
6.3.3 Flame resistance.....	13
6.4 Compression resistance of the toe puff.....	13
6.5 Resistance to chemicals.....	14
6.5.1 General.....	14
6.5.2 Degradation.....	14
6.5.3 Permeation.....	14
6.6 Electrically insulating footwear.....	15
6.7 Outsole	15
6.7.1 Cleat design	15
6.7.2 Cleat height.....	15
6.7.3 Waist area	15
7 Test methods	16
7.1 Insulation against heat of sole complex.....	16
7.2 Radiant heat	16
7.3 Flame resistance.....	16
7.4 Compression resistance of the toe puff.....	19
8 Marking.....	19
9 Manufacturer's instructions and information.....	20
9.1 General.....	20
Annex A (normative) Customized footwear for firefighters (firefighter footwear adapted to fit an individual user)	22
A.1 General.....	22
A.2 Basic requirements	22
A.3 Marking.....	25

A.4	Manufacturer's instructions and information	25
Annex B	(informative) Example of guidelines and considerations for performing a risk assessment.....	26
B.1	General	26
B.2	General approach for conducting a risk assessment.....	26
B.3	Recommended factors for identifying and evaluating fire fighter risks	27
B.4	Description of the Types of footwear for firefighters.....	29
Annex C	(normative) Assessment of the footwear by the laboratory during testing of thermal behaviour	30
C.1	General	30
C.2	Criteria for the assessment of the state of footwear	30
Annex D	(informative) Assessment of the footwear by the wearer.....	32
D.1	General	32
D.2	Criteria for the assessment of the state of footwear	32
Annex E	(informative) Contamination during use.....	34
E.1	General	34
E.2	Contamination	34
E.3	Cleaning.....	34
E.4	Other actions to reduce human exposure.....	34
Annex ZA	(informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 aimed to be covered	36
Bibliography	39

<https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024>

FprEN 15090:2024 (E)

European foreword

This document (prEN 15090:2024) has been prepared by Technical Committee CEN/TC 161 “Foot and leg protectors”, the secretariat of which is held by BSI.

This document is currently submitted to CEN Enquiry.

This document will supersede EN 15090:2012.

prEN 15090:2023 includes the following significant technical changes with respect to EN 15090:2012:

- a) General testing parameters revised, Clause 5;
- b) Table 4 revised: requirements re-ordered, innocuousness reference added, insole/insocks/footbeds/seat socks reference changed to Table 3 of EN ISO 20345:2022;
- c) Table 5 insole/insocks/footbeds/seat socks deleted;
- d) Tolerances added, new Table 5;
- e) Chemical resistance, Table 8 revised;
- f) Outsole requirements revised, Clause 6.7 and Figure 1;
- g) Radiant heat revised, Clause 7.2;
- h) Flame resistance revised, Clause 7.3;
- i) Marking revised, Clause 8;
- j) Manufacturer’s instruction and information revised, Clause 9;
- k) Annex A (normative) Customized footwear for firefighters added.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Introduction

The purpose of this document is to provide minimum performance requirements and test methods for footwear for firefighters which is intended for use for firefighting and associated activities. A risk assessment should be used to determine whether the footwear covered by this document is suitable for the intended use for the expected exposure. Firefighters should be trained in the use, care and maintenance of the footwear covered by this document, including an understanding of its limitations.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[oSIST prEN 15090:2024](https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024)

<https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024>

FprEN 15090:2024 (E)

1 Scope

This document specifies minimum requirements and test methods for the performance of three types (see 4.3) of footwear for use by firefighters for fire suppression, general-purpose rescue, fire rescue and hazardous materials emergencies. It also specifies requirements for footwear for firefighters equipped with customized insoles and customized footwear for firefighters. This document does not cover the property of high visibility because of interaction with the clothing (e.g. trousers cover the footwear and vice versa) and work area conditions (e.g. dirt, mud).

Special risks are covered by complementary job-related standards (e.g. electrically insulating footwear, protection against chain saw injuries, protection against molten metal splash).

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.

prEN 13832-1:2024, *Footwear protecting against chemicals — Part 1: Terminology and test methods*

prEN 13832-3:2024, *Footwear protecting against chemicals — Part 3: Requirements for prolonged contact with chemicals*

EN 50321-1:2018, *Live working — Footwear for electrical protection — Insulating footwear and overboots*

EN ISO 6942:2022, *Protective clothing — Protection against heat and fire — Method of test: Evaluation of materials and material assemblies when exposed to a source of radiant heat (ISO 6942:2022)*

EN ISO 15025:2016, *Protective clothing — Protection against flame — Method of test for limited flame spread (ISO 15025:2016)*

EN ISO 20344:2021,¹ *Personal protective equipment — Test methods for footwear (ISO 20344:2021)*

EN ISO 20345:2022,² *Personal protective equipment — Safety footwear (ISO 20345:2021)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 20345:2022 apply.

ISO and IEC maintain terminology 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/>

4 Classification, design, and type

4.1 Classification

Footwear for firefighters shall be classified in accordance with Table 1.

¹ As impacted by EN ISO 20344:2021/A1:2024.

² As impacted by EN ISO 20345:2022/A1:2024.

Table 1 — Classification of footwear

Classification	Description
Class I	Footwear made from leather and other materials, excluding all-rubber or all-polymeric footwear
Class II	All-polymeric (i.e. entirely moulded) including all-rubber (i.e. entirely vulcanized) footwear

4.2 Design

Footwear for firefighters shall conform to one of the designs B to E of Figure 4 of EN ISO 20345:2022 depending on their type (see Table 4 of this document).

4.3 Type

A distinction is made between three types of firefighter footwear featuring the following main differences:

- Type 1: Outdoor and rescue interventions;
- Type 2: All fire suppression including wildland firefighting; with protection against perforation and toe protection;
- Type 3: All fire suppression including wildland firefighting ; with protection against perforation, toe protection, and protection against chemical hazards.

5 General testing parameters

The requirements of Table 2 of this document and EN ISO 20344:2021, Clause 4 apply.

Table 2 — Minimum number of samples and test pieces

Property to be determined	Clause of this document	Number of samples	Number of test pieces from each sample	Test only on the final footwear
Insulation against heat	6.3.1	2 samples in different sizes	see 7.1	Yes
Radiant heat	6.3.2	1 pair	See 7.2	No
Flame resistance	6.3.3	1 pair	See 7.3	Yes
Compression resistance of footwear toe puff	6.4	1 pair from each of three sizes	1 pair	Yes
Zipper puller attachment strength	6.8.2	3 zippers	See 7.5.1.3	No
Zipper lateral strength	6.8.3	3 zippers	See 7.5.2.4	No

FprEN 15090:2024 (E)**6 Requirements****6.1 Types and classifications**

The permitted combinations of types of footwear for firefighters (see 4.3) and classes I and II (see 4.1) shall be as given in Table 3. As specified in 4.2, design A shall not be used.

Table 3 — Relationship between types of footwear and classes of Table 1

Types of footwear	Class I	Class II
1	Possible	Possible
2	Possible	Possible
3	Not possible	Possible

NOTE Type 3 footwear for firefighters are suitable for use with chemical protective clothing in accordance with EN 943-2:2019 [7], where appropriate.

6.2 General requirements

Footwear for firefighters shall conform to the requirements specified in Table 4. Footwear for firefighter's equipped with customized insoles shall fulfil in addition the requirements of Annex A of this document.

iTech Standards
(<https://standards.iteh.ai>)
Document Preview

[oSIST prEN 15090:2024](https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024)

<https://standards.iteh.ai/catalog/standards/sist/c2903dbb-d8fb-4f92-89b8-f05635adfd12/osist-pren-15090-2024>

Table 4 — General requirements

	Requirements	Reference		Type 1		Type 2		Type 3	Marking symbol
		EN ISO 20345:2022	EN 15090:20xx	Class		Class		Class	
				I	II	I	II	II	
Whole footwear	General								
	Type and classifications		4.1 and 4.3	X	X	X	X	X	
	Specific ergonomic features	5.3.4		X	X	X	X	X	
	Leak proofness	5.3.3			X		X	X	
	Water resistance	6.2.5		X		X			
	Slip resistance "Not tested" ^a ceramic tile floor with NaLS ^a	5.3.5		X	X	X	X	X	∅ No additional marking
	Slip resistance ceramic tile floor with glycerine	6.2.10.1		*	*	*	*	*	SR
	Innocuousness	5.3.6		X	X	X	X	X	
	Energy absorption of seat region	6.2.4		X	X	X	X	X	
	Metatarsal protection	6.2.6		*	*	*	*	*	M
	Ankle protection	6.2.7		*	*	*	*	*	AN
	Cut resistance	6.2.8		*	*	*	*	*	CR
	Scuff cap	6.2.9		*	*	*	*	*	SC
	Design								
	Design B Figure 4 of EN ISO 20345:2022	5.2.2		X	X				
	Design C or D Figure 4 of EN ISO 20345:2022	5.2.2		X	X	X	X	X	
	Design E Figure 4 of EN ISO 20345:2022	5.2.2					X	X	
	Height of upper	5.2.1		X	X	X	X	X	
	Constructional performance								
	Construction	5.3.1.1		X		X			

FprEN 15090:2024 (E)

Requirements	Reference		Type 1		Type 2		Type 3	Marking symbol
	EN ISO 20345:2022	EN 15090:20xx	Class		Class		Class	
			I	II	I	II	II	
Upper/outsole bond strength	5.3.1.2		X		X			
Perforation resistance								
Perforation resistance (metal insert type P) ^b Perforation resistance (non-metal insert) Type PL ^b Type PS ^b	6.2.1		0	0	X	X	X	P PL PS
Toe protection								
General	5.3.2.1		0	0	X	X	X	T (only for type 1)
Internal length of toe caps	5.3.2.2		0	0	X	X	X	
Width of toe cap flange	5.3.2.3		0	0	X	X	X	
Corrosion resistance of metallic toe caps	5.3.2.4		0	0	X	X	X	
Behaviour of toe caps (thermal and chemical)	5.3.2.5		0	0	X	X	X	
Impact resistance	5.3.2.6		0	0	X	X	X	
Compression resistance	5.3.2.7		0	0	X	X	X	R (only for Type 1)
Compression resistance of toe puff		6.4	0	0				
Electrical properties								
Electrically insulating footwear ^a		6.6.	X	X	X	X	X	See EN 50321-1:2018
Antistatic footwear ^a	6.2.2.2							A
Thermal behaviour								
Insulation against heat		6.3.1	At least HI ₁	At least HI ₁	At least HI ₂	At least HI ₂	At least HI ₂	HI ₁ , HI ₂ or HI ₃
Radiant heat		6.3.2	X	X	X	X	X	