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Voorbeeld  
Preview

EUROPEAN STANDARD  
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**DRAFT**  
**prEN 13832-3**

July 2017

ICS 13.340.50

Will supersede EN 13832-3:2006

English Version

## Footwear protecting against chemicals - Part 3: Requirements for prolonged contact with chemicals

Chaussure protégeant contre les produits chimiques -  
Partie 3 : Exigences pour les contacts prolongés avec  
les produits chimiques

Schuhe zum Schutz gegen Chemikalien - Teil 3:  
Anforderungen für anhaltenden Kontakt mit  
Chemikalien

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## European foreword

This document (prEN 13832-3:2017) 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 the CEN Enquiry.

This document will supersede EN 13832-3:2006.

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.

prEN 13832:2017, *Footwear protecting against chemicals*, is published in three parts:

- Part 1: *Terminology and test methods*
- Part 2: *Requirements for limited contact with chemicals*
- Part 3: *Requirements for prolonged contact with chemicals*

This standard is intended for use in conjunction with EN ISO 20345:2011, EN ISO 20346:2014 and EN ISO 20347:2012.

Preview  
prEN 13832-3

## prEN 13832-3:2017 (E)

### 1 Scope

This European Standard specifies requirements for footwear constructed to be resistant to prolonged contact with specific chemicals.

The following risks are covered, degradation by chemical and permeation of chemicals.

### 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.

EN ISO 868:2003, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

ISO 7000:2014, *Graphical symbols for use on equipment - Index and synopsis*

EN ISO 20344:2011, *Personal protective equipment - Test methods for footwear (ISO 20344:2011)*

prEN 13832-1:2017, *Footwear protecting against chemicals - Part 1: Terminology and test methods*

EN ISO 20345:2011, *Personal protective equipment - Safety footwear (ISO 20345:2011)*

EN ISO 20346:2014, *Personal protective equipment - Protective footwear (ISO 20346:2014)*

EN ISO 20347:2012, *Personal protective equipment - Occupational footwear (ISO 20347:2012)*

EN 50321:1999, *Electrically insulating footwear for working on low voltage installations*

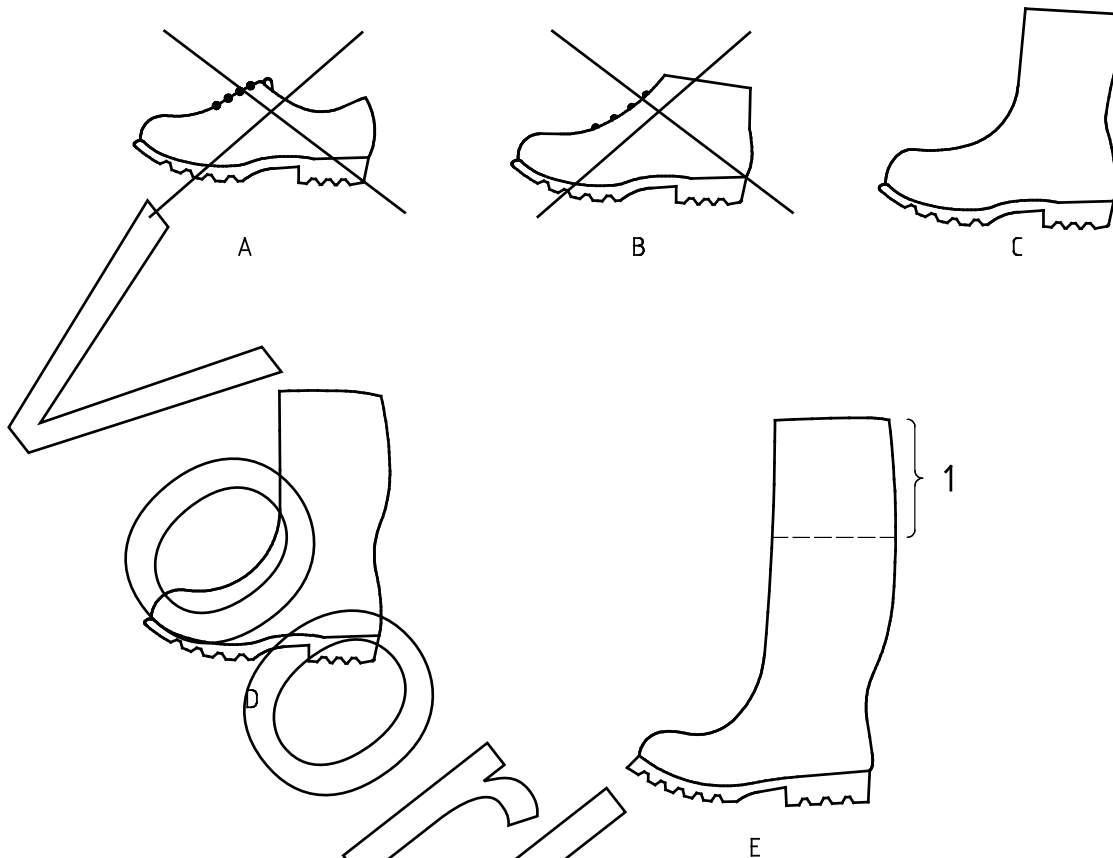
### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 13832-1:2017, EN ISO 20345:2011 and the following apply.

**3.1 footwear for prolonged contact with chemicals**  
footwear designed and manufactured to protect the wearer from contact with chemicals. The contact can be continuous or intermittent. Prolonged means that it can be more than one hour in permanent contact

### 4 Design

For footwear for prolonged contact with chemicals, only designs C, D or E in Figure 1 shall be used.



**Key**

1 Variable extension that can be adapted to the wearer

- A Low shoe
- B Ankle boot
- C Half knee boot
- D Knee height boot
- E Thigh boot

NOTE Design E is a knee-height boot (design D) equipped with a thin impermeable material that extends the upper and that can be cut to adapt the boot to the wearer.

**Figure 1 — Designs of footwear**

**5 Classification**

Footwear for prolonged contact with chemicals shall be classified in accordance with Table 1.

**Table 1 — Classification of footwear**

Classification	Description
II	All-rubber (i.e. entirely vulcanised) and all-polymeric footwear (i.e. entirely moulded) footwear

## 6 Requirements

### 6.1 Basic requirements

Footwear for prolonged contact with chemicals shall conform to the requirements specified in Table 2.

Footwear for prolonged contact with chemicals may or may not include a toe cap. The choice shall be made from one of the three columns (EN ISO 20345:2011, EN ISO 20346:2014 or EN ISO 20347:2012) in Table 2.

**Table 2 – Basic requirements for footwear for prolonged contact with chemicals**

Requirements			Reference				Classification
			EN ISO 20345:2011	EN ISO 20346:2014	EN ISO 20347:2012	prEN 13832-3:2017	II
General	Whole footwear	Designs and classifications				4 and 5	X
		Height of upper	5.2.1	5.2.1	5.2.1		X
		Specific ergonomic features	5.3.4	5.3.4	5.3.3		X
		Leakproofness	5.3.3	5.3.3	5.3.2		X
		Water resistance	6.2.5	6.2.5	6.2.5		X
	Seat region	Designs C and D (Figure 1)	5.2.2	5.2.2	5.2.2		X
		Design E (Figure 1)	5.2.2	5.2.2	5.2.2		X
Whole footwear	Sole performance	Construction	5.3.1.1	5.3.1.1	5.3.1.1		
		Slip resistance				scope	X
	Toe Protection	General	5.3.2.1	5.3.2.1			X
		Toe cap length	5.3.2.2	5.3.2.2			X
		Impact resistance	5.3.2.3	5.3.2.3			X
		Compression resistance	5.3.2.4	5.3.2.4			X
		Toecap behaviour	5.3.2.5	5.3.2.5			X
	footwear for prolonged contact with chemicals					6.2.1	X
Upper	General	5.4.1	5.4.1	5.4.1		X	
	Thickness	5.4.2	5.4.2	5.4.2		X	
	Tear strength	5.4.3	5.4.3	5.4.3		X	
	Tensile properties	5.4.4	5.4.4	5.4.4		X	
	Flexing resistance	5.4.5	5.4.5	5.4.5		X	
Insole/insocks	See Table 3						
Outsole	Thickness	5.8.1	5.8.1	5.8.1		X	
	Tear strength	5.8.2	5.8.2	5.8.2		X	
	Abrasion resistance				6.2.2	X	
	Flexing resistance	5.8.4	5.8.4	5.8.4		X	
	Interlayer bond strength	5.8.6	5.8.6	5.8.6		0	



The applicability of a requirement to a particular classification is indicated in the table by the following.  
 X indicates that the requirement shall be met. In some cases the requirement relates only to particular materials within the classification, e.g. pH value of leather components. This does not mean that other materials are precluded from use.  
 O indicates that if the component part exists, the requirement shall be met.  
 NOTE The absence of X or O indicates that no requirement is made.

**Table 3 — Basic requirements for insoles and/or insocks**

Options		Component to be assessed	Requirements to fulfil in EN ISO 20345:2011/20346:2014/20347:2012					
			Thickness 5.7.1	pH * 5.7.2	Water absorption desorption 5.7.3	Abrasion 5.7.4.1	Chromium VI * 5.7.5	Abrasion 5.7.4.2
1	No insole or if present not fulfilling the requirements	Insock	X	X	X		X	X
2	No insock	Insole	X	X	X	X	X	
	Seat sock present							
3	Insole present	Full insock non-removable	X		X			
		Insock and insole together		X			X	X
4	Insole present	Full insock, removable and water-permeable ♦	X	X	X	X	X	
		Insock		X			X	X
5	Insole present	Full insock, removable, not water-permeable	X	X	X	X	X	
		Insock		X	X		X	X

NOTE For removable insocks see 8.5.  
 X indicates that the requirement shall be met.  
 ♦ indicates a water permeable insock which, when tested in accordance with EN ISO 20344:2011, 7.2, lets water through in 60 s or less.  
 \* Indicates those requirements that are only for leather.

**6.2 Requirements for footwear for prolonged contact with chemicals,**

**6.2.1 Resistance of whole footwear**

**6.2.1.1 General**

At least 3 test chemicals shall be taken from the list given in Table 4. Other testing chemicals could be used depending on the application of the footwear.

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