

DIN EN ISO 20346:2024-06 (E)

Personal protective equipment - Protective footwear (ISO 20346:2021 + Amd 1:2024)
(includes Amendment :2024)

Contents	Page
European foreword.....	5
A1 European foreword to Amendment A1 A1	6
Annex ZA (informative) A1 Relationship between this European Standard and the essential requirements of PPE Regulation (EU) 2016/425 aimed to be covered A1	7
Foreword	9
A1 Foreword to Amendment 1 A1	11
1 Scope	12
2 Normative references.....	12
3 Terms and definitions	12
4 Classification and designs	19
5 Basic requirements for protective footwear.....	20
5.1 General.....	20
5.2 Design.....	23
5.2.1 General.....	23
5.2.2 Height of upper	23
5.2.3 Heel area.....	23
5.3 Whole footwear.....	24
5.3.1 Constructional performance.....	24
5.3.2 Toe protection.....	24
5.3.3 Leak proofness.....	26
5.3.4 Specific ergonomic features	26
5.3.5 Slip resistance	26
5.3.6 Innocuousness.....	27
5.3.7 Seam strength.....	27
5.4 Upper	27
5.4.1 General.....	27
5.4.2 Thickness	28
5.4.3 Tear strength	29
5.4.4 Tensile properties.....	29
5.4.5 Flexing resistance	29
5.4.6 Water vapour permeability and coefficient	29
5.4.7 Resistance to hydrolysis	29
5.5 Lining.....	30
5.5.1 General.....	30
5.5.2 Tear strength	30
5.5.3 Abrasion resistance.....	30
5.5.4 A1 Water vapour permeability (WVP) and coefficient (WVC) A1	30
5.6 Tongue.....	30
5.6.1 General.....	30
5.6.2 Tear strength	31
5.7 Insole, insock and footbed	31
5.7.1 Thickness	31
5.7.2 Water permeability	31
5.7.3 Water absorption and desorption	31

5.7.4	Abrasion resistance	31
5.8	Outsole.....	32
5.8.1	General	32
5.8.2	Design	32
5.8.3	Tear strength.....	32
5.8.4	Abrasion resistance	33
5.8.5	Flexing resistance.....	33
5.8.6	Resistance to hydrolysis.....	33
5.8.7	Interlayer bond strength	33
6	Additional requirements for protective footwear.....	33
6.1	General	33
6.2	Whole footwear	34
6.2.1	Perforation resistance	34
6.2.2	Electrical properties.....	37
6.2.3	Resistance to inimical environments	37
6.2.4	Energy absorption of seat region.....	37
6.2.5	Water resistance	37
6.2.6	Metatarsal protection	38
6.2.7	Ankle protection	38
6.2.8	Cut resistance.....	39
6.2.9	[A1] Scuff cap [A1]	39
6.2.10	Slip resistance.....	39
6.3	Upper — Water penetration and absorption	39
6.4	Outsole.....	40
6.4.1	Resistance to hot contact	40
6.4.2	Resistance to fuel oil.....	40
6.4.3	Ladder grip.....	40
7	Marking.....	40
8	Manufacturer's instructions and information	41
8.1	General	41
8.2	Electrical properties.....	42
8.2.1	[A1] General.....	42
8.2.2	Partially conductive footwear.....	42
8.2.3	Antistatic footwear.....	43
8.3	Insocks.....	43
8.4	Perforation resistance	43
8.5	Date of obsolescence	44
Annex A	(normative) Customized protective footwear (protective footwear adapted to fit an individual user or a single unit to fit an individual user)	45
A.1	General	45
A.2	Basic requirements.....	45
A.2.1	Type 1 — equipped with customized insocks	45
A.2.2	Type 2 — Modified protective footwear.....	46
A.2.3	Type 3 — Bespoke protective footwear	47
A.3	Marking	48
A.4	Manufacturer's instruction and information	48
Annex B	(informative) Assessment of the footwear by the wearer	49
B.1	General	49
B.2	Criteria for the assessment of the state of footwear	49
Annex C	(informative) Slip resistance.....	51
C.1	Introduction	51
C.2	Explanation of ISO 13287 and marking codes SR and Ø.....	51
C.3	Further complementary testing.....	52

C.3.1	General.....	52
C.3.2	Additional surfaces.....	52
C.4	Factors influencing footwear performance.....	52
C.4.1	General.....	52
C.4.2	Durability of slip resistance	53
C.4.3	Other factors	53
	Bibliography.....	54