European Standards Footwear Classifications

Function	European Standards EN ISO 20345 for safety footwear
Impact Resistance	Level of protection: 200 Joules
Compression Resistance	Level of protection: 15kN
Anti - penetration Sole	With symbol of "P" resist a penetration force of 1,100 Newtons (N)

Marked	Standard for EN ISO 20345:2022
SB	Basic requirements for safety footwear: - Standing 200 Joules on impact - Slip resistance of SRA, SRB or SRC standard
S1	As above SB standard, plus: - Closed seat region - Antistatic properties - Energy absorption of seat region - Resistance to fuel oil
S1P	As above S1 standard, plus perforation resistance
S2	As above S1 standard, plus: - Water penetration and absorption - Non cleated outsole
S3	As above S2 standard, plus: - Penetration resistance - Cleated outsole
S7L	As above S3 standard, plus: - Non-metallic perforation resistant insert with resistance to 4.5 mm nails - Water resistant on whole footwear

Marked	Standard for EN ISO 20347:2022
OB	In terms of comfort and wear resistance, a level of quality as defined by an agreed European Standard
O1	As above OB standard, plus: - Closed heel area - Antistatic properties - Energy absorption of seat region
O2	As above O1 standard, plus: - Water-penetration and absorption resistance

European Standards Footwear Classifications
(Cont.)

Slip resistance according to the EN ISO 20345:2011

The following markings show on which ground the footwear provides protection (how much friction):

Marked	Lubricant	Test Area	Test Mode	Normatice standards friction coefficient
SRA	NaLS	Ceramic tile floor	Forward heel slip	≥ 0,32
			Forward flat slip	≥ 0.28
SRB	Glycerol	Steel floor	Forward heel slip	≥ 0.18
			Forward flat slip	≥ 0.13
SRC	Tested and conforms to both (SRA & SRB) specification tests			

Slip resistance according to the EN ISO 20345:2022

Slip resistance is an important feature of safety footwear. It is considered mandatory and will therefore not carry a mark. There is an option for an additional slip test to be carried out, which will be marked with an SR symbol. The slip resistance test is carried out on a ceramic tile using different lubricants. The heel and forepart of the boot will be tested.

Marking	Basic Requirement		Additional Requirement SR	
Surface	Ceramic		Ceramic	
Lubricant	NaLS		Glycerine	
Position	Heel	Forepart	Heel	Forepart
Direction	Forward	Backward	Forward	Backward
Requirement COF	≥ 0,31	≥ 0,36	≥ 0,19	≥ 0,22

COF = coefficient of friction

Please note that even if the footwear is marked with SRC or SR, the user must always pay attention to the condition on the ground as the responsibilities always stays with the user.

European Standards Footwear Classifications
(Cont.)

Symbols	Function	Requirement
A	Antistatic	Between 0.01 and 1000 MΩ
P	Penetration resistance metallic insert	At least 1,100 newtons of pressure, tested with 4.5 mm nail
PL/PS	Perforation resistance non-metallic insert	PL - With 1,100 newtons of pressure, tested with 4.5 mm nail PS - Average value of four tests must not be lower than 1,100 newtons, tested with 3.0 mm nail
C	Conductive footwear	< 0.1 M Ω
CI	Insulation against cold	In an environment of minus 17°C for 30 minutes, the insole surface temperature should not have declined by more than 10°C
AN	Ankle protection	The ankle areas shall be protected at least on the outer side of the footwear
E	Energy absorption	> 20J
HI	Insulation against heat	The environment is 150 °C for 30 minutes, the insole surface temperature should not rise above 22 °C
HRO	Resistance to hot contact up to 300°C	When exposed to high temperatures up to 300 °C of the surface, there should be no broken soles
WPA	Water penetration and water absorption resistant upper	Water penetration time > 30 min Water absorption after 20% ≤ 30min Permeable volume ≤ 3g / h Water vapor permeability ≥ 0.8mg/cm2h
LG	Ladder grip	To offer better foothold on ladders, the outsole of a safety shoe must have a transverse profile with a height of at least 1.5 mm in the arch area
FO	Fuel oil resistance	The shoe sole's resistance to hydrocarbons (oils, petrol, etc.)
M	Metatarsal protection	The metatarsal protective device shall be such that, under impact, the resulting forces are distributed over the outsole, the toecap and as large a surface of the foot as possible
WR	Water resistance	Protection classes, S6 and S7, for waterproof footwear: S6 = the footwear meets the requirements of class S2 and is also waterproof (WR) S7 = the footwear meets the requirements of class S3 and is also waterproof (WR)