

**Prod. Ref** 82500-000  
**Occupational Cat** SB E P WRU HRO FO SRC  
**Size range** 39 - 48 (6 - 13)  
**Weight** (size 42) 775 g  
**Shape** B  
**Width** 11

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**Description:** Black water repellent grain leather ankle boot, textile lining, anti-shock, slipping resistant, non metallic **APT Plate** midsole **Zero Perforation**, with high electrical resistance

**Key points:** Insole and sole are highly electric resistant. The whole boot has been designed in order not to have any metal parts; **METATARSAL SUPPORT GEL** footbed made of soft and scented polyurethane, electrically insulating, anatomic, covered with cloth. The soft gel insert in the metatarsal area guarantees stability and comfort even on uneven surfaces. Cold and heat insulation. Arch support made of polycarbonate and fibreglass conveniently placed between heel and sole, which provides support and protection of the plantar arch, thus preventing harmful bendings. Outsole resistant to +300°C (1 minute contact). Padded collar

**Suggested use:** Given the high electrical resistance, it is possible to use this boot as a secondary protective equipment in addition to the primary ones (obligatory) for installation of electric plants and all activities where it is important to reduce the risk of lesions for accidental contacts with hot electric wires.

**Footwear for electricians**

**Instructions:** This boot is not a primary protective equipment. It does not prevent the risk of electrical shock when working with dangerous tensions and does not insulate from high voltage. Apart from these footwear the worker must use other electrical shock protective equipment (i.e. gloves and insulating rubber carpets or alternative systems in the work place). The resistance against electric shocks fails in wet environments and when the outer surface of the sole is contaminated by chemical agents (i.e. road salt) or entrapped conductive materials (i.e. nails or metal swarf). Therefore it is necessary to check the footwear carefully. They must be replaced if damaged or too worn. The use of this shoe is absolutely not advisable in explosive stores or any place with risk of fire

**Care and maintenance:** Clean after use and let the shoe dry in airy places, away from heat sources; treat the leather with a suitable shoe-polish; it is better to avoid a continuous contact with aggressive acids or with extreme temperature. Avoid a complete immersion in sea and lime water, and in cement dry or mixed with water



**MATERIALS / ACCESSORIES**

**Complete shoe** Value of electric resistance higher than that of antistatic footwear  
**Toe cap:** non metallic **TOP RETURN** toe cap, impact resistant until 200 J and compression resistant until 1500 kg  
**Anti perforation midsole:** in multi-layers highly tensile fabric, penetration resistant, **Zero Perforation**, with high electric resistance  
**Energy absorption system**

**Upper** Black water repellent grain leather thickness 1,8/2,0mm

**Vamp lining** Textile, breathable, abrasion resistant, colour black Thickness 1,2 mm

**Quarter lining** Textile, breathable, abrasion resistant, colour red Thickness 1,2 mm

**Sole** Polyurethane - nitrile rubber, with high electrical resistance, directly injected in the upper:

**SAFETY TECHNICAL SPECIFICATIONS**

Clause EN ISO 20345:2011	Description	Unit	Cofra result	Standards Requirement
	Resistance against electric shocks of the whole footwear	MΩ	> 2000	≥ 1000
5.3.2.3	Shock resistance (clearance after shock)	mm	15	≥ 14
5.3.2.4	Compression resistance (clearance after compression)	mm	14,5	≥ 14
6.2.1	Penetration resistance	N	To 1100 N	≥ 1100
			No perforation	
6.2.4	Shock absorption	J	41	≥ 20
5.4.6	Steam permeability	mg/cm <sup>2</sup> h	> 2	≥ 0,8
	Permeability coefficient	mg/cm <sup>2</sup>	> 23,5	> 15
6.3.1	Water absorption		14%	≤ 30%
	Water penetration		0,0 g	≤ 0,2 g
5.5.3	Steam permeability	mg/cm <sup>2</sup> h	> 6	≥ 2
	Permeability coefficient	mg/cm <sup>2</sup>	> 48	≥ 20
5.5.3	Steam permeability	mg/cm <sup>2</sup> h	> 2	≥ 2
	Permeability coefficient	mg/cm <sup>2</sup>	> 20	≥ 20
5.8.3	Abrasion resistance (lost volume)	mm <sup>3</sup>	85	≤ 150
5.8.4	Flexing resistance (cut increase)	mm	1	≤ 4

Outsole: black nitrile rubber, slipping resistant, abrasion resistant, hydrocarbons resistant, and hot resistant.

Midsole: black polyurethane low density, comfortable and anti-shock.

Electric insulation of the footwear bottom in dry condition

Adherence coefficient of the sole

5.8.6	Interlayer bond strength	N/mm	> 5	≥ 4
6.4.4	Hot resistance (300 °C)	---	<b>any melting</b>	any melting
6.4.2	Hydrocarbons resistance ( $\Delta V$ = volume increase)	%	+ 1	≤ 12
CAN/CSA Z195-14	Test voltage 18.000 Volts Test time 1 minute	mA	<b>0,25</b>	≤ 1
5.3.5	SRA : ceramic + detergent solution – flat		<b>0,56</b>	≥ 0,32
	SRA : ceramic + detergent solution – heel (contact angle 7°)		<b>0,50</b>	≥ 0,28
	SRB : steel + glycerol – flat		<b>0,25</b>	≥ 0,18
	SRB : steel + glycerol – heel (contact angle 7°)		<b>0,17</b>	≥ 0,13

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