



<b>Prod. Ref.</b>	NR100-000
<b>Safety cat.</b>	S3S CI HRO FO SR
<b>Range of sizes</b>	38 - 48 (5 - 13)
<b>Weight (sz. 8)</b>	530 g
<b>Shape</b>	A
<b>Widht (5 - 6)</b>	10,5
<b>Widht (6,5 - 13)</b>	11

**Description:** Black water repellent nubuck shoe, **OXY-LINER** 100% polyester lining, anti-shock, slipping resistant, with non-woven fabric puncture resistant **FTP Plate** insole - non metallic type **PS** with Ø 3,0 mm nail.

**Plus: 100% METAL FREE.** High electrical conductivity. Stability of the conductive capability for extended period. **LIGHT FOAM ESD** footbed, with low electrical resistance, made of extremely soft and comfortable polyurethane foam. Punched, its anatomical shape provides support to the plantar arch; covered with abrasion resistant fabric, it absorbs moisture and keeps always the foot dry; it guarantees excellent comfort and shock absorption. Outsole resistant to +300°C (1 minute contact). Footwear with an innovative TPEE sole (SUPER CRITICAL MATERIAL, expanded using supercritical nitrogen). **The TPEE (Thermoplastic Polyester Elastomer), an innovative material used for the midsole, conceived for this special line of COFRA footwear, boasts unique properties.** Indeed, **it combines the rigidity, the mechanical strength typical of the thermoplastic materials (such as TPU) with the elasticity and the lightness typical of the elastomers (such as EVA).** Abrasion resistant protection on toe area - **SC** (SCUFF CAP).

**Suggested uses:** Footwear for microelectronic industries. Recommendable in **ATEX** environments

**Care and maintenance:** Clean after each use and dry off away from direct heat; treat the leather with a suitable shoe-polish. Avoid contact with aggressive chemicals or extreme temperature. Avoid immersion in sea water, lime water or cement mixed with water

**Recommendation:** It is always necessary to wear socks made of natural fibers i.e. wool or cotton, because they provide the best performance with electrical conductivity. Avoid introducing any foreign body between foot and footbed of the footwear (i.e. insoles or similar items not equipped by the manufacturer), as they could make void the electrical properties the footwear have been conceived for. Do not undervalue the effect of ageing and contamination of the footwear: during time their electrical resistance can be subjected to alterations. It is always important to check the electrical properties of footwear through the use of special testing devices in electrostatic protected area (EPA), according to the European standard CEI EN 61340-5-1

### MATERIALS / ACCESSORIES

### SAFETY TECHNICAL SPECIFICATIONS

		Clause EN ISO 20345:2022+ A1:2024	Description	Unit	Cofra result	Requireme nt	
<b>Complete shoe</b>	<b>E.S.D. features</b>	CEI EN					
			61340-5-1	Electric resistance of footwear to floor	MΩ	<b>52,1</b>	< 1000
			61340-5-1	Cross resistance	MΩ	<b>104,01</b>	≤ 100
			61340-5-1	Charge ability	V	<b>10</b>	< 100
			5.3.2.6	Shock resistance (clearance after shock)	mm	<b>16</b>	≥ 14
			5.3.2.7	Compression resistance (clearance after compression)	mm	<b>16,5</b>	≥ 14
			6.2.1	Penetration resistance <b>(PS requirement with Ø 3,0 mm nail)</b>	N	<b>1304</b>	≥ 1100
			6.2.3.2	Cold insulation (temp. decrease after 30' C at -17 °C)	°C	<b>5</b>	≤ 10
			6.2.4	Shock absorption	J	<b>29</b>	≥ 20
		<b>Upper</b>	Black water repellent nubuck thickness 1,6/1,8 mm	5.4.6	Water vapour permeability	mg/cmq h	<b>&gt; 2,7</b>
	Permeability coefficient			mg/cmq	<b>&gt; 22,2</b>	≥ 15	
<b>Upper</b>	Black water repellent innovative and breathable fabric	6.3	Water absorption		<b>5,6%</b>	≤ 30%	
			Water penetration		<b>0,0 g</b>	≤ 0,2 g	
<b>Upper</b>	Black water repellent innovative and breathable fabric	5.4.6	Water vapour permeability	mg/cmq h	<b>&gt; 2,1</b>	≥ 0,8	

		6.3	Permeability coefficient	mg/cmq	> <b>16,9</b>	≥ 15
			Water absorption		<b>4,7%</b>	≤ 30%
			Water penetration		<b>0,02 g</b>	≤ 0,2 g
<b>Vamp</b>	Textile, breathable, abrasion resistant, colour black	5.5.4	Water vapour permeability	mg/cmq h	> <b>84,7</b>	≥ 2
<b>lining</b>	Thickness 1,2 mm		Permeability coefficient	mg/cmq	> <b>677,4</b>	≥ 20
<b>Quarter</b>	<b>OXY-LINER</b> 100% polyester, breathable, abrasion resistant, color black	5.5.4	Water vapour permeability	mg/cmq h	> <b>21,3</b>	≥ 2
<b>lining</b>	Thickness 1,2 mm		Permeability coefficient	mg/cmq	> <b>171,4</b>	≥ 20
<b>Sole</b>	TPEE/Nitrile rubber, with low electrical resistance, directly applied in the upper:	5.8.4	Abrasion resistance (lost volume)	mm <sup>3</sup>	<b>41</b>	≤ 150
	Outsole: black nitrile rubber, slipping resistant, abrasion resistant, hydrocarbons resistant and heat resistant.	5.8.5	Flexing resistance (cut increase)	mm	<b>1</b>	≤ 4
	Midsole: white and black TPEE, low density, comfortable and anti-shock	5.8.7	Interlayer bond strength	N/m	<b>4,9</b>	≥ 3
		6.4.4	Hot resistance (300 °C)	----	<b>any melting</b>	any melting
		6.4.2	Hydrocarbons resistance ( $\Delta V$ = volume increase)	%	<b>6,9</b>	≤ 12
		5.3.5.2	ceramic + detergent solution – forepart (contact angle 7°)		<b>0,41</b>	≥ 0,36
			ceramic + detergent solution – heel (contact angle 7°)		<b>0,47</b>	≥ 0,31
		6.2.10	SR : ceramic + glycerol – forepart (contact angle 7°)		<b>0,27</b>	≥ 0,22
			SR : ceramic + glycerol – heel (contact angle 7°)		<b>0,31</b>	≥ 0,19
	Adherence coefficient of the sole (Slip resistance)					