COFRA
BORN TO WORK

PRODUCT SHEET

KRESS S1 P ESD SRC

Prod. Ref.	78450-003
Safety cat.	S1 P ESD SRC
Range of sizes	35 - 48 (2 - 12)
Weight (sz. 8)	510 g
Shape	A
Width	11

Description: Black highly breathable **BREATEX** fabric with 3D texture and **MICROTECH** shoe, **SANY-DRY®** lining, antistatic, anti-shock, slipping resistant, non metallic **APT Plate** midsole **Zero Perforation,** with low electrical resistance (ESD).

Plus: High electrical conductibility. Stability of the conductive capability for extended period. **COFRA SOFT ESD**, footbed made of scented polyurethane, holed, anatomic, with low electric resistance, soft and comfortable; the shape of the bottom part guarantees impact energy absorption (shock absorber) and high grip; the upper part absorbs moisture and keeps the foot dry. Perfumed sole. Leather toe cap protection

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

		Clause EN ISO 20345:2011
Complete shoe	**E.S.D. features**	CEI EN
		61340-5-1
		61340-4-3
	Toe cap: **ALUMINIUM** made, ultra light, impact resistant until 200 J	5.3.2.3
	and compression resistant until 1500 kg	5.3.2.4
	Anti perforation midsole: in multi-layers highly tensile fabric, penetration resistant, **Zero Perforation,** with low electric resistance	6.2.1
	Energy absorption system	6.2.4
Upper	**BREATEX,** 3D texture, highly breathable, abrasion resistant, colour black	**5.4.6**
		5.4.3
Upper	Black breathable **MICROTECH**	5.4.6
	thickness 1,8 mm	
Vamp	Textile, breathable, abrasion resistant, colour black	5.5.3
lining	Thickness 1,2 mm	
Quarter	**SANY-DRY®**, breathable, antibacterial, abrasion resistant, colour black	5.5.3
lining	thickness 1,2 mm	
Sole	polyurethane/TPU with low electrical resistance, directly injected in the upper:	5.8.3
	Outsole: Ice TPU, slipping resistant, abrasion resistant and hydrocarbons resistant.	5.8.4
	Midsole: Black polyurethane, low density, comfortable and anti-shock.	5.8.6

SAFETY TECHNICAL SPECIFICATIONS

Description	Unit	Cofra result	Requirement
Electric resistance of footwear to the ground	MΩ	**22,5**	0.75 - 35
Crosswise outsole electric resistance	MΩ	**52**	< 100
Shock resistance (clearance after shock)	mm	**15,5**	≥ 14
Compression resistance (clearance after compression)	mm	**15**	≥ 14
Penetration resistance	N	**To 1100 N**	≥ 1100
		No perforation	
Shock absorption	J	**28**	≥ 20
Water vapour permeability	**mg/cmq h**	**> 8,9**	≥ 0,8
Permeability coefficient	**mg/cmq**	**> 71,2**	> 15
Tear resistance	**N**	**88,4**	≥ 60
Abrasion resistance	**Cycle**	**> 100.000**	
Water vapour permeability	mg/cmq h	**> 2,4**	≥ 0,8
Permeability coefficient	mg/cmq	**> 22,2**	> 15
Water vapour permeability	mg/cmq h	**> 6**	≥ 2
Permeability coefficient	mg/cmq	**> 48**	≥ 20
Water vapour permeability	mg/cmq h	**> 9,8**	≥ 2
Permeability coefficient	mg/cmq	**> 78,5**	≥ 20
Abrasion resistance (lost volume)	mm^3	**35**	≤ 150
Flexing resistance (cut increase)	mm	**1**	≤ 4
Interlayer bond strength	N/mm	**> 5**	≥ 4

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	6.4.2	Hydrocarbons resistance (ΔV = volume increase)	%	**- 0,8**	≤ 12
Adherence coefficient of the sole	5.3.5	SRA : ceramic + detergent solution – flat		**0,60**	≥ 0,32
		SRA : ceramic + detergent solution – heel (contact angle 7°)		**0,51**	≥ 0,28
		SRB : steel + glycerol – flat		**0,27**	≥ 0,18
		SRB : steel + glycerol – heel (contact angle 7°)		**0,19**	≥ 0,13