COFRA®
BORN TO WORK

PRODUCT SHEET

ATENA ESD S3S FO SR

Prod. Ref.	18530-N07
Safety cat.	S3S FO SR
Range of sizes	35 - 41 (2 - 7)
Weight (sz. 8)	400 g
Shape	A
Width	11

Description: Black **TECHSHELL**, innovative, very tough, abrasion resistant, water repellent and breathable fabric shoe, **SANY-DRY®** lining, anti-shock, slipping resistant, non metallic **APT PLUS** midsole **Zero Perforation**

Plus: High electrical conductibility. Stability of the conductive capability for extended period. **FOOT-PAD ESD** extremely soft and comfortable footbed, **with low electric resistance**. Thanks to the very low density polyurethane, the footbed is self-molding granting a right distribution of the body weight and providing an immediate feeling of comfort. High shock absorption is provided from highly resilient material and a perfect cushion in the central area of the heel. Perfumed sole. **TPU toe cap protection**

Suggested uses: Women footwear. 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 20345:2022	Description	Unit	Cofra result	Requirement
Complete shoe	**E.S.D. features**	CEI EN				
		61340-5-1	Electric resistance of footwear to floor	MΩ	**69,8**	< 1000
		61340-5-1	Cross resistance	MΩ	**59,7**	≤ 100
		61340-5-1	Charge ability	V	**6,27**	< 100
	Toe cap: **ALUMINIUM** made, ultra light, impact resistant until 200 J	5.3.2.6	Shock resistance (clearance after shock)	mm	**15**	≥ 14
	and compression resistant until 1500 kg	5.3.2.7	Compression resistance (clearance after compression)	mm	**16,5**	≥ 14
	Anti perforation midsole: in multi-layers highly tensile fabric, penetration resistant, **Zero Perforation,** with low electric resistance	6.2.1	Penetration resistance	N	**To 1100 N**	≥ 1100
			(**PS** requirement with Ø 3,0 mm nail)		**No perforation**	
	Energy absorption system	6.2.4	Shock absorption	J	**35**	≥ 20
Upper	**TECHSHELL**, innovative, very tough, abrasion resistant, water repellent and breathable fabric, colour black	5.4.6	Water vapour permeability	mg/cmq h	**> 5**	≥ 0,8
			Permeability coefficient	mg/cmq	**> 41.5**	≥ 15
		6.3	Water absorption		**13,37%**	≤ 30%
			Water penetration		**0,0 g**	≤ 0,2 g
		5.4.3	**Tear resistance**	**N**	**233**	**≥ 60**
			Abrasion resistance	**Cycle**	**> 600.000**	
Upper	Black water repellent microfibre	5.4.6	Water vapour permeability	mg/cmq h	**> 12,4**	≥ 0,8
	thickness 1,8 mm		Permeability coefficient	mg/cmq	**> 99,8**	≥ 15
		6.3	Water absorption		**16%**	≤ 30%
			Water penetration		**0,0 g**	≤ 0,2 g
Vamp	Textile, breathable, abrasion resistant, colour black	5.5.4	Water vapour permeability	mg/cmq h	**> 84,7**	≥ 2

SAFETY TECHNICAL SPECIFICATIONS

lining	Thickness 1,2 mm		Permeability coefficient	mg/cmq	**> 677,4**	≥ 20
Quarter	**SANY-DRY®**, breathable, abrasion resistant, colour fuxia	5.5.4	Water vapour permeability	mg/cmq h	**> 64,4**	≥ 2
lining	thickness 1,2 mm		Permeability coefficient	mg/cmq	**> 515,4**	≥ 20
Sole	Polyurethane/TPU with low electrical resistance, directly injected in the upper:	5.8.4	Abrasion resistance (lost volume)	mm^3	**89**	≤ 150
	Outsole: fuxia TPU, slipping resistant, abrasion resistant and hydrocarbons resistant.	5.8.5	Flexing resistance (cut increase)	mm	**1,6**	≤ 4
	Midsole: black polyurethane, low density, comfortable and anti-shock	5.8.7	Interlayer bond strength	N/mm	**3,1**	≥ 3
		6.4.2	Hydrocarbons resistance (ΔV = volume increase)	%	**6,5**	≤ 12
	Adherence coefficient of the sole (Slip resistance)	5.3.5.2	ceramic + detergent solution – forepart (contact angle 7°)		**0,40**	≥ 0,36
			ceramic + detergent solution – heel (contact angle 7°)		**0,33**	≥ 0,31
		6.2.10	SR : ceramic + glycerol – forepart (contact angle 7°)		**0,26**	≥ 0,22
			SR : ceramic + glycerol – heel (contact angle 7°)		**0,24**	≥ 0,19