

TECHNICAL SHEET



Article:	B1212B I-CYBER
Norm:	UNI EN ISO 20345:2011
Safety Class:	S1P ESD SRC
ESD protection of electronic components:	CEI EN 61340-5-1:2016, CEI EN 61340-4-5:2018 and CEI EN 61340-4-3:2018
Footwear height:	Mod. A, H 87 mm (< 113 mm, Rif. EN 20345-5.2.2)
Width:	11,5
Construction:	STROBEL; CEMENTED BIDENSITY SOLE PU/TPU ESD
Cleaning and maintenance:	Use only soft brushes and water. Do not use substances such as alcohol, thinners, gasoline, oil or any other chemicals. Keep the footwear, dry and clean, in a proper place at room temperature.
Suggested fields:	Electronics (EPA=Electrostatic protected areas ESD), automotive, automated lines, building

ESD Protection (Electrostatic discharges) for electronic devices

Suitable for use in EPA areas (Electrostatic discharges protected area)

Component	Description	Value	Norm Requirements
Entire footwear	Total resistance footwear/ground (footwear worn on a metal ground)	$1,65 \times 10^7 \Omega$	$< 1,00 \times 10^8 \Omega$
	Sole electrical transversal resistance (footwear resistance)	$2,27 \times 10^7 \Omega$	$\leq 1,00 \times 10^8 \Omega$
	Chargeability	$< 20 \text{ V}$	$< 100 \text{ V}$

Entire footwear: protections

Component	Description	Value	Norm Requirements	EN 20345	
Composite SLIM CAP toe-cap	Impact resistance (200 J)	15,0 mm	$\geq 14 \text{ mm}$	5.3.2.3	
	Compression resistance (15 kN)	17,0 mm	$\geq 14 \text{ mm}$	5.3.2.4	
Sole (SRC)	Slip resistance				
	• SRA – Sole (entire sole)	0,50	$\geq 0,32$	5.3.5.4	
	• SRA – Heel (Angle of 7°)	0,48	$\geq 0,28$	5.3.5.4	
	• SRB – Sole (entire sole)	0,18	$\geq 0,18$	5.3.5.4	
• SRB – Heel (Angle of 7°)	0,15	$\geq 0,13$	5.3.5.4		
Fresh'n Flex (P)	Puncture resistance	No perforation	$\geq 1100 \text{ N}$	6.2.1.1.2	
Footbed (A)	Antistatic properties	• Electrical resistance	dry $3,62 \times 10^8 \Omega$	$\geq 10^5 \Omega, \leq 10^9 \Omega$	6.2.2.2
		humid $1,46 \times 10^7 \Omega$	$\geq 10^5 \Omega, \leq 10^9 \Omega$	6.2.2.2	
Sole/Upper Heat (HI) Cold (CI)	Thermal insulation	Insole temperature increase	N/A	$\leq 22^\circ\text{C}$	6.2.3.1
		Insole temperature decrease	N/A	$\leq 10^\circ\text{C}$	6.2.3.2
Heel (E)	Shock-absorption in the heel region	29 J	$\geq 20 \text{ J}$	6.2.4	
(WR)	Water resistance (Water absorption)	N/A	$\leq 3 \text{ cm}^2$	6.2.5	
(M)	Metatarsal protection	N/A	$\geq 40 \text{ mm}$	6.2.6	

Upper

Component	Description	Value	Norm Requirements	EN 20345
Sublimated technical fabric	Tear resistance	115 N	$\geq 120 \text{ N}$	5.4.3
	Traction resistance	N/A	$\geq 15 \text{ N/mm}^2$	5.4.4
Sublimated technical fabric	Water steam permeability	2,1 mg/cm ² h	$\geq 0.8 \text{ mg/cm}^2 \text{ h}$	5.4.6
	pH value	N/A	$\geq 3,2$	5.4.7
	Chromium VI	N/A	Not detectable	5.4.9
	Water passed	N/A	$\leq 0.2 \text{ g}$	6.3
	Water absorption	N/A	$\leq 30\%$	6.3

Lining				
Component	Description	Value	Norm Requirements	EN 20345
	Tear resistance	47 N	≥ 15 N	5.5.1
	Abrasion resistance	<ul style="list-style-type: none"> Dry : the surface shows no holes humid: the surface shows no holes 	No holes till 51.200 cycles	5.5.2
3D Fabric			No holes till 25.600 cycles	5.5.2
	Water steam release	21,1 mg/cm ² h	≥ 2,0 mg/cm ² h	5.5.3
	pH value	N/A	Not detectable	5.5.4
	Chromium VI	N/A	Not detectable	5.5.5

Insole				
Component	Description	Value	Norm Requirements	EN 20345
	Thickness	3,7 mm	≥ 2,0 mm	5.7.1
	pH value	N/A	Not detectable	5.7.2
Fresh'n Flex	Water absorption	102 mg/cm ²	≥ 70 mg/cm ²	5.7.3
ESD	Water release	97%	≥ 80 %	5.7.3
	Abrasion resistance (after 400 cycles)	No damage	Damage ≤ to norms reference	5.7.4.1
	Chromium VI	N/A	Not detectable	5.7.5

Removable footbed*				
Component	Description	Value	Norm Requirements	EN 20345
	Thickness	3,5 ± 0,5 mm (tip)	N/A	5.5.1
	Ph value	N/A	Not detectable	5.5.2
DRY'N AIR	Water absorption	Permeable through the holes	Permeable or ≥ 70mg/cm ²	5.5.3
OMNIA ESD	Water release	Permeable through the holes	Permeable or ≥ 80%	5.5.3
WEARECO	Abrasion resistance	No damage	Dry No holes till 25.600 cycles Humid no holes till 12.800 cycles	5.5.4.2
	Chromium VI	N/A	Not detectable	5.7

* Compatible with DRY'N AIR SCAN&FIT OMNIA and Dry'n AIR OMNIA ESD insoles

Sole				
Component	Description	Value	Norm Requirements	EN 20345
	Sole thickness without profiles	6 mm	≥ 4 mm	5.8.1.1
	Profiles height	3 mm	≥ 2,5 mm	5.8.1.3
	Tear resistance	8,8 kN/m	≥ 8 kN/m	5.8.2
	Abrasion resistance	<ul style="list-style-type: none"> relative volume loss 	≤ 250 mm ³	5.8.3
PU Midsole	Flexion resistance	<ul style="list-style-type: none"> Notches increase after 30.000 cycles 	≤ 4 mm	5.8.4
TPU ESD	Hydrolysis	<ul style="list-style-type: none"> Notches increase after 150.00 cycles 	≤ 6 mm	5.8.5
Outsole	Outsole – insole detachment	4,7	≥ 4 N/mm; (*) ≥ 3 N/mm with sole ripping	5.8.6
	(HRO) Contact heat resistance (300°C)	No damage	No damage (melting, breaking)	6.4.1
	(FO) Fuel resistance (volume changes)	2,7 %	≤ 12%	6.4.2

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