

TECHNICAL SHEET



Article:	B1211 I-ROBOX TOP
Norm:	UNI EN ISO 20345:2011
Safety Class:	S3 CI 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. B, H 130 mm (≥113 mm, Rif. EN 20345-5.2.2)
Width:	11,5
Weight size 42	590 g
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)	3,8 x 10 ⁷ Ω	< 1,00 x 10 ⁹ Ω
	Sole electrical transversal resistance (footwear resistance)	6,1 x 10 ⁷ Ω	≤ 1,00 x 10 ⁸ Ω
	Chargeability	20,9 V	< 100 V

Entire footwear: protections

Component	Description	Value	Norm Requirements	EN 20345	
Composite SLIM CAP toe-cap	Impact resistance (200 J)	15,0 mm	≥ 14 mm	5.3.2.3	
	• Free height after impact				
Sole (SRC)	Compression resistance (15 kN)	18,0 mm	≥ 14 mm	5.3.2.4	
	• Free height after compression				
Fresh'n Flex (P)	Slip resistance	• SRA – Sole (entire sole)	0,46	≥ 0,32	5.3.5.4
		• SRA – Heel (Angle of 7°)	0,44	≥ 0,28	5.3.5.4
		• SRB – Sole (entire sole)	0,18	≥ 0,18	5.3.5.4
		• SRB – Heel (Angle of 7°)	0,13	≥ 0,13	5.3.5.4
Footbed (A)	Puncture resistance	No perforation	≥ 1100 N	6.2.1.1.2	
Footbed (A)	Antistatic properties	• Electrical resistance	dry 5,6 x 10 ⁷ Ω	≥ 10 ⁵ Ω , ≤ 10 ⁹ Ω	6.2.2.2
			humid 2,5 x 10 ⁷ Ω	≥ 10 ⁵ Ω , ≤ 10 ⁹ Ω	6.2.2.2
Sole/Upper Heat (HI)	Thermal insulation	Insole temperature increase	N/A	≤ 22°C	6.2.3.1
		Cold (CI)	Insole temperature decrease	7,5°	≤ 10°C
Heel (E)	Shock-absorption in the heel region	30 J	≥ 20 J	6.2.4	
(WR)	Water resistance (Water absorption)	N/A	≤ 3 cm ²	6.2.5	
(M)	Metatarsal protection	N/A	≥ 40 mm	6.2.6	

Upper

Component	Description	Value	Norm Requirements	EN 20345
Nabutek suedeleather	Tear resistance	188 N	≥ 120 N	5.4.3
	Traction resistance	19 N/mm ²	≥ 15 N/mm ²	5.4.4
	Water steam permeability	4,2 mg/cm ² h	≥ 0.8 mg/cm ² h	5.4.6
	Water steam Coefficient	59,3 mg/cm ²	≥ 15,0 mg/cm ²	5.4.6
	pH value	4,05	≥ 3,2	5.4.7
	Chromium VI	Not detected	Not detectable	5.4.9
	Water passed	0,0 g	≤ 0.2 g	6.3
	Water absorption	14 %	≤ 30%	6.3

Lining				
Component	Description	Value	Norm Requirements	EN 20345
3D Fabric	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
	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
Fresh'n Flex ESD	Thickness	3,7 mm	≥ 2,0 mm	5.7.1
	pH value	N/A	Not detectable	5.7.2
	Water absorption	102 mg/cm ²	≥ 70 mg/cm ²	5.7.3
	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
DRY'N AIR OMNIA ESD WEARECO	Thickness	3,5 ± 0,5 mm (tip)	N/A	5.5.1
	Ph value	N/A	Not detectable	5.5.2
	Water absorption	Permeable through the holes	Permeable or ≥ 70mg/cm ²	5.5.3
	Water release	Permeable through the holes	Permeable or ≥ 80%	5.5.3
	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	
PU Midsole	Sole thickness without profiles	6,5 mm	≥ 4 mm	5.8.1.1	
	Profiles height	4,5 mm	≥ 2,5 mm	5.8.1.3	
	Tear resistance	8,7 kN/m	≥ 8 kN/m	5.8.2	
	Abrasion resistance	<ul style="list-style-type: none"> relative volume loss 	73 mm ³	≤ 250 mm ³	5.8.3
	Flexion resistance	<ul style="list-style-type: none"> Notches increase after 30.000 cycles 	2 mm	≤ 4 mm	5.8.4
TPU ESD Outsole	Hydrolysis	<ul style="list-style-type: none"> Notches increase after 150.00 cycles 	2,5 mm	≤ 6 mm	5.8.5
	Outsole – insole detachment	4,5	≥ 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)	9 %	≤ 12%	6.4.2	

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