

TECHNICAL SHEET



Article:
Norm:
Safety Class:
Footwear height:
Weight (size 42)
Width:
Construction:
Cleaning and maintenance:
Suggested fields:

B0979B OREN TOP ESD
UNI EN ISO 20345:2011
S3 ESD SRC
Mod. B, H 115 mm (≥ 113 mm, Rif. EN 20345-5.2.2)
495 gr.
12
STROBEL; MONO PU ESD SOLE
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.
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)	7,41 x 10 ⁷ Ω	< 1,00 x 10 ⁸ Ω
	Sole electrical transversal resistance (footwear resistance)	5,91 x 10 ⁷ Ω	≤ 1,00 x 10 ⁸ Ω
	Chargeability	< 50 V	< 100 V

Entire footwear: protections

Component	Description	Value	Norm Requirements	EN 20345
Composite SLIM CAP toe-cap	Impact resistance (200 J) • Free height after impact Compression resistance (15 kN) • Free height after compression	14,0 mm 14,5 mm	≥ 14 mm ≥ 14 mm	5.3.2.3 5.3.2.4
Sole (SRC)	Slip resistance • SRA – Sole (entire sole) • SRA – Heel (Angle of 7°) • SRB – Sole (entire sole) • SRB – Heel (Angle of 7°)	0,48 0,45 0,22 0,20	≥ 0,32 ≥ 0,28 ≥ 0,18 ≥ 0,13	5.3.5.4 5.3.5.4 5.3.5.4 5.3.5.4
Fresh'n Flex (P)	Puncture resistance	No perforation	≥ 1100 N	6.2.1.1.2
Footbed (A)	Antistatic properties • Electrical resistance	dry 4,0 x 10 ⁸ Ω humid 1.8 x 10 ⁸ Ω	≥ 10 ⁵ Ω, ≤ 10 ⁹ Ω ≥ 10 ⁵ Ω, ≤ 10 ⁹ Ω	6.2.2.2 6.2.2.2
Sole/Upper	Thermal insulation			
Heat (HI)	Insole temperature increase	N/A	≤ 22°C	6.2.3.1
Cold (CI)	Insole temperature decrease	N/A	≤ 10°C	6.2.3.2
Heel (E)	Shock-absorption in the heel region	35 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



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Component	Description	Value	Norm Requirements	EN 20345
Sublimated technical textile	Tear resistance	245 N	≥ 60 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm ²	5.4.4
	Water steam permeability	2,0 mg/cm ² h	≥ 0.8 mg/cm ² h	5.4.6
	pH value	N/A	≥ 3,2	5.4.7
	Chromium VI	N/A	Not detectable	5.4.9
	Water passed	0,0 g	≤ 0.2 g	6.3
	Water absorption	26%	≤ 30%	6.3

Lining				
Component	Description	Value	Norm Requirements	EN 20345
3D Hi Tech Fabric	Tear resistance	47 N	≥ 15 N	5.5.1
	Abrasion resistance	Dry : the surface shows no holes	No holes till 51.200 cycles	5.5.2
		humid: the surface shows no holes	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
Fresh'n Flex ESD	Thickness	3,4 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	Thickness	3,5 ± 0,5 mm	N/A	5.5.1
	Ph value	N/A	Not detectable	5.5.2
	Water absorption	Permeable	Permeable or ≥ 70mg/cm2	5.5.3
	Water release	Permeable	Permeable or ≥ 80%	5.5.3
	Abrasion resistance	No damage	Dry No holes till 25.600 cycles	5.5.4.2
			Humid no holes till 12.800 cycles	
	Chromium VI	N/A	Not detectable	5.7

*Footwear also certified with DRY'N AIR OMNIA.

Sole				
Component	Description	Value	Norm Requirements	EN 20345
PU Monodensity Sole ESD	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	6,2 kN/m	≥ 8 kN/m	5.8.2
	Abrasion resistance			
	relative volume loss	100 mm ³	≤ 250 mm ³	5.8.3
	Flexion resistance			
	Notches increase after 30.000 cycles	2,1 mm	≤ 4 mm	5.8.4
	Hydrolysis			
	Notches increase after 150.00 cycles	3 mm	≤ 6 mm	5.8.5
	Outsole – insole detachment	N/A	≥ 4 N/mm; (*) ≥ 3 N/mm with sole ripping	5.8.6
	(HRO) Contact heat resistance (300°C)	N/A	No damage (melting, breaking)	6.4.1
	(FO) Fuel resistance (volume changes)	6 %	≤ 12%	6.4.2

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