

TECHNICAL SHEET



Article:	B0822 BE-READY ESD
Norm:	UNI EN ISO 20345:2012
Safety Class:	S1P SRC ESD
ESD protection for electronic devices:	CEI EN 61340-5-1:2016, CEI EN 61340-4-5:2006 and CEI EN 61340-4-3:2002
Footwear height:	Mod. A, H 95 mm (< 113 mm; Rif. EN 20345-5.2.2)
Width:	12
Construction:	STROBEL; DUAL DENSITY SOLE PU-TPU SKIN
Cleaning and maintenance:	Use only soft brushes and water. Do not use substances like alcohol, thinners, gasoline, oil or any other chemicals. Keep the footwear, dry and clean, in a proper place at room temperature.
Suggested fields:	Electronic (EPA=Electrostatic protected areas ESD), automotive, automated lines, light industry, services.

ESD Protection (Electrostatic discharges) for electronic devices

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



Component	Description	Value	Norm Requirements	Norm
Entire footwear	Total resistance footwear/ground (footwear worn on a metal ground)	1,95 x 10 ⁷ Ω	< 1,00 x 10 ⁸ Ω	CEI EN 61340-5-1
	Sole electrical transversal resistance (footwear resistance)	8,85 x 10 ⁷ Ω	≤ 1,00 x 10 ⁸ Ω	CEI EN 61340-4-3
	Chargeability	< 50 V	< 100 V	CEI EN 61340-4-5

Entire footwear: components				
Component	Description	Value	Norm Requirements	EN 20345
Metal-free SLIMCAP toe-cap	Impact resistance (200 J) • Free height after impact	14 mm	≥ 14 mm	5.3.2.3
	Compression resistance (15 kN) • Free height after compression	14,5 mm	≥ 14 mm	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'nFlex ESD (P)	Puncture resistance	No perforation	≥ 1100 N	6.2.1.1.2
Footbed (A)	Antistatic properties • Electrical resistance	Dry 4 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 Heat (HI)	Thermal insulation • 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)	Metatarsa lprotection	N/A	≥ 40 mm	6.2.6

Upper				
Component	Description	Value	Norm requirements	EN 20345
High tear-resistant fabric	Tear resistance	120 N	≥120 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm ²	5.4.4
	Water steam permeability	1,9 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	N/A	≤ 0.2 g	6.3
	Water absorption	N/A	≤ 30%	6.3
Suede microfiber	Tear resistance	87 N	≥60 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm ²	5.4.4
	Water steam permeability	6,5 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	N/A	≤ 0.2 g	6.3
	Water absorption	N/A	≤ 30%	6.3

Lining				
Component	Description	Value	NormRequirements	EN 20345
3D hi-tech Fabric	Tear Resistance	45 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	21,0 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

Removablefootbed				
Component	Description	Value	Norm requirements	EN 20345
Dry'n air ESD	Thickness	3,5±0,5 mm	N/A	5.7.1
	pH value	N/A	Not detectable	5.7.2
	Water absorption	Permeable	Permeable or ≥ 70mg/cm ²	5.7.3
	Water release	Permeable	Permeable or ≥ 80%	5.7.3
	Abrasion resistance	No damage	Dry: no holes till 25600 cycles humid:no holes till 12800	5.7.4.2
	Chromium VI	N/A	Not detectable	5.7.5

Sole				
Component	Description	Value	Norm requirements	EN 20345
Midsole PU; Outsole TPU SKIN (TPU high density)	Sole thickness without profiles	6,5mm	≥ 4 mm	5.8.1.1
	Profile height	4,5 mm	≥ 2,5mm	5.8.1.3
	Tear resistance	6,0 kN/m	≥ 5 kN/m	5.8.2
	Abrasion resistance	91 mm ³	≤ 250 mm ³	5.8.3
	• Relative volume loss			
	Flexion resistance	2,1 mm	≤ 4 mm	5.8.4
	• Notches increase after 30.000 cycles			
	Hydrolysis	3,0 mm	≤ 6mm	5.8.5
	• Notches increase after 150.00 cycles			
	Detachment sole-outsole	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)	6,0 %	≤ 12%	6.4.2	

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