

TECHNICAL SHEET



Article: **BO872 BE-FREE**
 Norm: **UNI EN ISO 20345:2012**
 Safety Class: **S3 SRC**

Footwear height: **Mod. A, H 96 mm (< 113 mm, Rif. EN 20345-5.2.2)**

Width: **11**

Construction: **STROBEL; PU-TPU SOLE**

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 environments: *Mechanics, building, logistics, light industry, ship building, automotive.*

Entire footwear: components				
Component	Description	Value	Norm Requirements	EN 20345
Metal-free SLIMCAP toe-cap	Impact resistance(200 J)			
	• Free height after impact	14,0 mm	≥ 14 mm	5.3.2.3
	Compression resistance (15 kN)			
	• Free height after compression	15,0 mm	≥ 14 mm	5.3.2.4
Sole (SRC)	Slip resistance			
	• SRA – Sole (entire sole)	0,35	≥ 0,32	5.3.5.4
	• SRA – Heel (Angle of 7°)	0,35	≥ 0,28	5.3.5.4
	• SRB – Sole (entire sole)	0,18	≥ 0,18	5.3.5.4
	• SRB – Heel (Angle of 7°)	0,15	≥ 0,13	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 9,88 x 10 ⁸ Ω humid 7,02 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) Cold (CI)	Thermal insulation			
	Insole temperature increase	N/A	≤ 22°C	6.2.3.1
	Insole temperature release	N/A	≤ 10°C	6.2.3.2
Heel (E)	Shock-absorption in the heel region	34 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
Waxy full grain	Tear resistance	170 N	≥60 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm ²	5.4.4
	Water steam permeability	2,2 mg/cm ² h	≥0.8 mg/cm ² h	5.4.6
	pH value	3,8	≥ 3,2	5.4.7
	Chromium VI	Non detected	Non 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 hi-tech Fabric	Tear resistance	30 N	≥ 15 N	5.5.1
	Abrasion resistance	- Dry : the surface shows no holes - humid: the surface shows no holes	No holes till 51.200 cycles	5.5.2
			No holes till 25.600 cycles	5.5.2
	Water steam release	7,2 mg/cm ² h	≥ 2,0 mg/cm ² h	5.5.3
	pH value	N/A	Non detectable	5.5.4
	Chromium VI	N/A	Non detectable	5.5.5

Insole				
Component	Description	Value	Norm Requirements	EN 20345
Fresh'nFlex	Thickness	3,5 mm	≥ 2,0 mm	5.7.1
	pH value	N/A	Non detectable	5.7.2
	Water absorption	109mg/cm ²	≥ 70 mg/cm ²	5.7.3
	Water release	100%	≥ 80 %	5.7.3
	Abrasion resistance (after 400 cycles)	No damage	Damage ≤ to norms reference	5.7.4.1
	Chromium VI	N/A	Non detectable	5.7.5

Removable footbed				
Component	Description	Value	Norm Requirements	EN 20345
Anatomical, breathable, textile and expanded polymeric material	Thickness	3,5±0,5 mm	N/A	5.7.1
	pH value	N/A	Non detectable	5.7.2
	Water absorption	Permeable	Permeable o ≥ 70mg/cm ²	5.7.3
	Water release	Permeable	Permeable o ≥ 80%	5.7.3
	Abrasion resistance	No damage	Dry No holes till 51.200 cycles Humid no holes till 25.600 cycles	5.7.4.2
	Chromium VI	N/A	Non detectable	5.7.5

Sole				
Component	Description	Value	Norm Requirements	EN 20345
Midsole: PU low density; Outsole TPU SKIN: (TPU high density)	Sole thickness without profile	10 mm	≥ 4 mm	5.8.1.1
	Profile height	8 mm	≥ 2,5mm	5.8.1.3
	Tear resistance	5,6 kN/m	≥ 5 kN/m	5.8.2
	Abrasion resistance			
	• relative volume loss	35 mm ³	≤ 250 mm ³	5.8.3
	Flexion resistance			
	• Notches increase after 30.000 cycles	1,5 mm	≤ 4 mm	5.8.4
	• Hydrolysis	2 mm	≤ 6 mm	5.8.5
	Notches increase after 150.00 cycles	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)	0,7 %	≤ 12%	6.4.2

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