

## TECHNICAL SHEET



Article: **BO873 BE-FREE TOP**  
 Norm: **UNI EN ISO 20345:2012**  
 Safety Class: **S3 SRC**

Footwear height: **Mod. B, H 140 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	Impact resistance(200 J)			
SLIMCAP toe-cap	• 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 <sup>8</sup> Ω	≥ 10 <sup>5</sup> Ω , ≤ 10 <sup>9</sup> Ω	6.2.2.2
		humid 7,02 x 10 <sup>8</sup> Ω	≥ 10 <sup>5</sup> Ω , ≤ 10 <sup>9</sup> Ω	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 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 <sup>2</sup>	6.2.5
(M)	Metatarsal protection	N/A	≥ 40 mm	6.2.6

Upper				
Component	Description	Value	Norm Requirements	EN ISO 20345
Waxy full grain	Tear resistance	170 N	≥60 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm <sup>2</sup>	5.4.4
	Water steam permeability	2,2 mg/cm <sup>2</sup> h	≥0.8 mg/cm <sup>2</sup> 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 ISO 20345
3D hi-tech Fabric	Tear resistance	30 N	≥ 15 N	5.5.1
	Abrasion resistance	<ul style="list-style-type: none"> <li>Dry : the surface shows no holes</li> <li>humid: the surface shows no holes</li> </ul>	<ul style="list-style-type: none"> <li>No holes till 51.200 cycles</li> <li>No holes till 25.600 cycles</li> </ul>	5.5.2
	Water steam release	7,2 mg/cm <sup>2</sup> h	≥ 2,0 mg/cm <sup>2</sup> 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 ISO 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 <sup>2</sup>	≥ 70 mg/cm <sup>2</sup>	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 ISO 20345
Anatomical, breathable, in tessuto and expanded polymeric material	Thickness	3,5±0,5 mm	N/A	5.7.1
	pH value	N/A	Non rilevabile	5.7.2
	Water absorption	Permeable	Permeable o ≥ 70mg/cm <sup>2</sup>	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		5.7.5

Sole				
Component	Description	Value	Norm Requirements	EN ISO 20345
	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
Midsole: PU low density;	Abrasion resistance	35 mm <sup>3</sup>	≤ 250 mm <sup>3</sup>	5.8.3
	<ul style="list-style-type: none"> <li>relative volume loss</li> </ul>			
Outsole TPU SKIN: (TPU high density)	<ul style="list-style-type: none"> <li>Flexion resistance</li> </ul>	1,5 mm	≤ 4 mm	5.8.4
	Notches increase after 30.000 cycles	2 mm	≤ 6 mm	5.8.5
	<ul style="list-style-type: none"> <li></li> </ul>			
	Hydrolysis	N/A	≥ 4 N/mm; (*) ≥ 3 N/mm with sole ripping	5.8.6
	Notches increase after 150.00 cycles	N/A	No damage (melting, breaking)	6.4.1
		0,7 %	≤ 12%	6.4.2

Date: 27/02/2015

Issued by: Responsible technician Eng. Cataldo De Luca

Signature:



