

## TECHNICAL SHEET



Article:  
Norm:  
Safety Class:  
Footwear height:  
Width

**B1007A K-ENERGY**  
**UNI EN ISO 20345:2012**  
**S3 HRO SRC**  
**Mod. A, H 87 mm (< 113 mm, Rif. EN ISO 20345-5.2.2)**  
**11,5**

Construction  
Cleaning and  
maintenance:

**STROBEL; SUOLA BIDENSITA' APPLICATA PU/GOMMA**

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:

**Construction, heavy industry, light industry, shipbuilding, big plants, handicraft, agriculture, miner, extractive**

### Entire footwear: components

Component	Description	Value	Norm Requirements	EN 20345
Aluminium toe-cap	Impact resistance (200 J)	17,0 mm	≥ 14 mm	
	• Free height after impact			5.3.2.3
Sole (SRC)	Compression resistance (15 kN)	21,0 mm	≥ 14 mm	
	• Free height after compression			5.3.2.4
Sole (SRC)	Slip resistance			
	• SRA – sole (entire sole)	0,56	≥ 0,32	5.3.5.4
	• SRA – heel (angle of 7°)	0,36	≥ 0,28	5.3.5.4
	• SRB – sole (entire sole)	0,20	≥ 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
Footbed (A)	Antistatic properties	dry 5,80 x 10 <sup>8</sup> Ω	≥ 10 <sup>5</sup> Ω , ≤ 10 <sup>9</sup> Ω	6.2.2.2
	• Electrical resistance	humid 7,45 x 10 <sup>7</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
Cold (CI)	• Insole temperature release	N/A	≤ 10°C	6.2.3.2
Heel (E)	Shock-absorption in the heel region	29 J	≥ 20 J	6.2.4
(WR)	Water resistance (water absorption)	N/A	≤ 3 cm <sup>2</sup> wetted area after 4800 cycles	6.2.5
		N/A	≥ 40 mm	6.2.6

### Upper

Component	Description	Value	Norm requirements	EN 20345
K-energy fabric	Tear resistance	68 N	≥ 120 N	5.4.3
	Traction resistance	N/A	≥ 15 N/mm <sup>2</sup>	5.4.4
	Water stream permeability	4,1 mg/cm <sup>2</sup> h	≥ 0.8 mg/cm <sup>2</sup> h	5.4.6
	pH value	N/A	≥ 3,2	5.4.7
	Chromium VI	N/A	Not detectable	5.4.9
	Water passed	0,00 g	≤ 0.2 g	6.3
	Water absorption	18	≤ 30%	6.3

### Lining

Component	Description	Value	Norm Requirements	EN 20345
3D 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
3D Fabric		• Humid: the surface shows no holes	No holes till 25.600 cycles	5.5.2
	Water stream release	21,1 mg/cm <sup>2</sup> h	≥ 2,0 mg/cm <sup>2</sup> 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	Thickness	3,7 mm	≥ 2,0 mm	5.7.1
	pH value	N/A	Not detectable	5.7.2
	Water absorption	82 mg/cm <sup>2</sup>	≥ 70 mg/cm <sup>2</sup>	5.7.3
	Water release	90 %	≥ 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	Thickness	3,5±0,5 mm (punta) 9±0,5 mm (tacco)	N/A	5.7.1
	pH value	N/A	Not detectable	5.7.2
	Water absorption	Permeable through the holes	Permeable or ≥ 70mg/cm <sup>2</sup>	5.7.3
	Water release	Permeable through the holes	Permeable or ≥ 80%	5.7.4.2
	Abrasion resistance	No damage	Dry: no holes till 25600 cycles humid: no holes till 12800	5.7.5

Sole				
Component	Description	Value	Norm requirements	EN 20345
Midsole PU; Gummi outsole	Sole thickness without profile	6 mm	≥ 4 mm	5.8.1.1
	Profile height	4 mm	≥ 2,5mm	5.8.1.3
	Tear resistance	8,3 kN/m	≥ 8 kN/m	5.8.2
	Abrasion resistance			
	• Relative volume loss	75 mm <sup>3</sup>	≤ 150 mm <sup>3</sup>	5.8.3
	Flexion resistance			
	Notches increase after 30.000 cycles			
	• Hydrolysis	1,5mm	≤ 4 mm	5.8.4
	Notches increase after 150.00 cycles			
	Sole thickness without profile			
• (HRO) (Contact heat resistance 300°C)	2 mm	≤ 6 mm	5.8.5	
(FO) Fuel resistance (volume changes)				
Sole thickness without profile	4,7	≤ 4 N/mm; (* ) ≤ 3 N/mm with sole ripping	5.8.6	
Profile height	No damage	No damage (melting, breaking)	6.4.1	
Tear resistance	2 %	≤ 12%	6.4.2	

Data: 14/10/2019

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