

TECHNICAL SHEET



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|---------------------------------------|---|
| Article: | B0886 BE-STYLE ESD |
| Norm: | UNI EN ISO 20345:2012 |
| Safety Class: | S1 P SRC ESD |
| ESD protection for electronic devices | CEI EN 61340-5-1:2008, CEI EN 61340-4-5:2006 and CEI EN 61340-4-3:2002 |
| Footwear height: | Mod. A, H 99 mm (< 113 mm; Ref. EN 20345-5.2.2) |
| Width: | 12 |
| Construction: | STROBEL; DUAL DENSITY 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)

Environmental Class 1 (Temperature = 23±2°C; Relative Humidity = 12±3%)



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

| 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 | 15mm | ≥ 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°) | 0,45 0,39 0,32 0,28 | ≥ 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 |
| Foot bed (A) | Antistatic properties • Electrical resistance | dry 5,7 x 10 ⁶ Ω humid 2,4 x 10 ⁶ 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 Insole temperature decrease | N/A N/A | ≤ 22°C ≤ 10°C | 6.2.3.1 6.2.3.2 |
| Heel (E) | Shock-absorption in the heel region | 38 J | ≥ 20 J | 6.2.4 |
| (WR) (M) | Water resistance (Water absorption) Metatarsal protection | N/A N/A | ≤ 3 cm ² ≥ 40 mm | 6.2.5 6.2.6 |

| Upper | | | | |
|------------|--------------------------|--------------------------|----------------------------|----------|
| Component | Description | Value | Norm Requirements | EN 20345 |
| | Tear resistance | 80 N | ≥ 60 N | 5.4.3 |
| | Traction resistance | N/A | ≥ 15 N/mm ² | 5.4.4 |
| Suede | Water steam permeability | 2,8 mg/cm ² h | ≥ 0.8 mg/cm ² h | 5.4.6 |
| Microfiber | pH value | N/A | ≥ 3,2 | 5.4.7 |
| | Chromium VI | N/A | Non detectable | 5.4.9 |
| | Water passed | N/A | ≤ 0.2 g | 6.3 |
| | Water absorption | N/A | ≤ 30% | 6.3 |

| Lining | | | | |
|-------------------|---------------------|---|--|----------------|
| Component | Description | Value | Norm Requirements | EN 20345 |
| | 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 No holes till 25.600 cycles | 5.5.2 5.5.2 |
| 3D hi-tech Fabric | Water steam release | 7,2 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 | 3,5 mm | ≥ 2,0 mm | 5.7.1 |
| | pH value | N/A | Not detectable | 5.7.2 |
| | Water absorption | 107 mg/cm ² | ≥ 70 mg/cm ² | 5.7.3 |
| | Water release | 98 % | ≥ 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 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 cycles | 5.7.4.2 |
| | Chromium VI | N/A | Not detectable | 5.7.5 |

| Sole | | | | |
|---|--|-------------------------|--|-----------------|
| Component | Description | Value | Norm Requirements | EN 20345 |
| Midsole: PU | Sole thickness without profiles | 7,1 mm | ≥ 4 mm | 5.8.1.1 |
| | Profile height | 4,1 mm | ≥ 2,5mm | 5.8.1.3 |
| | Tear resistance | 6,9 kN/m | ≥ 5 kN/m | 5.8.2 |
| Outsole TPU SKIN: (TPU high density) | Abrasion resistance • relative volume loss | 72 mm ³ | ≤ 250 mm ³ | 5.8.3 |
| | Flexion resistance • Notches increase after 30.000 cycles | 1,0 mm | ≤ 4 mm | 5.8.4 |
| | Hydrolysis | 2 mm | ≤ 6 mm | 5.8.5 |
| | • Notches increase after 150.00 cycles | 3,8 N/mm ^(*) | ≥ 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) | 0,8 % | ≤ 12% | 6.4.2 |

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