# TECHNICAL SHEET

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|---|---|
| Article: | **B0898S BE POWERFUL TOP** |
| Norm: | **UNI EN ISO 20345:2012** |
| Safety Class: | **S3 CI WR SRC** |
| Footwear height: | **Mod. B, H 140 mm (≥ 113 mm; Rif. EN 20345-5.2.2)** |
| Width: | **12** |
| Footwear weight size 42: | **659 g** |
| Construction: | **STROBEL; DUAL DENSITY - LIFE PLUS 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: | **Construction, heavy industry, shipbuilding, handicraft.** |

## Entire footwear: components

| Component | Description | Value | Norm Requirements | EN 20345 |
|---|---|---|---|---|
| Metal-free SLIMCAP toe-cap | Impact resistance (200 J) | | | |
| | • Free height after impact | 14,5 mm | ≥ 14 mm | 5.3.2.3 |
| | Compression resistance (15 kN) | | | |
| | • Free height after compression | 15,5 mm | ≥ 14 mm | 5.3.2.4 |
| Sole (SRC) | Slip resistance | | | |
| | • SRA – sole (entire sole) | 0,45 | ≥ 0,32 | 5.3.5.4 |
| | • SRA – heel (angle of 7°) | 0,36 | ≥ 0,28 | 5.3.5.4 |
| | • SRB – sole (entire sole) | 0,28 | ≥ 0,18 | 5.3.5.4 |
| | • SRB – heel (angle of 7°) | 0,28 | ≥ 0,13 | 5.3.5.4 |
| Fresh'nFlex(P) | Puncture resistance | No perforation | ≥ 1100 N | 6.2.1 |
| Footbed (A) | Antistatic properties | | | |
| | • Electrical resistance | Dry: 5,7 x $10^8$ Ω | ≥ $10^5$Ω , ≤ $10^9$Ω | 6.2.2.2 |
| | | Humid: 2,4 x $10^8$ Ω | ≥ $10^5$Ω , ≤ $10^9$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 decrease | 4 °C | ≤ 10°C | 6.2.3.2 |
| Heel (E) | Shock-absorption in the heel region | 38 J | ≥ 20 J | 6.2.4 |
| (WR) | Water resistance (water absorption) | <3 $cm^2$ wet area after 15000 cycles | ≤3 $cm^2$ wet area after 4800 cycles | 6.2.5 |
| (M) | Metatarsal protection | N/A | ≥ 40 mm | 6.2.6 |

## Upper

| Component | Description | Value | Norm requirements | EN 20345 |
|---|---|---|---|---|
| | Tear resistance | 189 N | ≥120 N | 5.4.3 |
| | Traction resistance | 19 N/$mm^2$ | ≥ 15 N/$mm^2$ | 5.4.4 |
| Suede leather+ H2STOP membrane | Water stream permeability | 0,9 mg/$cm^2$ h | ≥0,8 mg/$cm^2$ h | 5.4.6 |
| | Water steam coefficient | 15,2 mg/$cm^2$ | ≥ 3,2 | 5.4.6 |
| | pH value | 4,05 | ≥ 15 mg/$cm^2$ | 5.4.7 |
| | Chromium VI | Not detected | Not detectable | 5.4.9 |
| | Water passed | 0,0 g | ≤ 0.2 g | 6.3 |
| | Water absorption | 6 % | ≤ 30% | 6.3 |
| | Tear resistance | 245 N | ≥60 N | 5.4.3 |
| | Traction resistance | N/A | ≥ 15 N/$mm^2$ | 5.4.4 |

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|---|---|---|---|---|
| Technic Textile + H2stOp membrane | Water steam permeability | 2,0 mg/cm² h | ≥ 0.8 mg/cm² h | 5.4.6 |
| | Water steam coefficient | 18,3 mg/cm² | ≥ 15 mg/cm² | *5.4.6* |
| | pH value | N/A | ≥ 3,2 | 5.4.7 |
| | Chromium VI | N/A | Not detectable | 5.4.9 |
| | Water passed | 0,03 g | ≤ 0.2 g | 6.3 |
| | Water absorption | 20 % | ≤ 30% | 6.3 |
| Suede leather+ H2STOP membrane | Tear resistance | 188 N | ≥120 N | 5.4.3 |
| | Traction resistance | 19 N/mm2 | ≥ 15 N | 5.4.4 |
| | Water steam permeability | 4,2 mg/cm2 h | ≥0,8 mg/cm2 h | 5.4.6 |
| | Water steam coefficient | 42,4 mg/cm² | ≥ 15 mg/cm² | 5.4.6 |
| | pH value | 4,05 | ≥ 3,2 | 5.4.7 |
| | Chromium VI | N/A | Not 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 | 47 N | ≥ 15 N | 5.5.1 |
| | Abrasione resistance | • Dry: the surface shows no holes | No hole still 51.200 cycles | 5.5.2 |
| | | • Humid: the surface shows no holes | No holes till 25.600 cycles | 5.5.2 |
| | Water steam release | 21,1 mg/cm² h | ≥ 2,0 mg/cm² 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 | 86 mg/cm² | ≥ 70 mg/cm² | 5.7.3 |
| | Water release | 94 % | ≥ 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 |
|---|---|---|---|---|
| Coupled Breathable technical textile to expanded polymer material | Thickness | 3 ±0,5 mm (tip) 11±0,5 mm (heel) | N/A | 5.7.1 |
| | pH value | N/A | Not detectable | 5.7.2 |
| | Water absorption | Permeable through the holes | Permeable or≥ 70mg/cm² | 5.7.3 |
| | Water release | Permeable through the holes | 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 |

**Footwear also certified with B07, DRY'N AIR SCAN&FIT OMNIA, DRY'N AIR GEL, SECOSOL and SECOSOL COMPLETE footbeds*

## Sole

| Component | Description | Value | Norm requirements | EN 20345 |
|---|---|---|---|---|
| Midsole PU; Outsole TPU SKIN | Sole thickness without profiles | 6,0 mm | ≥ 4 mm | 5.8.1.1 |
| | Profile height | 4,0 mm | ≥ 2,5 mm | 5.8.1.3 |
| | Tear resistance | 6,0 kN/m | ≥ 8 kN/m | 5.8.2 |
| | Abrasion resistance<br>• Relative volume loss | 65 mm³ | ≤ 250 mm³ | 5.8.3 |
| | Flexion resistance | | | |

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| | | | |
|---|---|---|---|
| • Notches increase after30.000 cycles | 2,0 mm | ≤ 4 mm | 5.8.4 |
| Hydrolysis<br>• Notches increase after 150.00 cycles | 4,0 mm | ≤ 6mm | 5.8.5 |
| Outsole/Midsole detachment | N/A | ≤ 4 N/mm;<br>(*) ≤ 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) | 3,0 % | ≤ 12% | 6.4.2 |

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