Phosphor Bronze (Copper-Tin) BF03

Material Designation

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<th>Nominal Composition (mass content in %)</th>
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Nominal Composition (mass content in %)

- **Cu**: Balance
- **Sn**: 0.3 %
- **Zn**: ≤ 0.01 %
- **Ni**: ≤ 0.01 %
- **Fe**: ≤ 0.01 %
- **P**: ≤ 0.01 %
- **Pb**: ≤ 0.005 %
- **Others**: ≤ 0.1 %

About the Alloy

Low-alloyed copper alloys exhibit a high electrical conductivity. Due to small additions of Sn the cold-forming and softening properties are improved.

BF03 has superior softening resistance compared to ETP-Cu and offers a good cold forming performance and fine wire drawability.

Its balanced composition and its physical properties make BF03 to an excellent electronic alloy particularly in applications for wiring harnesses.

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Physical Properties*

- **Electrical conductivity**: 42.9 MS/m ≥ 74 % IACS
- **Thermal conductivity**: 290 W/(m·K)
- **Thermal expansion coefficient**: 17 *10^-6/K
- **Density**: 8.9 g/cm³
- **Modulus of elasticity**: 125 GPa = kN/mm²

* Reference values at room temperature
** Between 20 and 300 °C

Mechanical Properties*

- **Tensile strength soft**: 270 - 320 N/mm²
- **Elongation soft**: > 30 %
- **Tensile strength hard**: ≥ 620 N/mm²

* Reference values

Available Dimensions

- **Round wire**: 1.2 - 2 mm in coils max. 100 kg
- **0.5 - 2 mm on reels**: max. 1000 kg
- **1.5 - 3 mm on acropaks**: max. 400 kg
- **On request**: in drums max. 400 kg

Typical Applications

- Conductor and connector wire
- Pins
- Wire harnesses