

Product datasheet

SynWire type 180, Copper Wire, round,
enamelled, self bonding
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SynWire type 180, Copper Wire, round, enamelled, self bonding

- enamelled round copper wire, self-bonding
- insulated with solderable polyester and aliphatic polyamide
- class 180

Attributes

The SynWire type 180 is a thermal class H enamelled copper wire which can be directly soldered and bonded under heat. With a solder bath temperature from 470 °C the wire is solderable without prior removal of the insulation film. The SynWire type 180 is a 2-ply self bonding wire which is used to produce thermally stimulated windings in an integral and thus space saving, machine suitable, efficient and cost-effective manner. In contrast to impregnants, these windings can be bonded quickly and environmentally friendly. The self bonding windings are characterised by their thermal and mechanical stability.

State-of-the-art processing techniques, process controls and checks ensure the constant high quality of these wires.

Application

Electric motors, induction coils, stator windings

Standards

IEC / DIN EN 60317-36

Partly UL approved

Delivery forms

Grade 1B + 2B: 0.036 - 1.25 mm

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Updated 04/24



Typical properties of enamelled round self-bonding copper wire, 0.500 mm, with insulation film grade 1B

| Mechanical | Unit of measure | Set value | Actual value (typ.) |
|-------------------------|-----------------|----------------------------|--------------------------------|
| Outer diameter | mm | min. 0.541 - max. 0.568 | as set value |
| Bare wire diameter | mm | 0.495 - 0.505 | as set value |
| Adhesion and elongation | | 1 x d, no cracks | 1 x d / 10% pre- elongation |
| Elongation at break | % | ≥ 28 | ≥28 |
| Adhesiveness at r.t. | N | 1.1 | > 1.1 |

| Thermal | Unit of measure | Set value | Actual value (typ.) |
|--------------------------------------------|-----------------|-----------|---------------------|
| Re-softening temperature | °C | 160 | ≥ 160 |
| Heat shock at 200 °C | | ≥200 | ≥ 200 |
| Solderability at 470 °C | s | ≤ 6 | ≤ 4 |
| Bonding temperature | °C | 200 ± 2 | 180-200 |
| Temperature index TI | | min. 180 | ≥ 180 |
| Cut through temperature (pre-heated block) | °C | min. 265 | ≥ 2 Min. at 265 |

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| Electrical | Unit of measure | Set value | Actual value (typ.) |
|------------------------|-----------------------------|--------------------|---------------------|
| Dielectric strength RT | kV | $\geq 2,4$ (Twist) | $\geq 2,4$ (Twist) |
| Electric conductivity | m/ Ω mm ² | 58.5 | 58.5 |

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