

**Product datasheet**

SynWire type 155, Copper Wire, round,  
enamelled, self bonding  
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**SynWire type 155, Copper Wire, round, enamelled, self bonding**

- enamelled round copper wire, self-bonding
- insulated with solderable polyurethane
- aliphatic polyamide
- class 155

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**Attributes**

The SynWire type 155 is a thermal class F enamelled copper wire which can be directly soldered and self bonded under heat. With a solder bath temperature from 390 °C the wire is solderable without prior removal of the insulation film.

The SynWire type 155 is a 2-ply self bonding wire with a high resoftening temperature 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.

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**Application**

Electric motors, induction coils, stator windings, air coils

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**Standards**

IEC / DIN EN 60317-35

NEMA MW 131-C

Partly UL approved

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**Delivery forms**

Grade 1B + 2B: 0.036 – 1.25 mm

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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                |
|-----------------------------|-----------------|-------------------------|-----------------------------|
| Outer diameter with varnish | 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    |
|--------------------------------------------|-----------------|-----------|-----------------|
| Temperature index TI                       | °C              | min. 155  | > 155           |
| Re-softening temperature                   | °C              | 160       | ≥ 160           |
| Heat shock at 175 °C                       |                 | ≥175      | ≥ 175           |
| Solderability at 390 °C                    | s               | ≤ 6       | ≤ 4             |
| Bonding temperature                        | °C              | 200 ± 2   | 180-200         |
| Cut through temperature (pre-heated block) | °C              | min. 200  | ≥ 2 Min. at 200 |

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| Electrical             | Unit of measure             | Set value          | Actual value       |
|------------------------|-----------------------------|--------------------|--------------------|
| Dielectric strength RT | kV                          | $\geq 2.4$ (Twist) | $\geq 2.4$ (Twist) |
| Electric conductivity  | m/ $\Omega$ mm <sup>2</sup> | 58 - 59            | 58.5               |

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