SynFlex Elektro GmbH
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SynWire type 210, Copper Wire, round, enamelled, self bonding

- selfbonding enamelled round cu.wire, bondable
- insulated with theic-mod. polyesterimide
- plus Amide-Imide overcoat
- plus bonding layer (aromatic polyamide)
- class 200

Attributes

The SynWire type 210 is a thermal class N enamelled copper wire which is highly heat resistant and can be bonded under heat. The wire combines the excellent resistance and insulating properties of the SynWire type 210 with the special application possibilities of the additional self bonding coat of modified aromatic polyamide.
The SynWire type 210 can be used to produce thermally stimulated windings in an integral and thus space saving, machine suitable, efficient and cost-effective manner. In contrast to impregnation, self bonding can be realised quickly and environmentally friendly. The self bonding windings are characterised by their high thermal and mechanical stability and high resistance to climatic demands and many chemical agents. State-of-the-art processing techniques, process controls and checks ensure the constant high quality of these wires.

Application

Drives for household appliances, pole windings, wire wound coils, power tools

Standards

IEC / DIN EN 60317-38
NEMA MW 102-C
UL approved

Delivery forms

Grade 1b + 2B: 0.180 – 2.00 mm

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Updated 04/24

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

Mechanical	Unit of measure	Set value	Actual value (typ.)
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		mandrel diameter 0.500 mm	1 x d / 10% pre-elongation
Scrape resistance	N	≥ 3.950	≥ 7.500
Pencil hardness of varnish		H	3H / 5H
Elongation at break	%	≥ 28	≥ 38
Coefficient of friction	µ	/	≤ 0.140

Thermal	Unit of measure	Set value	Actual value (typ.)
Temperature index TI	°C	200	210
Cut through temperature (pre-heated block)	°C	320	≥360
Dielectric loss factor	(°C)(tan δ)	/	≥140/180/240
Heat shock at 220 °C (no cracks in varnish after winding)		mandrel diameter 1.120 mm	1 x d / 10 % pre-elongation
Bonding temperature	°C	200 ± 2	≥ 180

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Thermal	Unit of measure	Set value	Actual value (typ.)
Re-softening temperature	°C	≥ 180	

Chemical	Set value	Actual value (typ.)
Enamel pencil harness after storage ½ h/60 °C in standard solvent	test methods unsuitalbe	/
Enamel pencil harness after storage ½ h/60 °C in alcohol	test methods unsuitable	/
Resistance to impregnants (1)	/	no
Resistance to refrigerants (1)	/	limited
Resistance to dry transformer oils (1)	/	not recommended
Resistance to hydraulic oils (1)	/	no

Electrical	Unit of measure	Set value	Actual value (typ.)
Dielectric strength RT	kV	≥ 2.4 (Twist)	≥ 3 (Cylinder)
High voltage discontinuities (testing voltage 750 V)		≤ 10 on 30 m	≤ 7 on 100 m
Electrical conductivity of Cu conductor	MS/m	58 - 59	≥ 58.5

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(1) Due to the variety of individual applications we cannot make any generally binding commitments regarding the compatibility. We recommend testing compatibility with the materials being used.

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