SynFlex Elektro GmbH
Auf den Kreuzen 24
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SHBond® WD210

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

Attributes

"SHBond® WD210" is a highly thermo-resistant self-bonding enamelled copper wire of heat performance class N. With this wire the excellent resistance and insulation properties of SHTherm® 210 - Dualcoat are combined with the special application possibilities of an additional bonding layer which is based on mod. aromat. Polyamide and which enables the production of heat bonded wire windings. Using this type of thermo-setting wire the heat bonding process is economic, as it can be executed within seconds and can support automatic processing. It is not harmful to the environment. Heat bonded windings show excellent thermal and mechanical stability and high resistance to climatic demands and many chemical agents. Sophisticated process technology and process setting ensure easy mouldability, good elongation and excellent insulation properties.

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 1: 0.250 - 1.000 mm
Grade 2: 0.300 - 1.000 mm
(> 1.250 mm on request)

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Updated 05/18

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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
Elongation and adhesion		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	°C	200	210
Cut through temperature (pre-heated block)	°C	320	≥ 360
Dielectric loss factor (bending point)	(°C) (tan δ)	/	≥140/180/240
Heat shock at 220 °C (no cracks in varnish coat after winding)		mandrel diameter 1.120 mm	1 x d / 10% pre-elongation
Bonding temperature	°C	200 +/- 2	≥ 180

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

Chemical	Set value	Actual value (typ.)
Pencil hardness (storage in standard solvent ½ h / 60 °C)	test methods unsuitable	/
Pencil hardness (storage in alcohol ½ h / 60 °C)	test methods unsuitable	/
Resistance to commercial impregnants^(1)	/	not applicable
Resistance to commercial refrigerants (1)	/	limited
Resistance to dry transformer oils (1)	/	not recommended
Resistance to hydraulic oils (1)	/	no

(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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