
SHBond® WD210 Alu

- Enamelled round aluminium wire, thermoresistant, selfbonding
- Insulated with THEIC mod. polyesterimide
- plus polyamide-imide overcoat plus bonding layer
- Class 200

Attributes

SHBond® WD210 Alu is a highly thermoresistant self-bonding enamelled aluminium 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

Delivery forms

Grade 1: on request

Grade 2: on request

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

Mechanical	Unit of measure	Set value	Actual value (typ.)
Overall diameter	mm	min. 0.541 - max. 0.568	as set value
Bare wire diameter	mm	0.495-0.505	as set value
Adhesion (no cracks in film after winding)		3 x d	2 x d
Scrape resistance	N	≥ 3.950	≥ 7.500
Pencil hardness		H	3H - 5H
Elongation at break	%	≥ 12	≥ 20
Coefficient of friction	μ	/	≤ 0.140
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Updated 06/18



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 (bending point)	(°C) (tan δ)	/	≥ 140/185/240
Heat shock at 220 °C (no cracks in varnish coat after winding)		3 x d	3 x d
Bonding temperature	°C	200 +/-2	≥ 180
Bonding temperature	°C	200 +/-2	≥ 180
Heat shock at 220 °C (no cracks in varnish coat after winding)		3 x d	3 x d
Dielectric loss factor (bending point)	(°C) (tan δ)	/	≥ 140/185/240
Cut through temperature (pre-heated block)	°C	320	≥ 360
Temperature index TI	°C	200	210

Electrical	Unit of measure	Set value	Actual value (typ.)
Dielectrical strength at RT	kV	≥ 2.4 (twist)	≥ 3 (cylinder)
High voltage discontinuities 750V		≤ 25 on 30 m	≤ 7 on 100 m
Electrical conductivity	MS/m	35.5 - 36.2	≥ 35.85
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Dielectrical strength at RT	kV	≥ 2.4 (twist)	≥ 3 (cylinder)

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

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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.