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SynWire W 200, Flat Copper Wire, enamelled

- Flat copper wire
- Insulated with THEIC-mod. polyesterimide
- Plus polyamid-imide
- Class 200/220

Attributes

SynWire W 200 is a highly thermoresistant rectangular enamelled copper wire of heat performance class N with a wide range of excellent quality features. Its insulation film consists of 2 different coatings on top of one another. These ensure a very good permanent thermal and overload resistance, excellent resistance against mechanical stress, as well as an excellent resistance to chemical attacks of commercial washing and cleaning agents, impregnating varnishes and resins, sealing compounds, thinners, solvents and refrigerants, oils as well as their vapours. This range of excellent features make SynWire W 200 an all-round wire meeting the requirements of all applications with above average requirements to processing and operational features or operational safety in electrical systems.

Application

E-mobility, electric motors, generators, transformers, hybrid constructions

Standards

IEC / DIN EN 60317-29
IEC 60317-0-2
NEMA MW 36-C / MW 38-C
Partly UL approved

Delivery forms

Nominal thickness D: 0.8 to 5.0 mm
Nominal width B: 2.0 to 25.0 mm
Grade 1 on request
Grade 2 standard

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Typical properties of enamelled flat copper wire 5.60 x 3.55 mm, with insulation film grade 2

Mechanical	Unit of measure	Set value	Actual value (typ.)
Width with varnish	mm	5.67 - 5.82	as set value
Thickness with varnish		3.62 - 3.77	as set value
Pencil hardness of varnish		H	4H - 5H
Elongation at break	%	≥32	≥ 38
Elongation and adhesion (no cracks in varnish after winding) - bend over width		4 x width	3 x width
Elongation and adhesion (no cracks in varnish after winding) - bend over thickness		4 x thickness	3 x thickness
Elongation and adhesion (no cracks in varnish after winding) - elongation		15 % with crack <1 x width	32 % without cracks

Electrical	Unit of measure	Set value	Actual value (typ.)
Dielectric strength RT	kV	≥ 2.0 (ball pit)	≥ 3.0 (ball pit)
High voltage discontinuities (testing voltage 750 V)		/	≤ 7 on 100 m
Electrical conductivity of Cu conductor	MS/m	58-59	≥58.5

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Thermal	Unit of measure	Set value	Actual value (typ.)
Heat shock at 220 °C (no cracks in varnish after winding)		Mandrel diameter: 6 x thickness	Mandrel diameter 4 x thickness
Solderability		no	no
Temperature index TI	°C	200/220	210/220

Chemical	Set value	Actual value (typ.)
Enamel pencil harness after storage ½ h/60 °C in standard solvent	min. H	3H - 5H
Enamel pencil harness after storage ½ h/60 °C in alcohol	min. H	3H - 5H
Resistance to impregnants ^(1)	/	yes
Resistance to commercial refrigerants^(1)	/	yes
Resistance to dry transformer oils^(1)	/	yes
Resistance to hydraulic oils^(1)	/	yes

(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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