SynFlex Elektro GmbH
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SHSold® V180

- Solderable enamelled round cu.wire
- Insulated with polyurethane
- Class 180

Attributes

SHSold® V180 is an enamelled copper wire of thermal performance class H and allows quick and direct soldering. The most outstanding characteristics of the wire is the possibilty of efficient and safe contacting of the wire ends by quick and exact soldering at solder bath temperatures from 390 °C upwards without prior mechanical removal of the insulation film. This type of enamelled copper wires fulfills the technical requirements of modern winding techniques and can be well impregnated and cast with compounds in accordance with the manufacturer's instructions. The excellent thermal resistance characteristics offer protection when wire-wound coils have to be compound cast and when subject to short-time overloads. The chemical resistance to aggressive liquid and gaseous mediums is limited, and therefore we recommend that you carry out compatibility tests before using this enamelled copper wire.

SHSold® V180 can be easily welded and mechanically connected. Sophisticated process technology and process setting ensure easy mouldability, good elongation plus constant and good insulation characteristics of these wires.

Application

Contactors, magnetic coils, relays, small motors, transformers, inverters.

Standards

IEC / DIN EN 60317-51
NEMA MW 82-C
UL File No. E75926(M)

Delivery forms

Grade 1: 0.050 - 1.600 mm (> 1.600 mm on rquest)
Grade 2: on request

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Updated 05/18

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

Mechanical	Unit of measure	Set value	Actual value
Outer diameter with varnish	mm	min. 0.524 - max. 0.544	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	≥ 3.100	≥ 6
Pencil hardness of varnish		H	2H - 3H
Elongation at break	%	≥ 28	≥ 37
Coefficient of friction	µ	/	≤ 0.140

Thermal	Unit of measure	Set value	Actual value	Actual value
Temperature index	°C	180	185	
Cut through temperature (pre-heated block)	°C	230	≥ 230	
Dielectric loss factor (bending point)	(°C) (tan δ)	/	≥ 140	
Heat shock at 200 °C		mandrel diameter: 1.120 mm	1 x d /10 % pre-elongation	
Solderability at 390 °C	s	≤ 4	≤ 2.5	

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Electrical	Unit of measure	Set value	Actual value
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
Pencil hardness (storage in standard solvent ½ h / 60 °C)	min. H	2H - 3H
Pencil hardness (storage in alcohol ½ h / 60 °C)	min. H	H
Resistance to commercial impregnants^(1)	/	yes
Resistance to commercial refrigerants (1)	/	no
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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