SynFlex Elektro GmbH
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SHTherm® 220 Glide

- Enamelled round copper wire, thermoresistant and self lubricating
- Insulated with polyamide-imide
- Class 220

Attributes

SHTherm® 220 Glide is a highly thermoresistant enamelled copper wire of heat performance class R with superior thermal, chemical and mechanical resistance. It is used for special applications requiring the following criteria:

- very high permanent thermal resistance and short-time thermal overload
- very good resistance to aggressive mediums in liquid or gas form

SHTherm® 220 is ideally suited for use in special safety-relevant and electrical life support equipment. Sophisticated process technology and process setting ensure easy mouldability, good elongation and constant insulation properties of these wires.
The final layer of varnish serves the purpose of providing a superior gliding surface, giving the wire excellent windability features at higher speeds, and enabling a higher filling factor plus reduced soiling of the winding machines. The reduced coefficient of friction helps to avoid damage to the wire during winding and thus maintains the insualtion properties of the wire.

Application

E-Mobility, control gears, electric motors, power tools, pump drives, refrigerators, special drives, special applications in the medical field

Standards

IEC / DIN EN 60317-26
UL approved

Delivery forms

Grade 1: 0.200 - 1.200 mm (>1.200 mm on request)
Grade 2: on request

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Updated 06/18

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

Mechanical	Unit of measure	Set value	Actual value (typ.)
Overall diameter	mm	min. 0.524 - max. 0.544	as set value
Bare wire diameter	mm	0.495-0.505	as set value
Adhesion (no cracks in film after winding)		mandrel diameter 0.500 mm	1 x d / 10 % pre-elongation
Scrape resistance	N	≥ 3.950	≥ 7.500
Pencil hardness		H	5H - 6H
Elongation at break	%	≥ 28	≥ 38
Coefficient of friction	µ	/	≤ 0.110

Thermal	Unit of measure	Set value	Actual value (typ.)
Temperature index TI	°C	220	220
Cut through temperature (pre-heated block)	°C	350	≥ 400
Dielectric loss factor (bending point)	(°C) (tan δ)	/	≥ 240
Heat shock at 240 °C (no cracks in varnish coat after winding)		mandrel diameter 1.120 mm	1 x d / 10 % pre-elongation
Solderability		no	no

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Electrical	Unit of measure	Set value	Actual value (typ.)
Dielectrical strength at RT	kV	≥ 2.4 (twist)	≥ 5 (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)	min. H	4H - 6H
Pencil hardness (storage in alcohol ½ h / 60 °C)	min. H	4H - 6H
Resistance to commercial impregnants^(1)	/	yes
Resistance to commercial refrigerants^(1)	/	yes
Resistance to commercial dry transformer oils^(1)	/	yes
Resistance to commercial 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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