SynFlex Elektro GmbH
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SHTherm® 220

- Enamelled round cu.wire, thermo-resistant,
- Insulated with polyamide-Imide
- Class 220

Attributes

"SHTherm® 220" is a highly thermo-resistant enamelled copper wire with 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.

Application

Control gears, electric motors, electrical tools, pump drives, refrigerators, special applications in the medical field

Standards

IEC / DIN EN 60317-26
UL approved

Delivery forms

Grade 1: on request
Grade 2: 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 1

Mechanical	Unit of measure	Set value	Actual value (typ.)
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	≥ 3.950	≥ 7.500
Pencil hardness of varnish		/	4H - 6H
Elongation at break	%	≥ 28	≥ 38
Coefficient of friction	µ	/	≤ 0.140

Thermal	Unit of measure	Set value	Actual value (typ.)
Temperature index TI		220	220
Cut through temperature (pre-heated block)	°C	350	≥ 400
Dielectric loss factor (bending point)	(°C) (tan δ)	/	≥ 240
Heat shock at 220 °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.)
Dielectric strength 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 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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