SynFlex Elektro GmbH
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Single core conductor BETAtherm® 145 halogen free

BETAtherm® 145 is a flexible low-voltage cable with UL recognition consisting of a tinned copper stranded wire and insulated with coloured electron-beam crosslinked polyolefine copolymer.

Attributes

Due to its electron-beam cross-linked insulation BETAtherm® 145 achieves extremely high - still class B - thermal resistance. This results in excellent thermalresistance. However, it cannot even be melted at elevated temperatures and has thus to be skinned during processing. Skinning is simple and also possible at machines. BETAtherm® cables are halogen free and flame retardant.

Application

BETAtherm® 145 halogen free is suitable for the wiring of electric machines, lamps, heating appliances, switchboards and distributors in apparatus, machine and plant engineering. Usage is also possible at ambient temperatures above 55° C. BETAtherm® 145 halogen free is suitable for laying in pipes, surface and flush installations, as well as in closed installation channels.

Standards

- DIN VDE 0295, Class 5

Delivery forms

Conductor cross sect. / mm²	Length / m	Make-up
0.25	300 m	cardboard box
0.5	200 m	cardboard box
0.75 - 4.0	100 m	cardboard box
6.0 - 16.0	100 m	Ring
25.0 - 95.0	on request	on request

Other cross sections on request.

Conductor

Tinned copper wire VDE 0295/ IEC 60228 class 5.

The dimensions specified in the checklist are regarded as standard values. The actual cross sections may vary. The cables are manufactured according to European standards with a metric conductor cross section, AWG sizes are approximate values and vice-versa. Always observe relevant standards valid for divergent operating conditions when laying for greater limit current loads.

Color

Green-yellow, black, light blue, red, white and green.

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Brown, grey, violet, orange, yellow are available on request.

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Dimension	Unit of measure						
Nominal cross section	mm²	0.25	0.5	0.75	1	1.5	2.5
Strands x diameter	mm	14 x 0.15	16 x 0.20	24 x 0.20	32 x 0.20	27 x 0.25	45 x 0.25
Cu Litz nom. diameter	mm	0.65	0.90	1.15	1.25	1.55	2.05
Wall thickness desired	mm	0.45	0.48	0.53	0.58	0.70	0.80
Wall thickness min.	mm	0.35	0.35	0.35	0.40	0.53	0.62
Outer diameter	mm	1.55 ± 0.10	1.85 ± 0.20	2.20 ± 0.20	2.40 ± 0.20	2.95 ± 0.20	3.65 ± 0.20
Thermal load	kWh/m	0.009	0.012	0.017	0.020	0.030	0.043

Dimension	Unit of measure						
Nominal cross section	mm²	4	6	10	16	25	35
Strands x diameter	mm	52 x 0.30	78 x 0.30	74 x 0.40	119 x 0.40	181 x 0.40	257 x 0.40

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Dimension	Unit of measure						
Cu Litz nom. diameter	mm	2.55	3.10	4.10	5.0	6.20	7.70
Wall thickness desired	mm	0.80	0.80	1.00	1.1	1.20	1.20
Wall thickness min.	mm	0.62	0.62	0.80	0.90	0.98	0.98
Outer diameter	mm	4.15 ± 0.20	4.70 ± 0.20	6.10 ± 0.40	7.20 ± 0.40	8.60 ± 0.40	10.10 ± 0.40
Thermal load	kWh/m	0.051	0.060	0.097	0.127	0.168	0.225

Dimension	Unit of measure			
Nominal cross section	mm²	50	70	95
Strands x diameter	mm	371 x 0.40	336 x 0.50	444 x 0.50
Cu Litz nom. diameter	mm	9.70	11.20	12.8
Wall thickness desired	mm	1.40	1.40	1.60
Wall thickness min.	mm	1.16	1.16	1.34
Outer diameter	mm	12.50 ± 0.40	14.0 ± 0.40	16.0 ± 0.60
Thermal load	kWh/m	0.348	0.404	0.500

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Mechanical	Unit of measure	Value
Tensile strength	N/mm²	≥ 12
Elongation at break	%	≥ 150
Stripping		good

Thermal	Unit of measure	Value
Thermal class		B
Temperature range fixed application	°C	-55 up to +145
Temperature range active	°C	-35 up to +120
In case of short-circuit		+280 °C max. 5 sec.
Soldering resistance		very good
Behaviour in fire		fire retardent

Electrical	Unit of measure	Value
Rated voltage	V	U0/U 300/500 ≤ 1 mm^2
Rated voltage	V	U0/U 470/750 ≥ 1.5 mm^2
Nominal voltage with fixed and protected application	V	U0/ U 600/1000 V ≥ 1.5 mm² AC
Testing voltage	V	5000 - 50 Hz / 2 min.

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Electrical	Unit of measure	Value
Insulation resistance	Ω	> 10^15

Chemical	Conditions	Value	Test method
Insulation		Electron-beam crosslinked polyolefine-copolymer	
Oil resistance	72h / 100 °C	resistant	EN 50264-1. IRM 902
Resistance	168h / 70 °C	fuels	EN 50264-1. IRM 903