SINGLE-CORE CABLES

BETAtherm® 145

Temperature resistant heat class B, CPR tested



Application

Typical applications are internal wiring in lamps, heating appliances, electric machines (thermal class B) switchboards and distribution boxes in apparatus, mechanical and plant engineering.
Used for laying in tubes, surface wiring, direct in plaster or underneath it, as well in conduits. May not be laid directly in cable trays, cable racks or cable troughs.

Construction

Conductor	Tinned fine copper strand acc. to VDE 0295 / IEC 60228, class 5
Insulation	Polyolefin Copolymer, electronbeam cross-linked
Core colour	green-yellow, black, light-blue, brown, red, white, grey, violet, orange, yellow, green, dark-blue. Other colours, also two-coloured upon request

Advantages

- Very high resistance to temperature
- service temperature up to +145 °C
- Resistance to cold down to –55 °C
- Best fire performance, halogenfree
- Electron-beam cross-linked
- Different approvals available

0000136 V06 © Studer Cables AG / Technical modifications reserved

Electrical properties

Rated value	U0/U ≤ 1 mm2	300 / 500 V
Rated value	U0/U ≥1.5 mm2	450 / 750 V
Rated value	U0/U ≥1.5 mm2	600 / 1000 V AC*
Rated value	U0/U ≥1.5 mm2	750 / 1500 V DC*
Test voltage		5.0 kV, 50 Hz / 5 min.

Thermal properties

Operating temperature	Fixed installation	-55 to + 145°C
Operating temperature	Occasionally moved	-35 to + 120°C
Max. short circuit temperature		+280°C (max. 5s)

Mechanical properties

Bending radius	Fixed installation	≥4 x Ø
Bending radius	Occasionally moved	≥6 x Ø

Material properties / Standards

Halogenfree	IEC 60754-1, EN 50267-2-1
No corrosive gases	IEC 60754-2, EN 50267-2-2
No toxic gases	NF X 70-100
Low smoke density	IEC 61034, DIN EN 61034, EN 50268-2
Flame retardant	EN IEC 60332-1-2
Non-flame propagating	IEC 60332-3, DIN EN 60332-3, EN 50266-2
Low fire load	DIN 51900

Material properties / Standards

Cross-linked insulating compound HF90	IEC 60092-360
Oil resistant	EN 50264-1, 72h/100°C, IRM 902
Fuel resistant	EN 50264-1, 168h/70°C, IRM 903
Weatherproof (incl. UV resistant)	ISO 4892-2 A1
Fire properties acc. (CPR)	
Dca- s2, d2, a1	EN 50575, EN 13501-6
Fire performance Dca	EN 50399
Medium smoke emission s2	EN 50399
Drip off behavior d2	EN 50399
Very low corrosive gases a1, halogenfree	EN 60754-2

Approvals

VDE	VDE REG No. 9887, Certificate No. 100609 (SO 07Z-K). Only valid for cross-sections ≥ 1.5mm2 (0.25 - 1.0mm2 are dimensioned according to SEV standard)
DNV / GL	Certificate No. TAE00001RU
Lloyd's Register	Certificate No. LR2016614TA
BUREAU VERITAS	Certificate No. 13349/E0 BV
ÖVE Zertifikat	CPR identification code CCHDA0000044

Additional information

* fixed and protected installation

0000136 V06© Studer Cables AG / Technical modifications reserved

Construction Cross-sec. [mm2]	Conductor-Ø [mm]	R_{20} [mΩ/m]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no. Black	Part no. White	Part no. Red	Part no. Light blue	Part no. Green-yellow	Part no. Brown	Part no. Orange	Part no. Grey
0.25	0.65	77.5	1.55 ± 0.1	5	0.009	190792	190793	190798	190794	190799	190797	212324	215088
0.33	0.75	57.2	1.65 ± 0.1	6	0.010	213862	214206	212377	*	*	*	*	223155
0.5	0.90	40.1	1.85 ± 0.2	8	0.012	190808	190809	190814	190810	190815	190813	219356	211454
0.75	1.15	26.7	2.2 ± 0.2	11	0.017	190816	190817	190822	190818	190823	190821	211662	211399
1	1.25	20	2.4 ± 0.2	14	0.020	190824	190825	190830	190826	190831	190829	191549	191551
1.5	1.55	13.7	2.95 ± 0.2	20	0.030	190832	190833	190838	190834	190839	190837	191555	191554
2.5	2.05	8.21	3.65 ± 0.2	32	0.043	190840	190841	190846	190842	190847	190845	21276	211400
4	2.55	5.09	4.15 ± 0.2	46	0.051	190848	190849	190854	190850	190855	190853	300694	211401
6	3.10	3.39	4.7 ± 0.2	65	0.060	190856	190857	190862	190858	190863	190861	*	211864
10	4.10	1.95	6.1 ± 0.4	108	0.097	190864	218511	217184	191556	191557	218311	318033	211865
16	5.00	1.24	7.2 ± 0.4	164	0.127	190865	309968	211333	211334	211335	212169	*	211866
25	6.20	0.795	8.6 ± 0.4	247	0.168	190866	*	*	213563	212373	223798	*	*
35	7.70	0.565	10.1 ± 0.4	349	0.225	190867	*	317739	215266	211496	223799	*	211868
50	9.70	0.393	12.5 ± 0.4	507	0.348	190868	*	217185	215265	211574	*	*	211869
70	11.20	0.277	14.0 ± 0.4	691	0.404	190869	*	224048	300541	211984	*	*	306906
95	12.80	0.21	16.0 ± 0.6	912	0.500	190870	*	*	*	213697	*	*	*
120	14.60	0.164	17.8 ± 0.6	1138	0.555	210750	*	*	*	309780	*	*	*
150	16.40	0.132	20.0 ± 0.6	1436	0.761	210751	*	*	*	219494	*	*	*
185	17.90	0.108	21.9 ± 0.6	1725	0.838	191675	*	*	*	309779	*	*	*
240	20.70	0.0817	25.1 ± 0.6	2278	1.043	210752	*	*	*	*	*	*	*
300	23.30	0.0654	28.1 ± 0.6	2872	1.341	301298	*	*	*	*	*	*	*

0000136 V06© Studer Cables AG / Technical modifications reserved

Construction Cross-sec.	Conductor-Ø	R_{20}	Outer-Ø	Weight	Fire load	Part no.	Part no.	Part no.	Part no.				
[mm2]	[mm]	[mΩ/m]	[mm]	[kg/km]	[kWh/m]	Green	Yellow	Purple	Dark blue				
0.25	0.65	77.5	1.55 ± 0.1	5	0.009	190795	190796	312234	*				
0.33	0.75	57.2	1.65 ± 0.1	6	0.010	*	*	*	*				
0.5	0.90	40.1	1.85 ± 0.2	8	0.012	190811	190812	213414	191558				
0.75	1.15	26.7	2.2 ± 0.2	11	0.017	190819	190820	211663	191676				
1	1.25	20	2.4 ± 0.2	14	0.020	190827	190828	191550	191548				
1.5	1.55	13.7	2.95 ± 0.2	20	0.030	190835	190836	191552	191553				
2.5	2.05	8.21	3.65 ± 0.2	32	0.043	190843	190844	212277	211700				
4	2.55	5.09	4.15 ± 0.2	46	0.051	190851	190852	*	304349				
6	3.10	3.39	4.7 ± 0.2	65	0.060	190859	190860	307479	216824				
10	4.10	1.95	6.1 ± 0.4	108	0.097	*	304129	*	*				
16	5.00	1.24	7.2 ± 0.4	164	0.127	*	*	*	301297				
25	6.20	0.795	8.6 ± 0.4	247	0.168	*	*	*	*				
35	7.70	0.565	10.1 ± 0.4	349	0.225	*	*	*	*				
50	9.70	0.393	12.5 ± 0.4	507	0.348	215179	*	*	*				
70	11.20	0.277	14.0 ± 0.4	691	0.404	*	*	*	*				
95	12.80	0.21	16.0 ± 0.6	912	0.500	*	*	*	*				
120	14.60	0.164	17.8 ± 0.6	1138	0.555	*	*	*	*				
150	16.40	0.132	20.0 ± 0.6	1436	0.761	*	*	*	*				
185	17.90	0.108	21.9 ± 0.6	1725	0.838	*	*	*	*				
240	20.70	0.0817	25.1 ± 0.6	2278	1.043	*	*	*	*				
300	23.30	0.0654	28.1 ± 0.6	2872	1.341	*	*	*	*				

Note:

*: Upon request

0000136 V06© Studer Cables AG / Technical modifications reserved