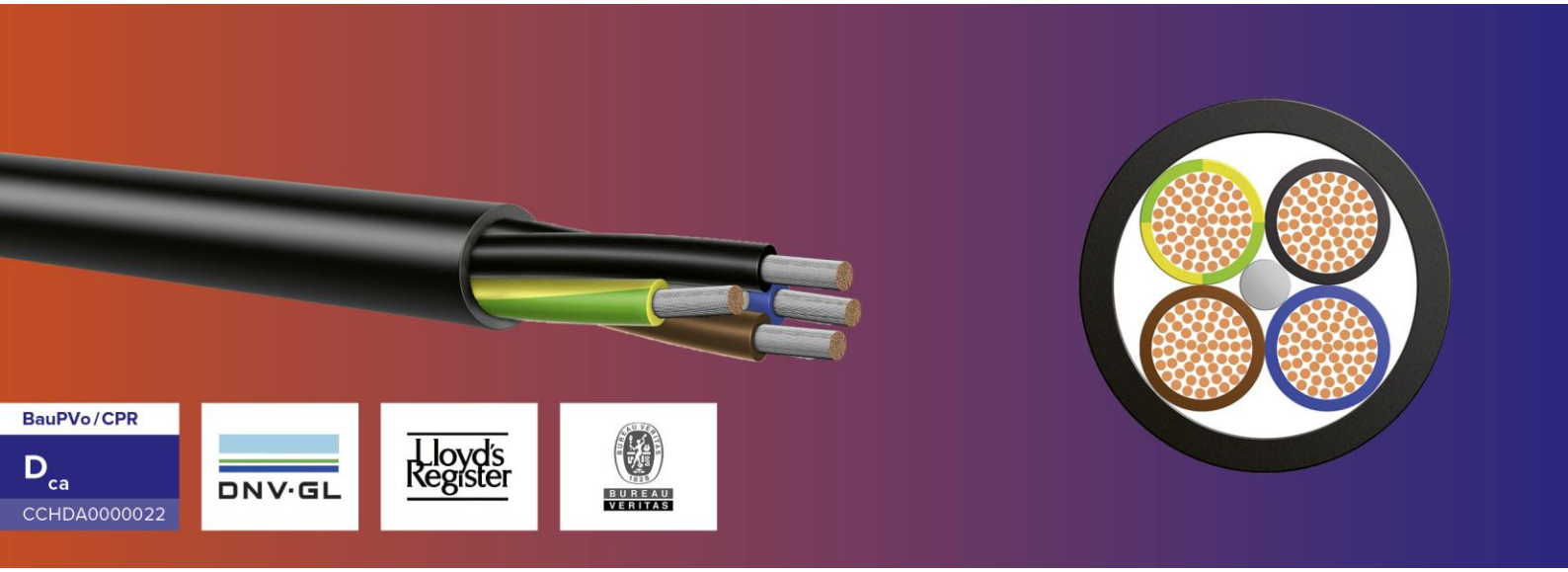
CONNECTION AND POWER CABLES

BETAflam® 145 flex
Multicore sheathed cable



Application

Fixed and flexible application in dry, humid and wet rooms. Good weather and UV resistance. Extensively oil resistant. Intended for installation outdoors. Typical areas of application are connections of:
Lamps, heating units, electrical machinery (thermal class B), switch boards, switch cabinets and distributors in apparatus, mechanical or plant engineering.

Construction

Conductor	Tinned fine copper strand acc. to VDE 0295 / IEC 60228, class 5
Insulation	Polyolefin Copolymer, Comp. 752, electronbeam cross-linked
Core colour	≤ 5 cores acc. to HD 308 S2, ≥ 6 cores NR, NRPE
Sheath	Polyolefin Copolymer, Comp. 752, electronbeam cross-linked
Sheath colour	Black

Advantages

- Very high resistance to temperature
- service temperature up to +145 °C
- Resistance to cold down to –55 °C
- Best fire performance
- Halogenfree
- Good media resistance
- Electron-beam cross-linked

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Electrical properties

Rated value	U0/U ≤ 1 mm2	300 / 500 V AC
Rated value	U0/U ≥1.5 mm2	450 / 750 V AC
Rated value	U0/U ≥1.5 mm2	600 / 1000 V AC*
Rated value	U0/U ≤ 1 mm2	375 / 750 V DC
Rated value	U0/U ≥1.5 mm2	750 / 1500 V DC*
Test voltage		3.5 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	≥8 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 61034-2, EN 50268-2

Material properties / Standards

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
Cross-linked insulating compound HF90	IEC 60092-360
Cross-linked sheating compound SHF2	IEC 60092-360
Oil resistant	EN 50264-1, 72h/100°C, IRM 902
Fuel resistant	EN 50264-1, 168h/70°C, IRM 903
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
Low corrosive gases a1	EN 60754-2
CPR-Identification code	CCHDA0000022

Approvals

DNV / GL	Certificate No. TAE00001RK
Lloyd's Register	Certificate No. LR2016000TA
BUREAU VERITAS	Certificate No. 13348/E0 BV

Additional information

* fixed and protected installation

Special types upon reques

CPR approvals do not apply to the following cross-sections:

7/8x0.75, 1/7/8x1, 1/7x1.5, 1/7/8x2.5, 1/6/7x4, 1/6/7x6, 1/7x10, 2x95, 1x16 - 1x240

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R_{20} [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
2 x 0.50	LN	0.9	40.1	1.85	5.1	30	0.080	214001
3 G 0.50	LNPE	0.9	40.1	1.85	5.5	46	0.130	*
4 x 0.50	NR	0.9	40.1	1.85	5.9	49	0.130	*
5 x 0.50	3LNPE	0.9	40.1	1.85	6.7	68	0.190	*
7 x 0.50	NRPE	0.9	40.1	1.85	7.8	93	0.260	*
2 x 0.75	LN	1.15	26.7	2.2	5.9	52	0.150	213874
2 x 0.75	NR	1.15	26.7	2.2	5.9	52	0.150	217588
3 G 0.75	LNPE	1.15	26.7	2.2	6.2	53	0.130	216630
3 x 0.75	NR	1.15	26.7	2.2	6.2	53	0.130	223848
4 x 0.75	NR	1.15	26.7	2.2	6.9	68	0.170	220752
4 G 0.75	3LPE	1.15	26.7	2.2	6.9	68	0.170	222788
4 G 0.75	2LNPE	1.15	26.7	2.2	6.9	68	0.170	216328
5 G 0.75	3LNPE	1.15	26.7	2.2	7.7	86	0.210	222910
5 x 0.75	NR	1.15	26.7	2.2	7.7	86	0.210	223774
6 x 0.75	NR	1.15	26.7	2.2	8.3	102	0.250	222161
6 G 0.75	NRPE	1.15	26.7	2.2	8.3	102	0.250	226089
7 G 0.75	NRPE	1.15	26.7	2.2	9.1	122	0.300	218510
8 G 0.75	NRPE	1.15	26.7	2.2	10.2	147	0.370	213641
10 x 0.75	NRPE	1.15	26.7	2.2	11.1	171	0.410	214566
10 G 0.75	NR	1.15	26.7	2.2	11.1	171	0.410	302843
12 G 0.75	NRPE	1.15	26.7	2.2	11.1	182	0.400	221971
14 G 0.75	NRPE	1.15	26.7	2.2	11.7	203	0.430	*
16 G 0.75	NRPE	1.15	26.7	2.2	12.5	238	0.510	302844
1 x 1	L	1.25	20.0	2.4	3.9	25	0.060	*
2 x 1	LN	1.25	20.0	2.4	6.3	49	0.120	219674
2 x 1	NR	1.25	20.0	2.4	6.3	49	0.120	218860
3 G 1	LNPE	1.25	20.0	2.4	6.8	65	0.150	214075
3 x 1	NR	1.25	20.0	2.4	6.8	65	0.150	301676
4 G 1	3LPE	1.25	20.0	2.4	7.4	83	0.190	222969
4 x 1	NR	1.25	20.0	2.4	7.4	83	0.190	224018
4 G 1	2LNPE	1.25	20.0	2.4	7.4	83	0.190	218509
5 G 1	3LNPE	1.25	20.0	2.4	8.3	105	0.240	222911

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R_{20} [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
5 G 1	NRPE	1.25	20.0	2.4	8.3	105	0.240	218863
5 x 1	NR	1.25	20.0	2.4	8.3	105	0.240	220309
6 G 1	NRPE	1.25	20.0	2.4	8.9	124	0.280	*
7 G 1	NRPE	1.25	20.0	2.4	9.9	152	0.350	218864
8 G 1	NRPE	1.25	20.0	2.4	11.0	181	0.430	*
10 G 1	NRPE	1.25	20.0	2.4	12.1	222	0.470	*
12 G 1	NRPE	1.25	20.0	2.4	12.1	226	0.460	218859
14 G 1	NRPE	1.25	20.0	2.4	12.7	252	0.500	*
16 G 1	NRPE	1.25	20.0	2.4	13.6	290	0.590	*
19 G 1	NRPE	1.25	20.0	2.4	15.1	365	0.770	223244
21 G 1	NRPE	1.25	20.0	2.4	16.0	380	0.780	*
24 G 1	NRPE	1.25	20.0	2.4	17.1	437	1.280	*
25 G 1	NRPE	1.25	20.0	2.4	17.1	463	0.940	218861
27 G 1	NPRE	1.25	20.0	2.4	17.1	468	1.400	*
30 G 1	NPRE	1.25	20.0	2.4	17.7	514	1.570	*
33 G 1	NPRE	1.25	20.0	2.4	18.9	583	1.750	*
37 G 1	NPRE	1.25	20.0	2.4	20.3	680	1.370	*
1 x 1.5	L	1.55	13.7	2.95	4.3	32	0.070	*
2 x 1.5	LN	1.55	13.7	2.95	7.6	69	0.170	211350
2 x 1.5	NR	1.55	13.7	2.95	7.6	69	0.170	217256
3 G 1.5	LNPE	1.55	13.7	2.95	8.1	91	0.210	211351
3 G 1.5	NRPE	1.55	13.7	2.95	8.1	91	0.210	300605
3 x 1.5	NR	1.55	13.7	2.95	8.1	91	0.210	217180
4 x 1.5	NR	1.55	13.7	2.95	8.8	115	0.260	215037
4 G 1.5	2LNPE	1.55	13.7	2.95	8.8	115	0.260	211352
4 G 1.5	3LPE	1.55	13.7	2.95	8.8	115	0.260	222789
5 G 1.5	3LNPE	1.55	13.7	2.95	9.8	147	0.330	222778
5 G 1.5	NRPE	1.55	13.7	2.95	9.8	147	0.330	306557
5 x 1.5	NR	1.55	13.7	2.95	9.8	147	0.330	220309
6 G 1.5	NRPE	1.55	13.7	2.95	10.9	190	0.480	314931
7 G 1.5	NRPE	1.55	13.7	2.95	12.0	256	0.650	211355
10 G 1.5	NRPE	1.55	13.7	2.95	14.6	297	0.680	211357
12 G 1.5	NRPE	1.55	13.7	2.95	14.6	320	0.660	211358
14 G 1.5	NRPE	1.55	13.7	2.95	15.4	366	0.740	*

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R20 [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
16 G 1.5	NRPE	1.55	13.7	2.95	16.2	418	0.850	211359
19 G 1.5	NRPE	1.55	13.7	2.95	18.3	486	0.990	316089
21 G 1.5	NRPE	1.55	13.7	2.95	19.7	595	1.300	214968
24 G 1.5	NRPE	1.55	13.7	2.95	21.1	644	1.390	220314
25 G 1.5	NRPE	1.55	13.7	2.95	21.1	674	1.410	212866
27 G 1.5	NRPE	1.55	13.7	2.95	21.1	696	1.390	217181
30 G 1.5	NRPE	1.55	13.7	2.95	21.8	760	1.480	*
33 G 1.5	NRPE	1.55	13.7	2.95	22.6	831	1.620	*
37 G 1.5	NRPE	1.55	13.7	2.95	24.8	975	2.000	302217
1 x 2.5	L	2.05	8.21	3.65	5.0	45	0.094	214967
2 x 2.5	LN	2.05	8.21	6.65	5.0	99	0.0220	211360
2 x 2.5	NR	2.05	8.21	3.65	9.0	99	0.220	216689
2 G 2.5	NRPE	2.05	8.21	3.65	9.0	99	0.220	211366
3 G 2.5	LNPE	2.05	8.21	3.65	9.8	138	0.300	211361
4 G 2.5	3LPE	2.05	8.21	3.65	10.8	176	0.370	222790
4 x 2.5	NR	2.05	8.21	3.65	10.8	176	0.370	218979
4 G 2.5	2LNPE	2.05	8.21	3.65	10.8	176	0.370	211362
5 G 2.5	3LNPE	2.05	8.21	3.65	12.0	225	0.470	222779
6 G 2.5	NRPE	2.05	8.21	3.65	13.2	288	0.620	*
7 G 2.5	NRPE	2.05	8.21	3.65	14.6	331	0.720	211365
8 G 2.5	NRPE	2.05	8.21	3.65	15.7	372	0.800	*
12 G 2.5	NRPE	2.05	8.21	3.65	17.7	486	0.920	211366
14 G 2.5	NRPE	2.05	8.21	3.65	19.0	576	1.120	301167
16 G 2.5	NRPE	2.05	8.21	3.65	20.1	651	1.250	311625
19 G 2.5	NRPE	2.05	8.21	3.65	20.7	765	1.480	*
21 G 2.5	NRPE	2.05	8.21	3.65	22.7	857	1.490	*
24 G 2.5	NRPE	2.05	8.21	3.65	25.8	984	2.210	*
1 x 4	L	2.55	5.09	4.15	5.6	62	0.120	*
2 x 4	LN	2.55	5.09	4.15	10.2	154	0.350	212870
2 x 4	NR	2.55	5.09	4.15	10.2	154	0.350	300782
3 G 4	3LPE	2.55	5.09	4.15	10.9	190	0.350	216165
4 G 4	3LPE	2.55	5.09	4.15	12.2	249	0.450	223188
5 G 4	3LNPE	2.55	5.09	4.15	13.5	312	0.570	222913

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R_{20} [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
6 G 4	NRPE	2.55	5.09	4.15	14.9	380	0.700	*
7 G 4	NRPE	2.55	5.09	4.15	16.4	456	0.860	304995
8 G 4	NRPE	2.55	5.09	4.15	17.6	523	0.960	*
10 G 4	NRPE	2.55	5.09	4.15	20.1	674	0.170	*
12 G 4	NRPE	2.55	5.09	4.15	20.1	694	1.140	302379
14 G 4	NRPE	2.55	5.09	4.15	21.5	810	1.330	302380
1 x 6	L	3.1	3.39	4.7	6.1	83	0.130	222433
2 x 6	NR	3.1	3.39	4.7	11.6	209	0.430	301418
2 x 6	NR	3.1	3.39	4.7	11.6	209	0.430	*
3 G 6	LNPE	3.1	3.39	4.7	12.4	275	0.490	219627
4 G 6	3LPE	3.1	3.39	4.7	13.8	338	0.540	222791
4 G 6	2LNPE	3.1	3.39	4.7	13.8	338	0.540	213672
4 x 6	NR	3.1	3.39	4.7	13.8	338	0.540	*
5 G 6	3LNPE	3.1	3.39	4.7	15.4	427	0.690	222780
6 x 6	NR	3.1	3.39	4.7	16.5	515	0.840	*
7 G 6	NRPE	3.1	3.39	4.7	18.3	612	1.020	214964
1 x 10	L	4.1	1.95	6.1	7.7	133	0.200	*
2 x 10	LN	4.1	1.95	6.1	14.7	355	0.680	*
3 x 10	NR	4.1	1.95	6.1	15.7	443	0.760	*
4 G 10	3LPE	4.1	1.95	6.1	17.5	574	0.940	223189
4 G 10	2LNPE	4.1	1.95	6.1	17.5	574	0.940	*
5 G 10	3LNPE	4.1	1.95	6.1	19.6	727	1.330	222912
6 G 10	NRPE	4.1	1.95	6.1	21.7	856	1.210	*
7 G 10	NRPE	4.1	1.95	6.1	23.7	1000	1.610	304097
1 x 16	L	5.0	1.24	7.2	8.8	194	0.240	316191
1 G 16	PE	5.0	1.24	7.2	8.8	194	0.240	224021
2 x 16	LN	5.0	1.24	7.2	17.1	489	0.870	*
3 G 16	LNPE	5.0	1.24	7.2	18.2	649	0.990	307013
4 G 16	3LPE	5.0	1.24	7.2	20.6	857	1.290	303609
4 G 16	2LNPE	5.0	1.24	7.2	20.6	587	1.290	*
5 G 16	3LNPE	5.0	1.24	7.2	23.2	1084	1.640	223190
6 G 16	NRPE	5.0	1.24	7.2	25.6	1295	1.950	*

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R_{20} [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
7 G 16	NRPE	5.0	1.24	7.2	28.3	1494	2.200	*
1 x 25	L	6.2	0.795	8.6	10.4	287	0.330	316192
2 x 25	LN	6.2	0.795	8.6	20.4	730	1.240	*
3 x 25	NR	6.2	0.795	8.6	21.8	972	1.370	223541
4 G 25	3LPE	6.2	0.795	8.6	24.4	1281	1.780	303610
5 G 25	3LNPE	6.2	0.795	8.6	27.1	1584	2.160	311690
6 G 25	NRPE	6.2	0.795	8.6	30.3	1917	2.650	*
7 G 25	NRPE	6.2	0.795	8.6	33.5	2205	2.950	*
1 x 35	L	7.7	0.565	10.1	12.1	401	0.429	311689
2 x 35	LN	7.7	0.565	10.1	23.7	1008	1.630	223191
3 G 35	LNPE	7.7	0.565	10.1	25.5	1353	1.830	301141
4 G 35	NRPE	7.7	0.565	10.1	28.4	1767	2.290	301143
5 G 35	3LNPE	7.7	0.565	10.1	31.3	2186	2.770	301144
1 x 50	L	9.7	0.393	12.5	14.7	578	0.620	311674
2 x 50	LN	9.7	0.393	12.5	28.9	1419	2.230	*
3 G 50	LNPE	9.7	0.393	12.5	31.1	1965	2.710	*
4 G 50	3LPE	9.7	0.393	12.5	34.9	2578	3.440	302205
5 G 50	3LNPE	9.7	0.393	12.5	38.7	3193	4.190	306276
1 x 70	L	11.2	0.277	14	16.4	777	0.740	311675
1 G 70	PE	11.2	0.277	14	16.4	777	0.740	307115
2 x 70	LN	11.2	0.277	14	32.3	1889	2.730	*
3 G 70	LNPE	11.2	0.277	14	34.7	2629	3.290	*
4 G 70	3LPE	11.2	0.277	14	38.6	3429	4.080	313514
5 G 70	3LNPE	11.2	0.277	14	43.1	4253	4.970	316296
1 x 95	L	12.8	0.21	16	18.8	1027	0.947	308543
1 G 95	PE	12.8	0.21	16	18.8	1027	0.947	317276
2 x 95	LN	12.8	0.21	16	36.7	2459	3.390	316432
3 G 95	LNPE	12.8	0.21	16	39.2	3374	3.860	303871
4 G 95	3LPE	12.8	0.21	16	44.1	4492	5.110	303913
5 G 95	3LNPE	12.8	0.21	16	49.9	5648	6.520	306423

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Construction Cross-sec. [n x mm2]	Color code	Conductor-Ø [mm]	R_{20} [mΩ/m]	Wire-Ø [mm]	Outer-Ø [mm]	Weight [kg/km]	Fire load [kWh/m]	Part no.
1 x 120	L	14.6	0.164	17.8	20.8	1274	1.086	307116
1 x 150	L	16.4	0.132	20.0	23.2	1598	1.395	221743
1 x 185	L	17.9	0.108	21.9	25.3	1983	1.628	300625
1 x 240	L	20.7	0.081	25.1	28.7	2506	1.931	300626

Note:

*: Upon request

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