



### CONTACT

Markets and Products Information  
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## HIGH TEMPERATURE FLEXIBLE POWER CABLES

FLAMEX® EN 50382-2 F power cables are designed and dedicated to be used on rolling stock equipment where high operating temperature is required to save cable weight. Thanks to its high flexibility, these cables with low bending radius are frequently installed on locomotive equipment.

### STANDARDS

**Product** EN 45545-2 (HL3); EN 50382-2; IEC 60228

### DESIGN

#### 1. Conductor

Flexible class 5 copper according to IEC 60228

- tinned copper for 120°C Class
- plain copper for 150°C Class

Separator: Unweaved tape

#### 2. Insulation

Cross-linked silicone type EI 111 according to EN 50382-1

Colour: black outer layer

Example of marking: FLAMEX SI - EN 50382-2 - Voltage rate (1800V or 3600V) - cross-section mm<sup>2</sup> - F - temperature class (120°C or 150°C) - LYNXEO 279 - week/year

### GUIDE TO USE

- Cabling rules are given in EN 50343 and EN 50355
- Permissible current carrying capacities: values and calculation method are given in EN 50343
- Bending radius:
  - Static use: 4 x outer cable diameter
  - For installation and occasional movements: 6 x outer cable diameter
- Pulling tensile force (dynamic) during installation: 50 N/mm<sup>2</sup> of copper size
- Mechanical static tensile force: 15N/mm<sup>2</sup> of copper size



Conductor flexibility  
Flexible class 5



Halogen free  
EN 60754-1 & EN 60684-2



Flame retardant  
EN 60332-1-2



Fire retardant  
EN IEC 60332-3-24  
(cat C); EN IEC 60332-3-25  
(EN50305)



Smoke density  
EN/IEC 61034-2



Gases toxicity  
EN 50305-9.2



Operating temp.  
-50 ... 120 °C



Chemical resistance  
Good

### CHARACTERISTICS

#### Construction characteristics

Conductor flexibility	Flexible class 5
Insulation	High temperature silicone
Halogen free	EN 60754-1 & EN 60684-2

#### Usage characteristics

Flame retardant	EN 60332-1-2
Fire retardant	EN IEC 60332-3-24 (cat C); EN IEC 60332-3-25 (EN50305)
Smoke density	EN/IEC 61034-2
Gases toxicity	EN 50305-9.2
Operating temperature, range	-50 ... 120 °C
Chemical resistance	Good



Conductor flexibility  
Flexible class 5



Halogen free  
EN 60754-1 & EN 60684-2



Flame retardant  
EN 60332-1-2



Fire retardant  
EN IEC 60332-3-24 (cat C); EN IEC 60332-3-25 (EN50305)



Smoke density  
EN/IEC 61034-2



Gases toxicity  
EN 50305-9.2



Operating temp.  
-50 ... 120 °C



Chemical resistance  
Good

## FLAMEX SI EN 50382-2 F 1800V 120°C

Reference	Cross section [mm <sup>2</sup> ]	Conductor diam. [mm]	Nom. outer diam. [mm]	Min. outer diam. [mm]	Max. outer diam. [mm]	Approx. weight [kg/km]	Fire load [kWh/m]
10195310	2.5	1.9	7.1	6.7	7.9	65	0.163
10203262	4	2.5	7.7	7.3	8.5	83	0.181
10211401	6	3.0	8.2	7.8	9.0	104	0.198
10195311	10	3.9	9.3	8.9	10.0	153	0.226
10211402	16	5.0	10.4	10.0	11.2	219	0.263
10207155	25	6.4	11.5	11.1	12.3	308	0.308
10211403	35	7.7	12.9	12.5	13.7	402	0.355
10207186	50	9.2	14.3	13.9	15.1	536	0.403
10195312	70	11.0	15.9	15.5	16.7	741	0.457
10195313	95	12.5	18.5	18.1	19.3	967	0.582
10207187	120	14.2	19.9	19.5	20.7	1202	0.629
10198300	150	15.8	21.2	20.8	22.0	1425	0.685
10211464	185	17.5	22.4	22.0	23.2	1760	0.725
10211465	240	20.1	26.0	25.6	26.8	2280	0.858
	300	22.5	-	26.4	30.9	2715	-

## FLAMEX SI EN 50382-2 F 3600V 120°C

Reference	Cross section [mm <sup>2</sup> ]	Conductor diam. [mm]	Nom. outer diam. [mm]	Min. outer diam. [mm]	Max. outer diam. [mm]	Approx. weight [kg/km]	Fire load [kWh/m]
10211467	2.5	1.9	8.1	7.7	8.9	80	0.216
10191664	4	2.5	8.7	8.3	9.5	99	0.237
10211466	6	3.0	9.6	9.2	10.4	128	0.283
10195796	10	3.9	10.1	9.7	10.9	168	0.292
10256165	16	5.0	11.2	10.8	12.0	236	0.341
10195124	25	6.4	12.5	12.1	13.3	331	0.39
10241573	35	7.7	13.9	13.5	14.7	428	0.447
10179832	50	9.2	15.3	14.9	16.1	564	0.504
10191170	70	11.0	16.9	16.5	17.7	773	0.568
10191194	95	12.5	19.1	18.7	19.9	989	0.658
10179833	120	14.2	20.7	20.3	21.5	1233	0.74
10179834	150	15.8	22.0	21.6	22.8	1459	0.803
10179835	185	17.5	23.4	23.0	24.2	1805	0.881
10179836	240	20.1	27.4	27.0	28.2	2351	1.112
10281085	300	22.5	29.8	28.3	32.4	2863	-

## FLAMEX SI EN 50382-2 F 1800V 150°C

Reference	Cross section [mm <sup>2</sup> ]	Conductor diam. [mm]	Nom. outer diam. [mm]	Min. outer diam. [mm]	Max. outer diam. [mm]	Approx. weight [kg/km]
10261509	2.5	1.9	7.2	7.1	7.8	77
	4	2.5	-	7.2	8.4	96
	6	3.0	-	7.7	9.0	117
	10	3.9	-	8.5	10.0	162
	16	5.0	-	9.8	11.0	225
	25	6.4	-	10.9	12.7	311
	35	7.7	-	12.1	14.1	411
10261511	50	9.2	14.2	13.8	15.0	526
	70	11.0	-	15.0	17.8	747
10261512	95	12.5	18.5	18.1	19.3	935
10227161	120	14.2	20.4	20.0	21.2	1172
10261513	150	15.8	22.2	21.8	23.0	1430
10269713	185	17.5	23.6	23.2	24.4	1714
10227159	240	20.1	25.8	25.4	26.6	2251
	300	22.5	-	26.4	30.9	2715

## FLAMEX SI EN 50382-2 F 3600V 150°C

Reference	Cross section [mm <sup>2</sup> ]	Conductor diam. [mm]	Nom. outer diam. [mm]	Min. outer diam. [mm]	Max. outer diam. [mm]	Approx. weight [kg/km]
10270404	2.5	1.95	-	7.6	8.9	94
	4	2.5	-	8.1	9.5	114
10270404	6	3.0	-	9.2	10.4	130
	10	3.9	-	9.5	11.1	183
10267838	16	5.0	11.1	10.8	12.3	249
	25	6.4	-	11.8	13.8	338
	35	7.7	-	13.0	15.2	441
	50	9.2	-	14.4	16.9	578
	70	11.0	-	16.1	18.9	784
	95	12.5	-	17.5	20.5	998
	120	14.2	-	19.3	22.6	1247
10227160	150	15.8	-	20.8	24.4	1502
	185	17.5	24.6	24.2	25.4	1839
	240	20.1	-	25.4	29.8	2353
	300	22.5	-	27.7	32.4	2800