

# BITflame<sup>®</sup> S(St) FE180/E90



Fire resistant, halogen-free power cable 300/500V



## Technical data:

### Thermal parameters:

#### Temperature range:

fixed installation: -40 °C up to 80 °C  
min. installation temp: -10 °C

### Electrical parameters:

**Operating voltage:** 300/500 V

#### Test voltage:

AC 3000 V

DC 7200 V

**Insulation resistance (min.):** 100 MΩ x km

### Mechanical parameters:

**Min. bending radius:** 10 x Ø

## Cable characteristics:

- fire resistant
- halogen-free
- flame retardant
- no corrosive gases (acidity pH ≥4,3; conductivity <10µS/mm)
- low smoke emission (light transmittance over 60%)
- increased insulation resistance (FE180)
- fire integrity function (PH90)
- low fire load (calorific value)

## Design:

### Conductor:

bare solid copper conductor, class 1 acc to EN 60228, IEC 60228

### Insulation:

special ceramic silicone rubber

### Core colors:

without green/yellow earth conductor  
2- core – blue, brown  
3- core – brown, black, grey  
4-core – blue, brown, black, grey  
5-core - blue, brown, black, grey, black

### Above 5 cores – In each layer:

brown (starting conductor), blue (reference conductor), remaining conductors – any freely selected colours with exception of green, yellow, brown, blue with green/yellow earth conductor  
3-core – green/yellow, blue, brown  
4-core - green/yellow, brown, black, grey  
5-core – green/yellow, blue, brown, black, grey

### Above 5 cores – In external layer:

green/yellow (starting conductor), blue (reference conductor) remaining conductors – any freely selected colours with exception of green, yellow, brown, blue

### Other layers:

brown (starting conductor), blue (reference conductor) remaining conductors – any freely selected colours with exception of green, yellow, brown, blue

### Wrapping:

polyester tape

### Screen:

aluminium backed polyester tape with tinned copper drain wire

### Outer sheath:

halogen-free compound; colour: red

## Application:

Halogen-free fire resistant cables designed for installations in places where it is necessary to ensure operation of devices under fire conditions. They are recommended for emergency lighting installations, smoke extraction systems, alarm systems, signalling systems, sound warning and control systems, fire alarm signalling and automation and other safety ensuring circuits. Static screen in BITflame S(St) cables protects them against interferences of external magnetic fields. Under fire conditions those cables ensure correct functioning of installation for at least 90 minutes (PH90) and insulation resistance to fire exposure for 180 minutes (FE180). During burning they do not emit corrosive gases or dense smoke. Cables are suitable for fixed installations inside buildings.

## Tests:

Flame test for a single insulated cable:	EN 60332-1-2, IEC 60332-1-2
Flame test for vertically-mounted bunched cables:	EN 60332-3-22, IEC 60332-3 cat.A
Test on corrosive gases emitted during burning:	EN 602754-2, IEC 602754-2, VDE 0482-754-2
Smoke density emission during burning:	EN 61034-2, IEC 61034-2, VDE 0482-1034-2
Insulation resistance to long term fire exposure FE180:	IEC 60331-11, IEC 60331-21, IEC 60331-23
Fire integrity function of cable support system E90:	VDE 4102-12
Fire integrity function of cable installations (PH90):	EN 50200

# BiTflame® S(St) FE180/E90

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## Cables without green-yellow core BiTflame® S(St) FE180/E90

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
BF0460	2x1,0	7,1	63
BF0461	2x1,5	7,9	78
BF0462	2x2,5	9,5	115
BF0463	2x4,0	10,4	150
BF0464	3x1,0	7,5	79
BF0465	3x1,5	8,3	99
BF0466	3x2,5	10,0	148
BF0467	3x4,0	11,2	203
BF0468	4x1,0	8,4	100
BF0469	4x1,5	9,6	132
BF0470	4x2,5	11,2	190
BF0471	4x4,0	12,3	256
BF0472	5x1,0	9,2	125
BF0473	5x1,5	10,3	161
BF0474	5x2,5	12,1	235
BF0475	5x4,0	13,3	318
BF0476	7x1,0	9,9	154
BF0477	7x1,5	11,3	203
BF0478	7x2,5	13,1	293
BF0479	10x1,0	12,5	214
BF0480	10x1,5	14,1	279
BF0481	10x2,5	17,1	430
BF0482	12x1,0	12,9	244

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
BF0483	12x1,5	14,5	320
BF0484	12x2,5	17,6	494
BF0485	14x1,0	13,5	276
BF0486	14x1,5	15,4	371
BF0487	14x2,5	19,1	589
BF0488	16x1,0	14,3	313
BF0489	16x1,5	16,8	438
BF0490	16x2,5	20,3	668
BF0491	19x1,0	15,5	375
BF0492	19x1,5	18,1	520
BF0493	19x2,5	21,0	758
BF0494	20x1,0	16,2	408
BF0495	20x1,5	18,9	565
BF0496	20x2,5	22,1	825
BF0497	24x1,0	17,9	462
BF0498	24x1,5	20,9	642
BF0499	24x2,5	25,1	976
BF0500	30x1,0	19,5	580
BF0501	30x1,5	22,0	768
BF0502	30x2,5	26,5	1173
BF0503	37x1,0	20,9	689
BF0504	37x1,5	23,7	918
BF0505	37x2,5	28,5	1406

## Cables with green-yellow core BiTflame® S(St) FE180/E90

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
BF0508	3x1,0	7,5	79
BF0509	3x1,5	8,3	99
BF0510	3x2,5	10,0	148
BF0511	3x4,0	11,2	203
BF0512	4x1,0	8,4	100
BF0513	4x1,5	9,6	132
BF0514	4x2,5	11,2	190
BF0515	4x4,0	12,3	256
BF0516	5x1,0	9,2	125
BF0517	5x1,5	10,3	161
BF0518	5x2,5	12,1	235
BF0519	5x4,0	13,3	318
BF0520	7x1,0	9,9	154
BF0521	7x1,5	11,3	203
BF0522	7x2,5	13,1	293
BF0523	10x1,0	12,5	214
BF0524	10x1,5	14,1	279
BF0525	10x2,5	17,1	430
BF0526	12x1,0	12,9	244
BF0527	12x1,5	14,5	320
BF0528	12x2,5	17,6	494

Cat. no.	n x mm <sup>2</sup>	Outer diameter* [mm]	Approximate cable weight [kg/km]
BF0529	14x1,0	13,5	276
BF0530	14x1,5	15,4	371
BF0531	14x2,5	19,1	589
BF0532	16x1,0	14,3	313
BF0533	16x1,5	16,8	438
BF0534	16x2,5	20,3	668
BF0535	19x1,0	15,5	375
BF0536	19x1,5	18,1	520
BF0537	19x2,5	21,0	758
BF0538	20x1,0	16,2	408
BF0539	20x1,5	18,9	565
BF0540	20x2,5	22,1	825
BF0541	24x1,0	17,9	462
BF0542	24x1,5	20,9	642
BF0543	24x2,5	25,1	976
BF0544	30x1,0	19,5	580
BF0545	30x1,5	22,0	768
BF0546	30x2,5	26,5	1173
BF0547	37x1,0	20,9	689
BF0548	37x1,5	23,7	918
BF0549	37x2,5	28,5	1406

\*Outer diameter tolerance: +/-5%

Cable Factory BITNER reserves the right to modify specifications without prior notification

Note: On customer's request other cross sections or number of cores can be produced