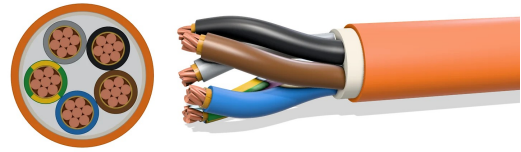


Application

NHXX FE180 is a halogen-free, fire-resistant power and installation cable for safety and emergency circuits that must keep operating during a fire, emergency lighting, smoke-extraction and sprinkler systems, fire pumps, alarms and other life-safety supplies. A mica-glass fire-barrier tape applied over the conductors and halogen-free cross-linked (XLPE) insulation together maintain circuit integrity to FE180 (IEC 60331), while the complete cable achieves system integrity classes E30 to E90 to DIN 4102-12 depending on the mounting. The low smoke zero halogen (LSZH) sheath is orange for easy identification and, when burning, emits low smoke and no corrosive halogen gases so that escape routes stay passable and equipment is protected. It is available as single-core and multicore cables, rated 0.6/1 kV.



CONSTRUCTION

Conductor	Plain (bare) annealed copper, solid class 1 or stranded class 2 acc. to IEC 60228 / VDE 0295.
Fire barrier	Mica-glass fire-resistant tape applied over the conductor(s); the fire barrier that maintains insulation integrity under flame (FE180).
Insulation	Halogen-free cross-linked polyethylene (HX / XLPE).
Sheath	Halogen-free, flame-retardant, low-smoke (LSZH) polyolefin compound; orange (other colours on request).
Core identification	Acc. to VDE 0293-308; green/yellow earth core in the standard 'J' versions; multicore control versions numbered.

ELECTRICAL & THERMAL PROPERTIES

Rated voltage Uo/U	0.6/1 kV (600/1000 V).
Fire resistance (circuit integrity)	FE180 acc. to IEC 60331 (insulation integrity maintained 180 min under flame).
System integrity	E30 to E90 acc. to DIN 4102-12 (30 to 90 min functional integrity of the installed circuit, depending on the mounting system).
Standard	VDE 0266 / HD 604 S1 (halogen-free 0.6/1 kV cables); conductors acc. to IEC 60228; fire tests IEC 60331 and DIN 4102-12.
Flame-retardant	Acc. to IEC 60332-1-2 (single cable) and IEC 60332-3-24 category C (bunched).
Halogen-free / low smoke	Halogen-free acc. to IEC 60754-1/-2 (corrosive gas); low smoke acc. to IEC 61034-1/-2.
Max. conductor temperature	+90 °C in normal operation (max. +250 °C for 5 s in short circuit).
Min. bending radius, fixed	12 × outer diameter (multicore); 15 × outer diameter (single-core).
Reaction to fire (CPR)	Eca (EN 50575); B2ca-s1a,d1,a1 on request.

DIMENSIONS & TECHNICAL DATA

Cores × mm ²	Cond. R @20°C (Ω/km)	Nominal O.D. (mm)	Weight (kg/km)
3 × 1.5	12.1	12.5	280
4 × 1.5	12.1	13.5	325
5 × 1.5	12.1	14	375
7 × 1.5	12.1	15	365
10 × 1.5	12.1	18	580
12 × 1.5	12.1	19	640
14 × 1.5	12.1	20	740
19 × 1.5	12.1	21.5	880
24 × 1.5	12.1	25	1100
30 × 1.5	12.1	26	1300
2 × 2.5	7.41	12.5	290
3 × 2.5	7.41	13.5	330
4 × 2.5	7.41	14	385
5 × 2.5	7.41	15	445
7 × 2.5	7.41	16.5	540
10 × 2.5	7.41	20	710
12 × 2.5	7.41	20.5	790
14 × 2.5	7.41	21.5	880
19 × 2.5	7.41	23.5	1150
24 × 2.5	7.41	27	1400
30 × 2.5	7.41	28.5	1650
1 × 4	4.61	7	98
2 × 4	4.61	13.5	345
3 × 4	4.61	14.5	400
4 × 4	4.61	15.5	470
5 × 4	4.61	16.5	560
1 × 6	3.08	7.5	125
2 × 6	3.08	14.5	410
3 × 6	3.08	15.5	480
4 × 6	3.08	16.5	580
5 × 6	3.08	18	690
1 × 10	1.83	8	165
2 × 10	1.83	16	540
3 × 10	1.83	17	650
4 × 10	1.83	18.5	790
5 × 10	1.83	20	950
1 × 16	1.15	9	230
2 × 16	1.15	18	720
3 × 16	1.15	19	850
4 × 16	1.15	20.5	1100
5 × 16	1.15	22.5	1300
1 × 25	0.727	10.5	345
2 × 25	0.727	21	1100
3 × 25	0.727	22.5	1300
4 × 25	0.727	24.5	1650

Cores × mm ²	Cond. R @20°C (Ω/km)	Nominal O.D. (mm)	Weight (kg/km)
5 × 25	0.727	26.5	1980
1 × 35	0.524	11.5	450
2 × 35	0.524	24	1120
3 × 35	0.524	24.5	1700
4 × 35	0.524	27	2150
5 × 35	0.524	36	2600
1 × 50	0.387	12	590
3 × 50	0.387	27.5	2200
4 × 50	0.387	30	2800
1 × 70	0.268	15	800
3 × 70	0.268	32	3000
4 × 70	0.268	35	3800
1 × 95	0.193	16.5	1100
3 × 95	0.193	35.5	4000
4 × 95	0.193	39.5	5050
1 × 120	0.153	18.5	1350
3 × 120	0.153	39.5	4850
4 × 120	0.153	43.5	6150
1 × 150	0.124	20.5	1650
3 × 150	0.124	44	5950
4 × 150	0.124	49	7650
1 × 185	0.0991	23	2000
3 × 185	0.0991	49.5	7450
1 × 240	0.0754	25.5	2650
3 × 240	0.0754	60	8600
1 × 300	0.0601	31.8	3200

Nominal outer diameters and weights are the manufacturer values of the leading reference source for the FE180 E30 base construction; the conductor resistance is the IEC 60228 solid class 1 / stranded class 2 plain-copper value. The E90 variant runs marginally larger. All figures are indicative and non-binding.