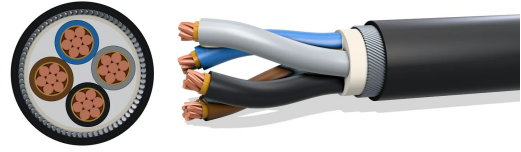


Application

BS 7846 F120 is a fire-resistant armoured power cable for a rated voltage of 600/1000 V, designed to maintain circuit integrity for 120 minutes under fire, water and mechanical shock so that essential and life-safety systems keep operating. A mica-glass fire barrier and cross-linked polyethylene (XLPE) insulation surround stranded class 2 copper conductors, galvanised steel wire armour provides mechanical protection, and a low smoke zero halogen (LSZH) sheath limits smoke and corrosive-gas emission. The enhanced F120 category is verified to BS 8491 for 120-minute fire survival and to BS 6387 categories C, W and Z, the highest category of the same standard, above F2 (BS 6387 C, W and Z) and F30 (30 minutes to BS 8491). It is used for fixed power distribution to fire pumps, sprinklers, smoke-control equipment, emergency lighting and other critical circuits in commercial and public buildings, at a maximum conductor temperature of 90 °C.



CONSTRUCTION

Conductor	Stranded plain annealed copper, class 2 acc. to BS EN 60228 / IEC 60228.
Fire barrier	Mica-glass fire-resistant tape (MGT) applied over the conductor(s).
Insulation	Cross-linked polyethylene (XLPE).
Bedding	Extruded low smoke zero halogen (LSZH) inner covering.
Armour	Galvanised steel wire armour (SWA); single layer of round steel wires.
Sheath	Low smoke zero halogen (LSZH) compound; black as standard.
Core identification	Harmonised core colours to BS 7671: two-core brown/blue; three-core brown/black/grey; four-core brown/black/grey/blue; five-core brown/black/grey/blue plus green/yellow.

ELECTRICAL & THERMAL PROPERTIES

Rated voltage Uo/U	600/1000 V (0.6/1 kV).
Test voltage	3,500 V AC (routine test acc. to BS 7846 / IEC 60502-1; not printed by the reference sources).
Standard	BS 7846 (600/1000 V armoured fire-resistant cables); conductors acc. to BS EN 60228; fire survival acc. to BS 8491 and BS 6387.
Fire performance	Category F120, 120-minute circuit integrity acc. to BS 8491 and category 3 acc. to BS 8519; fire resistant to BS 6387 categories C, W and Z (fire, water and mechanical shock); LPCB certified.
Halogen-free	Low smoke zero halogen; acc. to IEC 60754-1/-2 (corrosive gas) and IEC 61034-1/-2 (smoke density); flame propagation acc. to IEC 60332-1-2 (single cable) and IEC 60332-3 category C (bunched).
Max. conductor temperature	+90 °C in normal operation (max. +250 °C for 5 s in short circuit); fixed installation -20 °C to +90 °C.
Min. bending radius, fixed	8 × overall diameter.
Reaction to fire (CPR)	Classified to BS 8491 / BS 6387 CAT CWZ / BS 8519; no CPR (EN 13501-6) Euroclass is published by manufacturers for this fire-resistant type.

DIMENSIONS & TECHNICAL DATA

Cores × mm ²	Cond. R @20°C (Ω/km)	Overall dia. (mm)	Weight (kg/km)
2 × 4	4.61	23.9	950
3 × 4	4.61	23.4	950
4 × 4	4.61	24.7	1100
5 × 4	4.61	26.3	1200
2 × 6	3.08	25.1	1100
3 × 6	3.08	24.7	1100
4 × 6	3.08	26.2	1200
5 × 6	3.08	27.9	1400
2 × 10	1.83	26.4	1200
3 × 10	1.83	25.2	1200
4 × 10	1.83	27.8	1500
5 × 10	1.83	29.7	1700
2 × 16	1.15	28.3	1400
3 × 16	1.15	27.4	1500
4 × 16	1.15	29.3	1700
5 × 16	1.15	32.2	2250
2 × 25	0.727	31.4	1800
3 × 25	0.727	31.7	2000
4 × 25	0.727	34	2500
2 × 35	0.524	34.1	2250
3 × 35	0.524	34	2500
4 × 35	0.524	35.2	3000
3 × 50	0.387	32.7	2750
4 × 50	0.387	36.6	3250
3 × 70	0.268	36.4	3500
4 × 70	0.268	40.3	4500
3 × 95	0.193	41	4750
4 × 95	0.193	44.6	5750
3 × 120	0.153	44.5	5500
4 × 120	0.153	49.5	7250
3 × 150	0.124	49.3	7000
4 × 150	0.124	54	8500
3 × 185	0.0991	53.4	8250
4 × 185	0.0991	58.8	10500
3 × 240	0.0754	58.7	10500
4 × 240	0.0754	64.8	13000
3 × 300	0.0601	63.7	12500
4 × 300	0.0601	71.7	16000
3 × 400	0.047	71.1	15500
4 × 400	0.047	82.5	21000

Overall diameters and weights are the nominal manufacturer values of the leading reference source and the conductor resistance is the BS EN 60228 class 2 plain-copper value; all figures are indicative and non-binding.