

Application

BS 7846 fire-resistant armoured power cable is a 600/1000 V cable designed to maintain circuit integrity during a fire, 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 cable is rated for a maximum conductor temperature of 90 °C, is manufactured to BS 7846, and its fire performance is verified to BS 6387 categories C, W and Z. 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.



CONSTRUCTION

Conductor	Stranded plain annealed copper, class 2 acc. to BS EN 60228 / IEC 60228.
Fire barrier	Mica-glass fire-resistant tape 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 (other colours, e.g. red, on request).

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).
Standard	BS 7846 (600/1000 V armoured fire-resistant cables); conductors acc. to BS EN 60228; fire tests acc. to BS 6387 and BS 8491.
Fire performance	Fire-resistant to BS 7846 category F2 and BS 6387 category C, W, Z (fire, water and mechanical shock); LPCB certified. An enhanced F120 variant (BS 8491, 120 min) is available.
Flame-retardant	Acc. to IEC 60332-1-2 (single cable) and IEC 60332-3 category C (bunched).
Halogen-free	Low smoke zero halogen; acc. to IEC 60754-1/-2 (corrosive gas) and IEC 61034-1/-2 (smoke density).
Max. conductor temperature	+90 °C in normal operation (max. +250 °C for 5 s in short circuit).
Min. bending radius, fixed	6 × overall diameter (circular conductors); 8 × overall diameter (shaped conductors).
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 × 1.5	12.1	12.8	309
3 × 1.5	12.1	13.3	341
4 × 1.5	12.1	14.1	372
5 × 1.5	12.1	15.2	415
2 × 2.5	7.41	14.2	381
3 × 2.5	7.41	14.7	437
4 × 2.5	7.41	15.8	493
5 × 2.5	7.41	17	541
2 × 4	4.61	15.3	463
3 × 4	4.61	16.1	526
4 × 4	4.61	17.2	606
5 × 4	4.61	18.7	719
2 × 6	3.08	16.5	545
3 × 6	3.08	17.2	651
4 × 6	3.08	19.5	781
5 × 6	3.08	20.9	963
2 × 10	1.83	18.1	688
3 × 10	1.83	19.7	914
4 × 10	1.83	21.2	1129
5 × 10	1.83	23.2	1261
2 × 16	1.15	19.9	946
3 × 16	1.15	21	1142
4 × 16	1.15	22.7	1348
5 × 16	1.15	25.9	1810
2 × 25	0.727	24.7	1370
3 × 25	0.727	27.2	1870
4 × 25	0.727	28	2065
5 × 25	0.727	32.1	2644
2 × 35	0.524	28.2	1900
3 × 35	0.524	28.6	2039
4 × 35	0.524	29.9	2472
5 × 35	0.524	34.8	3251
2 × 50	0.387	25.9	1887
3 × 50	0.387	30.2	2583
4 × 50	0.387	33.7	3463
5 × 50	0.387	40.8	4716
2 × 70	0.268	28.6	2411
3 × 70	0.268	33.6	3274
4 × 70	0.268	38.9	4488
5 × 70	0.268	45.9	5983
2 × 95	0.193	32.3	3163
3 × 95	0.193	39.2	4521
4 × 95	0.193	43.3	5672
2 × 120	0.153	35.2	3875
3 × 120	0.153	42	5368

Cores × mm ²	Cond. R @20°C (Ω/km)	Overall dia. (mm)	Weight (kg/km)
4 × 120	0.153	48.3	7234
2 × 150	0.124	38.4	4621
3 × 150	0.124	47	6859
4 × 150	0.124	52.5	8727
2 × 185	0.0991	43.3	5796
3 × 185	0.0991	51.4	8232
4 × 185	0.0991	57.5	10501
2 × 240	0.0754	46.8	7165
3 × 240	0.0754	56.7	10213
4 × 240	0.0754	63.9	12977
2 × 300	0.0601	51.3	8682
3 × 300	0.0601	62.6	12243
4 × 300	0.0601	70.5	15899
2 × 400	0.047	57.2	10977
3 × 400	0.047	67	15412
4 × 400	0.047	79.8	20847

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, and the enhanced F120 (BS 8491) variant has larger dimensions.