

Application

This single-core armoured power cable for 600/1000 V is made to BS 6724, with a stranded plain copper conductor of class 2, cross-linked polyethylene (XLPE) insulation, a low-smoke zero-halogen (LSZH) bedding, aluminium wire armour (AWA) and a black LSZH sheath. It is the halogen-free counterpart of the PVC-sheathed single-core cable to BS 5467: in a fire it gives little smoke and no corrosive halogen gases. Single-core armoured cables have aluminium instead of steel wire armour: aluminium is not magnetic, so the armour does not heat up in an AC circuit the way steel would. The cable is intended for fixed wiring in power networks, underground, indoors and outdoors, and in cable ducting. It is available from 50 to 1000 mm². Multicore cables to BS 6724 have galvanised steel wire armour; see the datasheet BS 6724.

CONSTRUCTION

Conductor	Plain annealed copper, class 2 stranded, circular, acc. to BS EN 60228.
Insulation	Cross-linked polyethylene (XLPE).
Bedding	Low-smoke zero-halogen compound (LSZH).
Armour	Aluminium wire armour (AWA).
Sheath	Low-smoke zero-halogen compound (LSZH), black.
Core identification	Brown.

ELECTRICAL & THERMAL PROPERTIES

Rated voltage Uo/U	600/1000 V (0.6/1 kV).
Test voltage	3,500 V AC.
Standard	BS 6724; IEC 60502-1; conductor acc. to BS EN 60228.
Flame-retardant	Acc. to IEC 60332-1-2 (single cable) and IEC 60332-3-24 category C (bunched cables).
Halogen-free and low smoke	Acc. to IEC 60754-1, IEC 60754-2 and IEC 61034-2.
Reaction to fire (CPR)	Dca-s1,d2,a1 acc. to EN 50575; Cca-s1,d2,a1 on request.
Tunnels	The classes above do not meet the requirements for rail tunnels in Great Britain: at least B2ca-s1a,a1 (NTSN Safety in Railway Tunnels) and Cca-s1a,d0,a3 for London Underground (S1085). State the required class with your enquiry.
Max. conductor temperature	+90 °C in normal operation; +250 °C in short circuit.
Temperature range, fixed	-20 °C to +90 °C.
Min. installation temperature	0 °C.
Min. bending radius	Fixed: 8 × overall diameter.

DIMENSIONS & TECHNICAL DATA

Method C: clipped direct. Method F: in free air or on a perforated cable tray, horizontal or vertical. Values for cables spaced by one cable diameter are given in BS 7671 Table 4E3A and are not reproduced here. Where the cable is connected to equipment or accessories designed for a conductor temperature of no more than 70 °C, the ratings for 70 °C thermoplastic insulated cables (BS 7671 Table 4D3A) apply. Other installation conditions require the correction factors of BS 7671.

Dimensions and weights

Size (mm ²)	Cond. R @20°C (Ω/km)	Insulation thickness (mm)	Ø under armour (mm)	Overall Ø nominal (mm)	Weight nominal (kg/km)
1×50	0.387	1.0	12.7	17.5	on request
1×70	0.268	1.1	14.7	20.2	960
1×95	0.193	1.1	16.6	22.3	1240
1×120	0.153	1.2	18.5	24.2	1510
1×150	0.124	1.4	20.8	27.4	1900
1×185	0.0991	1.6	23.2	30.0	2320
1×240	0.0754	1.7	26.0	32.8	2930
1×300	0.0601	1.8	28.6	35.6	3580
1×400	0.0470	2.0	32.4	40.5	4600
1×500	0.0366	2.2	36.0	44.2	5770
1×630	0.0283	2.4	40.0	48.8	7250
1×800	0.0221	2.6	45.6	55.4	9381
1×1000	0.0176	2.8	50.6	60.6	11540

Current-carrying capacity acc. to BS 7671 Table 4E3A (ambient 30 °C, conductor 90 °C, cables touching)

Size (mm ²)	Method C 2 cables, 1-ph AC or DC (A)	Method C 3 or 4 cables, 3-ph AC (A)	Method F 2 cables, 1-ph AC or DC, flat (A)	Method F 3 or 4 cables, 3-ph AC, flat (A)	Method F 3 cables, 3-ph AC, trefoil (A)
1×50	237	220	253	232	222
1×70	303	277	322	293	285
1×95	367	333	389	352	346
1×120	425	383	449	405	402
1×150	488	437	516	462	463
1×185	557	496	587	524	529
1×240	656	579	689	612	625
1×300	755	662	792	700	720
1×400	853	717	899	767	815
1×500	962	791	1016	851	918
1×630	1082	861	1146	935	1027
1×800	1170	904	1246	987	1119
1×1000	1261	961	1345	1055	1214

Voltage drop acc. to BS 7671 Table 4E3B (conductor 90 °C)

Size (mm ²)	DC (mV/A/m)	1-ph AC, 2 cables touching, z (mV/A/m)	3-ph AC, trefoil or touching, z (mV/A/m)	3-ph AC, flat touching, z (mV/A/m)
1×50	0.980	1.000	0.870	0.88
1×70	0.670	0.710	0.620	0.65
1×95	0.490	0.550	0.470	0.52
1×120	0.390	0.450	0.390	0.44
1×150	0.310	0.380	0.330	0.39
1×185	0.250	0.330	0.280	0.34
1×240	0.195	0.280	0.240	0.30
1×300	0.155	0.250	0.210	0.28
1×400	0.115	0.220	0.195	0.27
1×500	0.093	0.210	0.180	0.25
1×630	0.073	0.195	0.170	0.24
1×800	0.056	0.190	0.165	0.23
1×1000	0.045	0.180	0.155	0.21

Dimensions and weights are nominal values of the leading reference source; actual dimensions may vary within manufacturing tolerances, so check them when selecting glands and cleats. Conductor resistances are the IEC 60228 class 2 maxima. All values are indicative and non-binding.