



BS 6724 Armoured Power Cables, 1900/3300V

Application

These cables are used for power and control circuits, they can offer excellent protection through the use of a heavy galvanized steel wire armour. The GSWA makes them suitable for use inside and outside buildings or for direct burial in the ground. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

Construction

Conductor	Solid Aluminum or Annealed Copper conductor, circular or shaped, Class 2 to BS EN60228.
Insulation	XLPE (Cross-Linked Polyethylene) Type GP 8 conforming to BS 7655-1.3 or type GP 6 conforming to BS 7655-1.2.
Colour Code	1 Core : Brown or Blue 2 Cores: Brown, Blue 3 Cores: Brown, Black, Grey 4 Cores: Blue, Brown, Black, Grey 5 Cores: Green/Yellow, Blue, Brown, Black, Grey Above 5 Cores: White Cores with black numbers
Bedding	The bedding shall consist of an extruded layer of polymeric material consistent with the operating temperature of the cable.
Armour	Single Core: AWA (Aluminum Wire Armour) Multi Core: GSWA (Galvanized Steel Wire Armour)
Outer Sheath	LSOH (Low Smoke Zero Halogen), conforming to BS 7655-6.1.

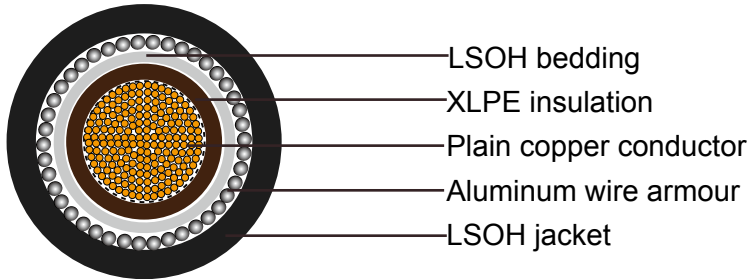
Technical Information

Voltage rating	1900/3300V
Temperature rating	0°C to +90°C
Min. bending radius	8 x overall diameter
Flame retardant	BS EN 60332-1-2 ; BS EN 60332-3-24:2009
Halogen free	BS EN 60754-1
Smoke density	BS EN 61034-2



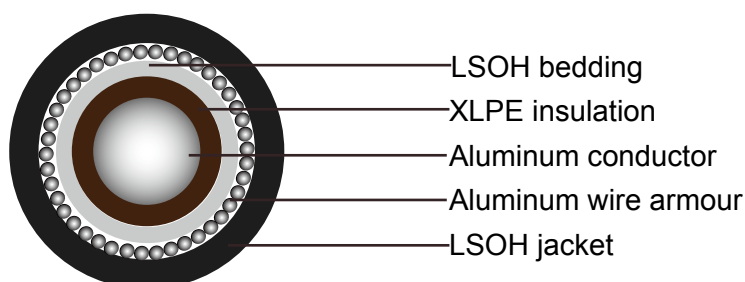
Cable Parameter

Single-core 1900/3300 V cables with circular stranded copper conductor



Nominal Cross-sectional Area	Strand Type	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Alum Wire Armor dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx Weight
mm ²	No./mm	mm	mm	mm	mm	mm	kg/km
1x50	19/1.78	2	0.8	1.25	1.6	20.6	790
1x70	19/2.14	2	0.8	1.25	1.6	22.4	1040
1x95	19/2.52	2	0.8	1.25	1.6	24.3	1330
1x120	37/2.03	2	1	1.6	1.7	27.2	1680
1x150	37/2.25	2	1	1.6	1.7	28.8	1970
1x185	37/2.52	2	1	1.6	1.8	30.8	2370
1x240	61/2.25	2	1	1.6	1.8	33.5	2960
1x300	61/2.52	2	1	1.6	1.9	36.1	3610
1x400	61/2.85	2	1.2	2	2	40.5	4600
1x500	61/3.20	2.2	1.2	2	2.1	44.2	5680
1x630	127/2.52	2.4	1.2	2	2.2	48.8	7160
1x800	127/2.85	2.6	1.4	2.5	2.4	55.4	9150
1x1000	127/3.20	2.8	1.4	2.5	2.5	60.6	11270

Single-core 1900/3300 V cables with solid aluminum conductor

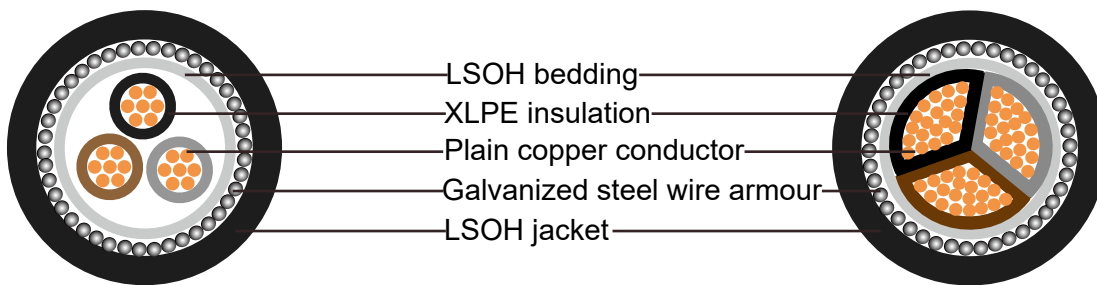


Addison Cables

BS6724 Armoured Power Cables, 1900/3300V

Nominal Cross-sectional Area	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Alum Wire Armor dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx Weight
mm ²	mm	mm	mm	mm	mm	kg/km
1x50	2	0.8	1.25	1.6	19.4	600
1x70	2	0.8	1.25	1.6	20.9	710
1x95	2	0.8	1.25	1.6	22.5	810
1x120	2	1	1.6	1.7	25.2	1065
1x150	2	1	1.6	1.7	26.5	1210
1x185	2	1	1.6	1.8	28.3	1390
1x240	2	1	1.6	1.8	30.5	1630
1x300	2	1	1.6	1.9	32.8	1900

Three-core 1900/3300 V cables with stranded copper conductors

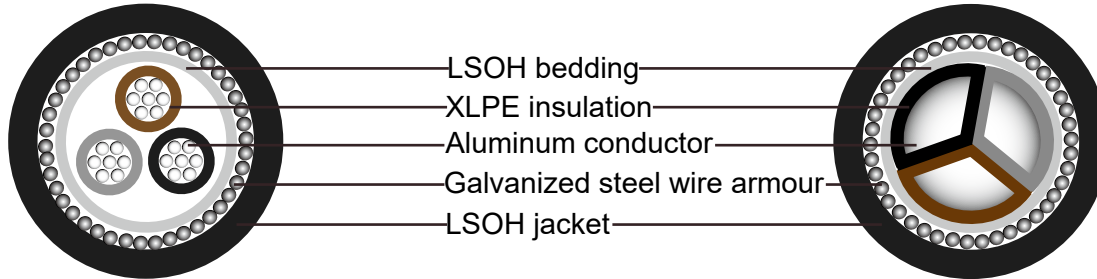


Nominal Cross-sectional Area	Strand Type	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Wire Armor dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx Weight
mm ²	No./mm	mm	mm	mm	mm	mm	kg/km
3x16	7/1.70	2	1	1.6	1.8	29.3	1600
3x25	7/2.14	2	1	1.6	1.8	32.2	2060
3x35	7/2.52	2	1	1.6	1.9	34.8	2400
3x35*	7/2.52	2	1	1.6	1.9	31.1	2400
3x50*	19/1.78	2	1.2	2	2	34.7	3200
3x70*	19/2.14	2	1.2	2	2.1	38	3800
3x95*	19/2.52	2	1.2	2	2.2	41.4	4730
3x120*	37/2.03	2	1.4	2.5	2.3	45.7	6070
3x150*	37/2.25	2	1.4	2.5	2.4	48.5	7010
3x185*	37/2.52	2	1.4	2.5	2.5	51.9	8270
3x240*	61/2.25	2	1.6	2.5	2.6	56.9	10310
3x300*	61/2.52	2	1.6	2.5	2.7	61.2	12300
3x400*	61/2.85	2	1.6	2.5	2.9	66.6	14500

* Shaped stranded conductor (class 2)



Three-core 1900/3300 V cables with solid aluminum conductors



Nominal Cross-sectional Area	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Wire Armor dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx Weight
mm ²	mm	mm	mm	mm	mm	kg/km
3x16	2	1	1.6	1.8	27.9	1540
3x25	2	1	1.6	1.8	30.4	1780
3x35	2	1	1.6	1.9	32.7	2040
3x35*	2	1	1.6	1.9	29.7	2040
3x50*	2	1.2	2	2	33	2760
3x70*	2	1.2	2	2.1	36	3210
3x95*	2	1.2	2	2.2	39.1	3625
3x120*	2	1.4	2.5	2.3	43.1	4820
3x150*	2	1.4	2.5	2.4	45.6	5410
3x185*	2	1.4	2.5	2.5	48.7	6070
3x240*	2	1.6	2.5	2.6	53.2	7150
3x300*	2	1.6	2.5	2.7	57.2	8120

* Solid shaped conductor (class 1)



Technical Reference

Maximum resistance of conductor and armour for single-core cable having aluminum wire armour

Nominal cross sectional area of conductor	Maximum resistance per km of cable at 20 °C					
	Copper conductor	Aluminum conductor	Aluminum wire armour			
			Cables with stranded copper conductor		Cables with solid aluminum conductor	
			600/1000 V	1900/3300 V	600/1000 V	1900/3300 V
mm ²	Ω	Ω	Ω	Ω	Ω	Ω
50	0.387	0.641	1.3	0.75	1.4	0.79
70	0.268	0.443	0.75	0.67	0.84	0.73
95	0.193	0.32	0.67	0.61	0.75	0.67
120	0.153	0.253	0.61	0.42	0.69	0.47
150	0.124	0.206	0.42	0.39	0.47	0.43
185	0.0991	0.164	0.38	0.37	0.42	0.4
240	0.0754	0.125	0.34	0.34	0.38	0.37
300	0.0601	0.1	0.31	0.31	0.35	0.34
400	0.047	—	0.22	0.22	—	—
500	0.0366	—	0.2	0.2	—	—
630	0.0283	—	0.18	0.18	—	—
800	0.0221	—	0.13	0.13	—	—
1 000	0.0176	—	0.12	0.12	—	—

Maximum resistance of conductor and armour for two-, three-, four- and five-core cables having wire armour

1) With stranded copper conductor

Nominal cross sectional area of conductor	Maximum resistance per km of cable at 20 °C						
	Copper conductor	Aluminum conductor	Steel wire armour				
			Cables with stranded copper conductors				
			Two-core	Three-core		Four-core	Five-core
mm ²	Ω	Ω	600/1000 V	600/1000 V	1900/3300 V	600/1000 V	600/1000 V
1.5	12.1	—	10.2	9.5	—	8.8	8.2
2.5	7.41	—	8.8	8.2	—	7.7	6.8
4	4.61	—	7.9	7.5	—	6.8	6.2
6	3.08	—	7	6.7	—	4.3	3.9
10	1.83	—	6	4	—	3.7	3.4
16	1.15	1.91	3.7	3.5	1.9	3.1	2.2



Nominal cross sectional area of conductor	Maximum resistance per km of cable at 20 °C						
	Copper conductor	Aluminum conductor	Steel wire armour				
			Cables with stranded copper conductors				
			Two-core	Three-core		Four-core	Five-core
600/1000 V	600/1000 V	1900/3300 V	600/1000 V	600/1000 V	600/1000 V		
mm ²	Ω	Ω	Ω	Ω	Ω	Ω	Ω
25	0.727	1.2	3.7	2.5	1.7	2.0 2.3	1.8
35	0.524	0.868	2.6	2.3	1.8	—	1.6
50	0.387	0.641	2.3	2	1.3	1.8	1.1
70	0.268	0.443	2	1.8	1.2	1.2	0.94
95	0.193	0.32	1.4	1.3	1.1	1.1	—
120	0.153	0.253	1.3	1.2	0.76	0.76	—
150	0.124	0.206	1.2	0.78	0.71	0.68	—
185	0.099 1	0.164	0.82	0.71	0.65	0.61	—
240	0.075 4	0.125	0.73	0.63	0.59	0.54	—
300	0.060 1	0.1	0.67	0.58	0.55	0.49	—
400	0.047 0	—	0.59	0.52	0.5	0.35	—

2) With solid aluminum conductor

Nominal cross-sectional area of conductor	Maximum resistance per km of cable at 20 °C					
	Copper conductor	Aluminum conductor	Steel wire armour			
			Cables with solid aluminum conductors			
			Two-core	Three-core		Four-core
600/1000 V	600/1000 V	1900/3300 V	600/1000 V			
mm ²	Ω	Ω	Ω	Ω	Ω	Ω
1.5	12.1	—	—	—	—	—
2.5	7.41	—	—	—	—	—
4	4.61	—	—	—	—	—
6	3.08	—	—	—	—	—
10	1.83	—	—	—	—	—
16	1.15	1.91	4	3.8	2	3.4
25	0.727	1.2	4.1	2.7	1.9	2.4
35	0.524	0.868	2.9	2.5	1.9	2.2
50	0.387	0.641	2.6	2.2	1.4	1.9
70	0.268	0.443	2.3	1.9	1.3	1.3
95	0.193	0.32	1.6	1.4	1.2	1.2
120	0.153	0.253	—	1.2	0.82	0.82
150	0.124	0.206	—	0.86	0.76	0.74
185	0.099 1	0.164	—	0.76	0.71	0.67
240	0.075 4	0.125	—	0.68	0.64	0.59
300	0.060 1	0.1	—	0.63	0.59	0.54
400	0.047 0	—	—	—	—	—



Electrical Properties(600/1000 V)

1) Single core with copper conductor

Nominal area of conductor	Single Core Stranded Copper Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
50	235	235	222	0.87	0.93	0.87
70	290	280	285	0.62	0.70	0.62
95	345	330	346	0.47	0.56	0.47
120	390	370	402	0.39	0.48	0.39
150	435	405	463	0.33	0.43	0.33
185	490	440	529	0.28	0.39	0.28
240	560	500	625	0.24	0.35	0.24
300	630	550	720	0.21	0.32	0.21
400	700	580	815	0.20	0.30	0.20
500	770	620	918	0.18	0.28	0.18
630	840	670	1027	0.17	0.26	0.17
800	888	692	1119	0.17	0.25	0.17
1000	942	735	1214	0.16	0.24	0.16

1) Single core with aluminum conductor

Nominal area of conductor	Single Core Aluminum Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
50	175	180	162	1.40	1.60	1.40
70	220	220	207	0.98	1.00	0.98
95	260	260	252	0.72	0.79	0.74
120	295	295	292	0.58	0.66	0.60
150	330	330	337	0.48	0.57	0.49
185	375	365	391	0.39	0.49	0.41
240	435	410	465	0.31	0.42	0.34
300	490	455	540	0.27	0.38	0.29
400	540	480	625	0.35	0.38	0.25
500	580	510	714	0.31	0.35	0.22
630	630	540	801	0.28	0.32	0.20



2) Two cores with copper conductor

Nominal area of conductor	Two Cores Stranded Copper Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
16*	140	115	115	2.9	2.9	2.9
25*	180	145	152	1.9	1.9	1.9
35*	215	175	188	1.3	1.3	1.3
50	255	210	228	1.0	1.0	1.0
70	315	260	291	0.7	0.7	0.7

2) Two cores with aluminum conductor

Nominal area of conductor	Two Cores Aluminum Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
25*	135	110	112	3.1	3.1	3.1
35*	165	130	138	2.2	2.2	2.2
50	195	155	166	1.7	1.7	1.7
70	240	195	211	1.1	1.1	1.1
95	288	237	254	0.8	0.8	0.8

3) Three cores with copper conductor

Nominal area of conductor	Three Cores Stranded Copper Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
16	115	94	99	2.5	2.5	2.5
25	150	125	131	1.7	1.7	1.7
35	180	150	162	1.2	1.2	1.2
50	215	175	197	0.9	0.9	0.9
70	265	215	251	0.6	0.6	0.6
95	315	260	304	0.5	0.5	0.5
120	360	300	353	0.4	0.4	0.4
150	405	335	406	0.3	0.3	0.3
185	460	380	463	0.3	0.3	0.3
240	530	440	546	0.2	0.2	0.2
300	590	495	628	0.2	0.2	0.2
400	667	570	728	0.2	0.2	0.2



3) Three cores with aluminum conductor

Nominal area of conductor	Three Cores Aluminum Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
16	89	72	74	4.2	4.2	4.2
25	115	94	98	2.7	2.7	2.7
35	135	110	120	1.9	1.9	1.9
50	165	135	145	1.4	1.4	1.4
70	200	165	185	1.0	1.0	1.0
95	240	200	224	0.7	0.7	0.7
120	275	230	264	0.6	0.6	0.6
150	310	255	305	0.5	0.5	0.5
185	350	295	350	0.4	0.4	0.4
240	410	340	418	0.3	0.3	0.3
300	460	385	488	0.3	0.3	0.3
400	520	443	562	0.2	0.2	0.2

4) Four cores with copper conductor

Nominal area of conductor	Four Cores Stranded Copper Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
16	115	94	99	2.5	2.5	2.5
25	150	125	131	1.7	1.7	1.7
35	180	150	162	1.2	1.2	1.2
50	215	175	197	0.9	0.9	0.9
70	265	215	251	0.6	0.6	0.6
95	315	260	304	0.5	0.5	0.5
120	360	300	353	0.4	0.4	0.4
150	405	335	406	0.3	0.3	0.3
185	460	380	463	0.3	0.3	0.3
240	530	440	546	0.2	0.2	0.2
300	590	495	628	0.2	0.2	0.2
400	667	570	728	0.2	0.2	0.2
500	720	605	800	0.2	0.2	0.2



4) Four cores with aluminum conductor

Nominal area of conductor	Four Cores Aluminum Conductors					
	Current Ratings			Approximate voltage drop per ampere per metre		
	Direct in ground	In single way ducts	Installed in air	Ground	Duct	Air
mm ²	amps	amps	amps	mV	mV	mV
16	89	72	74	4.2	4.2	4.2
25	115	94	98	2.7	2.7	2.7
35	135	110	120	1.9	1.9	1.9
50	165	135	145	1.4	1.4	1.4
70	200	165	185	1.0	1.0	1.0
95	240	200	224	0.7	0.7	0.7
120	275	230	264	0.6	0.6	0.6
150	310	255	305	0.5	0.5	0.5
185	350	295	350	0.4	0.4	0.4
240	410	340	418	0.3	0.3	0.3
300	460	385	488	0.3	0.3	0.3
400	520	443	562	0.2	0.2	0.2
500	561	470	618	0.2	0.2	0.2

Electrical Properties(1900/3300 V)

Nominal area of conductor	Single Core Stranded Copper Conductors			Nominal area of conductor	Three Core Stranded Copper Conductors		
	Current Ratings				Current Ratings		
	Direct in ground	In single way ducts	Installed in air		Direct in ground	In single way ducts	Installed in air
mm ²	amps	amps	amps	mm ²	amps	amps	amps
50	222	219	228	16	114	96	106
70	271	264	285	25	147	124	142
95	324	310	350	35	175	147	168
120	366	342	407	50	207	174	202
150	409	376	463	70	254	214	255
185	460	414	528	95	304	257	312
240	528	464	623	120	345	293	361
300	589	506	710	150	387	328	410
400	651	535	808	185	436	371	471
500	720	579	915	240	502	428	554
630	789	624	1030	300	563	480	634
800	831	650	1119	-	-	-	-
1000	880	689	1214	-	-	-	-