

# CURRENT RATINGS

Compiled from BS 7671: 2008 Requirements for Electrical Installations: IEE Wiring Regulations 17th Edition and ERA Reports 69-30 Part III and Part V

The following cable ranges are covered in this publication:

**General wiring cables**  
**Flexible cables and cords**  
**XLPE armoured cables**  
**Mineral insulated cables**  
**Firetec fire performance cables**  
**Protec cables**

## **SAFETY WARNING**

IN ORDER THAT ELECTRIC CABLE IS SAFE AND POSES NO RISK TO HEALTH, IT SHOULD BE INSTALLED IN ACCORDANCE WITH BS 7671 (IEE WIRING REGULATIONS, 17TH EDITION).

Installation should only be carried out by suitably qualified and approved persons, in accordance with the IEE on site guide and the IEE guidance note material.

## Current carrying capacity for 60°C rubber and 90°C rubber insulated flexible cables to BS 7919

Conductor	Current carrying capacity and associated voltage drop							
	60°C rubber insulated				90°C rubber insulated*			
	1 two-core cable* or 2 single core cables touching†		1 three-core, four-core or five-core cable		1 two-core cable* or 2 single core cables touching†		1 three-core, four-core or five-core cable	
mm²	d.c. or single phase a.c.		three phase a.c.		d.c. or single phase a.c.		three phase a.c.	
	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
4	30	12	26	10	42	13,2	37	11
6	39	7,8	34	6,7	55	8,5	49	7,3
10	51	4,6	47	4,0	76	5,1	66	4,3
16	73	2,9	63	2,5	103	3,2	89	2,7
25	97	1,8d 1,85a	83	1,55	136	2,03d 2,04a	119	1,73
35	140	1,31d 1,32a	102	1,15	200	1,42d 1,46a	146	1,23
50	175	0,91d 0,93a	124	0,84	250	1,00d 1,02a	177	0,93
70	216	0,64d 0,67a	158	0,58	310	0,71d 0,73a	225	0,64
95	258	0,49d 0,53a	192	0,44	369	0,54a 0,57d	273	0,49
120	302	0,38d 0,43a	222	0,36	432	0,42d 0,46a	316	0,39
150	347	0,31d 0,36a	255	0,30	497	0,34d 0,39a	363	0,32
185	394	0,25d 0,32a	291	0,26	564	0,27d 0,33a	414	0,27
240	471	0,19d 0,27a	343	0,21	673	0,21d 0,28a	487	0,23
300	541	0,15d 0,24a	394	0,185	773	0,167d 0,25a	560	0,195
400	644	0,115d 0,21a	-	-	885	0,127d 0,22a	-	-
500	738	0,090d 0,20a	-	-	1017	0,100d 0,20a	-	-
630	861	0,069d 0,185a	-	-	1190	0,074d 0,190a	-	-

### Notes:

- The tabulated current ratings are for cables in free air but may also be used for cables resting on a surface.
  - These ratings are not applicable to cables wound on reeling drums or covered over or coiled up. Refer to Table 4F2A Notes 2 & 3 of BS 7671.
  - Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671.
- \* Two-core only up to and including 25mm². Single-core ratings for 25mm² and above.
- † Larger voltage drop will result if the cables are spaced.
- # Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature. (See BS 7671 Regulations 512.1.2)

## Correction Factors

For Alternative Ambient Temperatures

60°C rubber insulated cables

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C

Correction Factor 1,04 1,0 0,91 0,82 0,71 0,58 0,41

90°C rubber insulated cables

Ambient Temperature 35°C 40°C 45°C 50°C 55°C 60°C 65°C 70°C 75°C 80°C 85°C

Correction Factor 0,95 0,91 0,86 0,82 0,76 0,70 0,64 0,57 0,50 0,40 0,28

E. & O.E.

## Current carrying capacity and associated voltage drop for thermoplastic (PVC) insulated and sheathed flat cable with protective conductor

BS 6004

Conductor operating temperature: 70°C Ambient temperature: 30°C

For installations required to comply with BS 7671

Conductor	Reference method 100 (above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in thickness)	Reference method 101 (above a plasterboard ceiling covered by thermal insulation exceeding 100mm in thickness)	Reference method 102 (in a stud wall with thermal insulation with cable touching the inner surface wall)	Reference method 103 (in a stud wall with thermal insulation with cable not touching the inner surface wall)	Reference method C (clipped direct)	Reference method A (enclosed in conduit in an insulated wall)	Voltage drop
	A	A	A	A	A	A	
mm²	A	A	A	A	A	A	mV/A/m
1	13	10,5	13	8	16	11,5	4,4
1,5	16	13	16	10	20	14,5	2,9
2,5	21	17	21	13,5	27	20	1,8
4	27	22	27	17,5	37	26	1,1
6	34	27	35	23,5	47	32	0,7,3
10	45	36	47	32	64	44	0,4,4
16	57	46	63	42,5	85	57	0,2,8

### Notes:

Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671

## Correction Factors

For Alternative Ambient Temperatures

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C

Correction Factor 1,03 1,0 0,94 0,87 0,79 0,71 0,61 0,50

For Grouping Refer to Table 4C1 of BS 7671

E. & O.E.

## Current carrying capacity and associated voltage drop and mass supportable for flexible cords to BS 6500

Conductor	Current carrying capacity		Voltage drop		Maximum mass supportable by twin flexible cord (see reg. 522,7.2 & 559,6,1.5)
	single phase a.c.	three phase a.c.	single phase a.c.	three phase a.c.	
mm²	A	A	mV/A/m	mV/A/m	kg
0,5	3	3	93	80	2
0,75	6	6	62	54	3
1,0	10	10	46	40	5
1,25	13	-	37	-	5
1,5	16	16	32	27	5
2,5	25	20	19	16	5
4	32	25	12	10	5

Above ratings are based on ambient of 30°C

For adjustment to other ambients refer to Table 4H3A of BS 7671

E. & O.E.

# Current carrying capacity and associated voltage drop for single core PVC insulated cables, non-armoured, with or without sheath

BS 6004

Conductor operating temperature: 70°C Ambient temperature: 30°C For installations required to comply with BS 7671

Conductor	Reference method A - enclosed in conduit in thermally insulating wall etc.				Reference method B - enclosed in conduit on a wall or in trunking etc.				Reference method C - clipped direct				Reference method F - in free air or on a perforated cable tray horizontal or vertical									
	2 cables, single phase a.c. or d.c.		3 or 4 cables, three phase a.c.		2 cables, single phase a.c. or d.c.		3 or 4 cables, three phase a.c.		2 cables, single phase a.c. or d.c. flat and touching		3 or 4 cables, three phase a.c. flat and touching or trefoil		Touching				Spaced by one diameter					
	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	A	mV/A/m	mV/A/m
1.0	11	44	10.5	38	13.5	44	12	38	15.5	44	14	38	-	-	-	-	-	-	-	-	-	-
1.5	14.5	29	13.5	25	17.5	29	15.5	25	20	29	18	25	-	-	-	-	-	-	-	-	-	-
2.5	20	18	18	15	24	18	21	15	27	18	25	15	-	-	-	-	-	-	-	-	-	-
4	26	11	24	9.5	32	11	28	9.5	37	11	33	9.5	-	-	-	-	-	-	-	-	-	-
6	34	7.3	31	6.4	41	7.3	36	6.4	47	7.3	43	6.4	-	-	-	-	-	-	-	-	-	-
10	46	4.4	42	3.8	57	4.4	50	3.8	65	4.4	59	3.8	-	-	-	-	-	-	-	-	-	-
16	61	2.8	56	2.4	76	2.8	68	2.4	87	2.8	79	2.4	-	-	-	-	-	-	-	-	-	-
25	80	1.75d 1.80a	73	1.55	101	1.75d 1.80a	89	1.55	114	1.75	104	1.55f 1.50t	131	1.75	114	1.55	110	1.50	146	130	1.75d 1.80a	1.55
35	99	1.25d 1.30a	89	1.10	125	1.25d 1.30a	110	1.10	141	1.25	129	1.10f 1.10t	162	1.25	143	1.10	137	1.10	181	162	1.25d 1.30a	1.15
50	119	0.93d 1.00a	108	0.85	151	0.93d 1.00a	134	0.85	182	0.93d 0.95a	167	0.84f 0.82t	196	0.93d 0.95a	174	0.84	167	0.82	219	197	0.93d 0.97a	0.86
70	151	0.63d 0.72a	136	0.61	192	0.63d 0.72a	171	0.61	234	0.63d 0.66a	214	0.60f 0.57t	251	0.63d 0.66a	225	0.60	216	0.57	281	254	0.63d 0.69a	0.63
95	182	0.46d 0.56a	164	0.48	232	0.46d 0.56a	207	0.48	284	0.46d 0.50a	261	0.47f 0.43t	304	0.46d 0.50a	275	0.47	264	0.43	341	311	0.46d 0.54a	0.51
120	210	0.36d 0.47a	188	0.41	269	0.36d 0.47a	239	0.41	330	0.36d 0.41a	303	0.40f 0.36t	352	0.36d 0.41a	321	0.40	308	0.36	396	362	0.36d 0.45a	0.44
150	240	0.29d 0.41a	216	0.36	300	0.29d 0.41a	262	0.36	381	0.29d 0.34a	349	0.34f 0.30t	406	0.29d 0.34a	372	0.34	356	0.30	456	419	0.29d 0.39a	0.40
185	273	0.23d 0.37a	245	0.32	341	0.23d 0.37a	296	0.32	436	0.23d 0.29a	400	0.31f 0.26t	463	0.23d 0.29a	427	0.31	409	0.26	521	480	0.23d 0.35a	0.36
240	321	0.18d 0.33a	286	0.29	400	0.18d 0.37a	346	0.29	515	0.18d 0.25a	472	0.27f 0.22t	546	0.18d 0.25a	507	0.27	485	0.22	615	569	0.18d 0.31a	0.34
300	367	0.145d 0.31a	328	0.27	458	0.145d 0.31a	394	0.27	594	0.145d 0.22a	545	0.25f 0.19t	629	0.145d 0.22a	587	0.25	561	0.19	709	659	0.145d 0.29	0.32
400	-	-	-	-	546	0.105d 0.29a	467	0.25	694	0.105d 0.20a	634	0.24f 0.175t	754	0.105d 0.20a	689	0.24	656	0.175	852	795	0.105d 0.27	0.31
500	-	-	-	-	626	0.086d 0.28a	533	0.25	792	0.086d 0.185a	723	0.23f 0.16t	868	0.086d 0.185a	789	0.23	749	0.16	982	920	0.086d 0.26	0.30
630	-	-	-	-	720	0.068d 0.27a	611	0.24	904	0.068d 0.175a	826	0.22f 0.15t	1005	0.068d 0.175a	905	0.22	855	0.15	1138	1070	0.068d 0.25	0.29
800	-	-	-	-	-	-	-	-	1030	0.053d 0.165a	943	0.22f 0.145t	1086	0.053d 0.165a	1020	0.22	971	0.145	1265	1188	0.053d 0.25	0.29
1000	-	-	-	-	-	-	-	-	1154	0.042d 0.16a	1058	0.21f 0.14t	1216	0.042d 0.16a	1149	0.21	1079	0.14	1420	1337	0.042d 0.24	0.28

Where more precise calculations require the use of resistive and reactive components of cable impedance, reference should be made to Table 4D1B of BS 7671.

### Notes:

- Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671.
- The current carrying capacities in columns 2 & 4 are also applicable to flexible cables to BS 6004 Table 1 (c) where the cables are used in fixed installations.
- Spacings larger than those specified in Method C (Table 4A) will result in a larger voltage drop.

## Correction Factors

For Ambient Temperature

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C 65°C

Correction Factor 1.03 1.0 0.94 0.87 0.79 0.71 0.61 0.50 0.35

For Grouping Refer to Table 4C1 of BS 7671

E. & O.E.

# Current carrying capacity and associated voltage drop for twin and multicore XLPE insulated cables, non-armoured

BS 7211

Conductor operating temperature: 90°C Ambient temperature: 30°C For installations required to comply with BS 7671

Conductor	Reference method A of Table 4E2A (enclosed in conduit in thermally insulating wall etc.)				Reference method B of Table 4E2A ('Enclosed')				Reference method C of Table 4E2A ('Clipped direct')				Reference method F of Table 4E1A (in free air)			
	1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.	
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
1.0	14.5	46	13	40	17	46	15	40	19	46	17	40	21	46	18	40
1.5	18.5	31	16.5	27	22	31	19.5	27	24	31	22	27	26	31	23	27
2.5	25	19	22	16	30	19	26	16	33	19	30	16	36	19	32	16
4	33	12	30	10	40	12	35	10	45	12	40	10	49	12	42	10
6	42	7.9	38	6.8	51	7.9	44	6.8	58	7.9	52	6.8	63	7.9	54	6.8
10	57	4.7	51	4.0	69	4.7	60	4.0	80	4.7	71	4.0	86	4.7	75	4.0
16	76	2.9	68	2.5	91	2.9	80	2.5	107	2.9	96	2.5	115	2.9	100	2.5
25	99	1.90a 1.85d	89	1.65	119	1.90a 1.85d	105	1.65	138	1.90a 1.85d	119	1.65	149	1.90a 1.85d	127	1.65
35	121	1.35a 1.35d	109	1.15	146	1.35a 1.35d	128	1.15	171	1.35a 1.35d	147	1.15	185	1.35a 1.35d	158	1.15
50	145	1.00a 0.98d	130	0.87	175	1.00a 0.98d	154	0.87	209	1.00a 0.98d	179	0.87	225	1.00a 0.98d	192	0.87
70	183	0.69a 0.67d	164	0.60	221	0.69a 0.67d	194	0.60	269	0.69a 0.67d	229	0.60	289	0.69a 0.67d	246	0.60
95	220	0.52a 0.49d	197	0.45	265	0.52a 0.49d	233	0.45	328	0.52a 0.49d	278	0.45	352	0.52a 0.49d	298	0.45
120	253	0.42a 0.39d	227	0.37	305	0.42a 0.39d	268	0.37	382	0.42a 0.39d	322	0.37	410	0.42a 0.39d	346	0.37
150	290	0.35a 0.31d	259	0.30	334	0.35a 0.31d	300	0.30	441	0.35a 0.31d	371	0.30	473	0.35a 0.31d	399	0.30
185	329	0.29a 0.25d	295	0.26	384	0.29a 0.25d	340	0.26	506	0.29a 0.25d	424	0.26	542	0.29a 0.25d	456	0.26
240	386	0.24a 0.195d	346	0.21	459	0.24a 0.195d	398	0.21	599	0.24a 0.195d	500	0.21	641	0.24a 0.195d	538	0.21
300	442	0.21a 0.155d	396	0.185	532	0.21a 0.155d	455	0.185	693	0.21a 0.155d	576	0.185	741	0.21a 0.155d	621	0.185
400	-	-	-	-	625	0.190a 0.120d	536	0.165	803	0.190a 0.120d	667	0.165	865	0.190a 0.120d	741	0.165

Where more precise calculations require the use of resistive and reactive components of cable impedance, reference should be made to Table 4E2B of BS 7671.

**Notes:**

- 1 Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671

## Correction Factors

For Ambient Temperature

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C 65°C 70°C 75°C 80°C

Correction Factor 1.02 1.0 0.96 0.91 0.87 0.82 0.76 0.71 0.65 0.58 0.50 0.41

For Grouping Refer to Table 4C1 of BS 7671

Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature. [See Regulation 512.1.2 of BS 7671].

E. & O.E.

# Current carrying capacity and associated voltage drop for single core XLPE insulated cables, non-armoured, with or without sheath

BS 7211 BS 7889

Conductor operating temperature: 90°C Ambient temperature: 30°C For installations required to comply with BS 7671

Conductor	Reference method A of Table 4E1A – enclosed in conduit in thermally insulating wall etc.				Reference method B of Table 4E1A – enclosed in conduit on a wall or in trunking etc.				Reference method C of Table 4E1A – clipped direct				Ref. method F of Table 4E1A (in free air or on a perforated cable tray)						Reference method G of Table 4E1A (in free air)			
	2 cables, single phase a.c. or d.c.		3 or 4 cables, three phase a.c.		2 cables, single phase a.c. or d.c.		3 or 4 cables, three phase a.c.		2 cables, single phase a.c. or d.c. flat and touching		3 or 4 cables, three phase a.c. flat and touching or trefoil		2 cables, single phase a.c. or d.c. flat		3 cables, three phase a.c. flat		3 cables, three phase a.c. trefoil		Spaced by one diameter			
	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Current carrying capacity	Voltage drop	Single phase
C.S.A.	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	A	mV/A/m	mV/A/m
1.0	14	46	13	40	17	46	15	40	19	46	17.5	40	-	-	-	-	-	-	-	-	-	-
1.5	19	31	17	27	23	31	20	27	25	31	23	27	-	-	-	-	-	-	-	-	-	-
2.5	26	19	23	16	31	19	28	16	34	19	31	16	-	-	-	-	-	-	-	-	-	-
4	35	12	31	10	42	12	37	10	46	12	41	10	-	-	-	-	-	-	-	-	-	-
6	45	7.9	40	6.8	54	7.9	48	6.8	59	7.9	54	6.8	-	-	-	-	-	-	-	-	-	-
10	61	4.7	54	4.0	75	4.7	66	4.0	81	4.7	74	4.0	-	-	-	-	-	-	-	-	-	-
16	81	2.9	73	2.5	100	2.9	88	2.5	109	2.9	99	2.5	-	-	-	-	-	-	-	-	-	-
25	106	1.85d 1.90a	95	1.65	133	1.85d 1.90a	117	1.65	143	1.85	130	1.60f 1.60t	161	1.85	141	1.60	135	1.60	182	161	1.85d 1.85a	1.65
35	131	1.35d 1.35a	117	1.15	164	1.35d 1.35a	144	1.15	176	1.35	161	1.15f 1.15t	200	1.35	176	1.15	169	1.15	226	201	1.35d 1.35a	1.20
50	158	0.99d 1.05a	141	0.90	198	0.99d 1.05a	175	0.90	228	0.99d 1.00a	209	0.87f 0.87t	242	0.99d 1.00a	216	0.87	207	0.87	275	246	0.99d 1.00a	0.89
70	200	0.68d 0.75a	179	0.65	253	0.68d 0.75a	222	0.65	293	0.68d 0.71a	268	0.62f 0.61t	310	0.68d 0.71a	279	0.62	268	0.61	353	318	0.68d 0.73a	0.65
95	241	0.49d 0.58a	216	0.50	306	0.49d 0.58a	269	0.50	355	0.49d 0.52a	326	0.46f 0.45t	377	0.49d 0.52a	342	0.46	328	0.45	430	389	0.49d 0.56a	0.49
120	278	0.39d 0.48a	249	0.42	354	0.39d 0.48a	312	0.42	413	0.39d 0.43a	379	0.38f 0.37t	437	0.39d 0.43a	400	0.38	383	0.37	500	454	0.39d 0.47a	0.42
150	318	0.32d 0.43a	285	0.37	393	0.32d 0.43a	342	0.37	476	0.32d 0.36a	436	0.32f 0.31t	504	0.32d 0.36a	464	0.32	444	0.31	577	527	0.32d 0.41a	0.37
185	362	0.25d 0.37a	324	0.32	449	0.25d 0.37a	384	0.32	545	0.25d 0.30a	500	0.28f 0.26t	575	0.25d 0.30a	533	0.28	510	0.26	661	605	0.25d 0.36a	0.33
240	424	0.19d 0.33a	380	0.29	528	0.19d 0.33a	450	0.29	644	0.19d 0.25a	590	0.24f 0.22t	679	0.19d 0.25a	634	0.24	607	0.22	781	719	0.19d 0.31a	0.29
300	486	0.155d 0.31a	435	0.27	603	0.155d 0.31a	514	0.27	743	0.155 0.22	681	0.21f 0.195t	783	0.155 0.22	736	0.21	703	0.195	902	833	0.155 0.29	0.27
400	-	0.120d 0.29a	-	0.25	683	0.120d 0.29a	584	0.25	868	0.120 0.20	793	0.195f 0.175t	940	0.120 0.20	868	0.195	823	0.175	1085	1008	0.120 0.27	0.26
500	-	0.093d 0.28a	-	0.24	783	0.093d 0.28a	666	0.24	990	0.093 0.185	904	0.180f 0.160t	1083	0.093 0.185	998	0.180	946	0.160	1253	1169	0.093 0.26	0.25
630	-	0.072d 0.27a	-	0.23	900	0.072d 0.27a	764	0.23	1130	0.072 0.175	1033	0.170f 0.145t	1254	0.072 0.175	1151	0.170	1088	0.15	1454	1362	0.072 0.25	0.24
800	-	-	-	-	-	-	-	-	1280	0.056 0.170	1179	0.165f 0.145t	1358	0.056 0.170	1275	0.165	1214	0.145	1581	1485	0.056 0.25	0.24
1000	-	-	-	-	-	-	-	-	1443	0.045 0.165	1323	0.165f 0.140t	1520	0.045 0.165	1436	0.165	1349	0.140	1775	1671	0.045 0.24	0.24

Where more precise calculations require the use of resistive and reactive components of cable impedance, reference should be made to Table 4E1B of BS 7671.

### Notes:

- Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671
- The current carrying capacities in columns 2 & 4 are also applicable to flexible cables to BS 7211 Table 3 (b) where the cables are used in fixed installations.
- Spacing larger than those specified in Method C (Table 4A) will result in a larger voltage drop.
- Where these cables are installed in rigid PVC conduit, the current carrying capacities for PVC insulated cables to Table 4D1A of BS 7671 should be used.

## Correction Factors

For Ambient Temperature

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C 65°C 70°C 75°C 80°C

Correction Factor 1.02 1.0 0.96 0.91 0.87 0.82 0.76 0.71 0.65 0.58 0.50 0.41

For Grouping Refer to Table 4C1 of BS 7671

Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature. (See Regulation 512.1.2 of BS 7671).

E. & O.E.

## Current carrying capacity and associated voltage drop for Firetec Standard and Firetec Enhanced cables to BS 7629, Protec cables to BS 8436. Also twin and multicore PVC insulated cables, non-armoured BS 6004

BS 7629 BS 6004 BS 8436.

Conductor operating temperature: 70°C Ambient temperature: 30°C For installations required to comply with BS 7671

Conductor	Reference method A of Table 4D2A (enclosed in conduit in thermally insulating wall etc.)				Reference method B of Table 4D2A ('Enclosed')				Reference method C of Table 4D2A ('Clipped direct')				Reference method E of Table 4D2A (Free air)			
	1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.		1 two-core cable, with or without protective conductor single phase a.c. or d.c.		1 three-core or 1 four-core cable, with or without protective conductor three phase a.c.	
	C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
1.0	11	44	10	38	13	44	11.5	38	15	44	13.5	38	17	44	14.5	38
1.5	14	29	13	25	16.5	29	15	25	19.5	29	17.5	25	22	29	18.5	25
2.5	18.5	18	17.5	15	23	18	20	15	27	18	24	15	30	18	25	15
4	25	11	23	9.5	30	11	27	9.5	36	11	32	9.5	40	11	34	9.5
6	32	7.3	29	6.4	38	7.3	34	6.4	46	7.3	41	6.4	51	7.3	43	6.4
10	43	4.4	39	3.8	52	4.4	46	3.8	63	4.4	57	3.8	70	4.4	60	3.8
16	57	2.8	52	2.4	69	2.8	62	2.4	85	2.8	76	2.4	94	2.8	80	2.4
25	75	1.75a 1.75d	68	1.50	90	1.75a 1.75d	80	1.50	112	1.75a 1.75d	96	1.50	119	1.75a 1.75d	101	1.50
35	92	1.25a 1.25d	83	1.10	111	1.25a 1.25d	99	1.10	138	1.25a 1.25d	119	1.10	148	1.25a 1.25d	126	1.10
50	110	0.94a 0.93d	99	0.81	133	0.94a 0.93d	118	0.81	168	0.94a 0.93d	144	0.81	180	0.94a 0.93d	153	0.81
70	139	0.65a 0.63d	125	0.57	168	0.65a 0.63d	149	0.57	213	0.65a 0.63d	184	0.57	232	0.65a 0.63d	196	0.57
95	167	0.50a 0.46d	150	0.43	201	0.50a 0.46d	179	0.43	258	0.50a 0.46d	223	0.43	282	0.50a 0.46d	238	0.43
120	192	0.41a 0.36d	172	0.35	232	0.41a 0.36d	206	0.35	299	0.41a 0.36d	259	0.35	328	0.41a 0.36d	276	0.35
150	219	0.34a 0.29d	196	0.29	258	0.34a 0.29d	225	0.29	344	0.34a 0.29d	299	0.29	379	0.34a 0.29d	319	0.29
185	248	0.29a 0.23d	223	0.25	294	0.29a 0.23d	255	0.25	392	0.29a 0.23d	341	0.25	434	0.29a 0.23d	364	0.25
240	291	0.24a 0.18d	261	0.21	344	0.24a 0.18d	297	0.21	461	0.24a 0.18d	403	0.21	514	0.24a 0.18d	430	0.21
300	334	0.21a 0.145d	298	0.185	394	0.21a 0.145d	339	0.185	530	0.21a 0.145d	464	0.185	593	0.21a 0.145d	497	0.185
400	-	0.185a 0.105d	-	0.160	470	0.185a 0.105d	402	0.160	634	0.185a 0.105d	557	0.160	715	0.185a 0.105d	597	0.160

Where more precise calculations require the use of resistive and reactive components of cable impedance, reference should be made to Table 4D2B of BS 7671.

### Notes:

- Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671
- Cables to BS 7629 are rated for a conductor operating temperature of 70°C and are therefore included in this table, although the material used for the cable insulation is not PVC

## Correction Factors

For Ambient Temperature

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C

Correction Factor 1.03 1.0 0.94 0.87 0.79 0.71 0.61 0.50

For Grouping Refer to Table 4C1 of BS 7671

E. & O.E.

# Current carrying capacity and associated voltage drop for twin and multicore armoured XLPE insulated cables

BS 5467 BS 6724

Conductor operating temperature: 90°C Ambient temperature: 30°C air / 20°C ground for installations required to comply with BS 7671

Conductor	Reference method C of Table 4E4A ('Clipped direct')				Reference method E of Table 4E4A (Free air)				Reference method D - direct in ground or in ducting in ground, in or around buildings			
	1 two-core cable, single phase a.c. or d.c.		1 three or four-core cable, three phase a.c.		1 two-core cable, single phase a.c. or d.c.		1 three or four-core cable, three phase a.c.		1 two-core cable, single phase a.c. or d.c.		1 three or four-core cable, three phase a.c.	
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
1,5	27	31	23	27	29	31	25	27	25	31	21	27
2,5	36	19	31	16	39	19	33	16	33	19	28	16
4	49	12	42	10	52	12	44	10	43	12	36	10
6	62	7,9	53	6,8	66	7,9	56	6,8	53	7,9	44	6,8
10	85	4,7	73	4,0	90	4,7	78	4,0	71	4,7	58	4,0
16	110	2,9	94	2,5	115	2,9	99	2,5	91	2,9	75	2,5
25	146	1,90a 1,85d	124	1,65	152	1,90a 1,85d	131	1,65	116	1,90a 1,85d	96	1,65
35	180	1,35a 1,35d	154	1,15	188	1,35a 1,35d	162	1,15	139	1,35a 1,35d	115	1,15
50	219	1,00a 0,98d	187	0,87	228	1,00a 0,98d	197	0,87	164	1,00a 0,98d	135	0,87
70	279	0,69a 0,67d	238	0,60	291	0,69a 0,67d	251	0,60	203	0,69a 0,67d	167	0,60
95	338	0,52a 0,49d	289	0,45	354	0,52a 0,49d	304	0,45	239	0,52a 0,49d	197	0,45
120	392	0,42a 0,39d	335	0,37	410	0,42a 0,39d	353	0,37	271	0,42a 0,39d	223	0,37
150	451	0,35a 0,31d	386	0,30	472	0,35a 0,31d	406	0,30	306	0,35a 0,31d	251	0,30
185	515	0,29a 0,25d	441	0,26	539	0,29a 0,25d	463	0,26	343	0,29a 0,25d	281	0,26
240	607	0,24a 1,195d	520	0,21	636	0,24a 0,195d	546	0,21	395	0,24a 0,195d	324	0,21
300	698	0,21a 0,155d	599	0,185	732	0,21a 0,155d	628	0,185	446	0,21a 0,155d	365	0,185
400	787	0,190a 0,120d	673	0,165	847	0,190a 0,120d	728	0,165	-	0,190a 0,120d	-	0,165

Where more precise calculations require the use of resistive and reactive components of cable impedance, reference should be made to Table 4E4B of BS 7671.

**Notes:**

- 1 Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671

## Correction Factors

For Ambient Temperature

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C 65°C 70°C 75°C 80°C

Correction Factor 1,02 1,00 0,96 0,91 0,87 0,82 0,76 0,65 0,58 0,50 0,41

For Grouping Refer to Table 4C1 of BS 7671

Ground Temperature

Ambient Temperature 10°C 15°C 20°C 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C 65°C 70°C 75°C 80°C

Correction Factor 1,07 1,04 1,00 0,96 0,93 0,89 0,85 0,80 0,76 0,71 0,65 0,60 0,53 0,46 0,38

Soil Resistivity

Thermal resistivity K.m/W 0,5 0,8 1 1,5 2 2,5 3

Rating factor for cables buried in ducts 1,28 1,20 1,18 1,1 1,05 1 0,96

Rating factor for direct buried cables 1,88 1,62 1,5 1,28 1,12 1 0,90

Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature [see Regulation 512.1.2 of BS 7671].

E. & O.E.

## Current carrying capacity and associated voltage drop for mineral insulated copper sheathed cables

BS EN 60702 Part 1:2002 Sheath temperature: 70°C  
Ambient temperature: 30°C For installations required to comply with BS 7671

### Current Ratings

#### Light Duty Cables (500 volt)

Conductor C.S.A.	two-core cables		three-core cables		four-core cables		seven-core cables	
	Reference method C Clipped direct	Reference method E Tray mounted	Reference method C Clipped direct	Reference method E Tray mounted	Reference method C Clipped direct	Reference method E Tray mounted	Reference method C Clipped direct	Reference method E Tray mounted
	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH
mm <sup>2</sup>	A	A	A	A	A	A	A	A
1,0	18,5	19,5	15	16,5	15	16,5	-	-
1,5	23	25	19	21	19	21	13	14
2,5	31	33	26	28	26	28	17,5	19
4,0	40	44	35	37	35	37	-	-

#### Multicore Heavy Duty Cables (750 volt)

Conductor C.S.A.	two-core cables		three-core cables		four-core cables		seven-core cables	
	Reference method 1 Clipped direct	Reference method 11 Tray mounted	Reference method 1 Clipped direct	Reference method 11 Tray mounted	Reference method 1 Clipped direct	Reference method 11 Tray mounted	Reference method 1 Clipped direct	Reference method 11 Tray mounted
	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH	LSZH
mm <sup>2</sup>	A	A	A	A	A	A	A	A
1,5	25	26	21	22	21	23	14,5	15,5
2,5	34	36	28	30	28	30	19,5	21
4,0	45	47	37	40	37	40	12 core 2,5	-
6,0	57	60	48	51	48	51	16	17
10,0	77	82	65	69	65	69	-	-
16,0	102	109	86	92	86	92	19 core 1,5	-
25,0	133	142	112	120	112	120	10	11

#### Single Core Heavy Duty Cables (750 volt)

Conductor C.S.A.	Reference method C Clipped direct		Reference method E, F & G free air, perforated tray etc.		Voltage drop	
	Single phase a,c, or d,c,	Three phase flat and touching	Single phase a,c, or d,c,	Three phase flat and touching	Single phase a,c, or d,c,	Three phase a,c,
	A	A	A	A	mV/A/m	mV/A/m
6	57	52	60	57	7	6
10	77	70	82	77	4,2	3,6
16	102	92	109	102	2,6	2,3
25	133	120	142	132	1,65	1,45
35	163	147	174	161	1,20	1,10
50	202	181	215	198	0,91	0,83
70	247	221	264	241	0,64	0,60
95	296	264	317	289	0,49	0,47
120	340	303	364	331	0,41	0,40
150	388	346	416	377	0,34	0,36
185	440	392	472	426	0,29	0,32
240	514	457	552	496	0,25	0,29

#### Associated Voltage Drop

Conductor C.S.A.	Voltage drop	
	Single phase	Three phase
	mV/A/m	mV/A/m
1,0	42	36
1,5	28	24
2,5	17	14
4,0	10	9,1
6,0	7	6
10,0	4,2	3,6
16,0	2,6	2,3
25,0	1,65	1,45

#### Note:

- Current ratings and volts drop values are for single phase operation, for three and four core cables: values are for three phase operation. They are based on Tables 4G1A and 4G1B of the 17th edition of the IEE Wiring Regulations [BS 7671], Method C (Clipped Direct) and Method E (Cable installed on a perforated cable tray) as indicated.

## Size of fuse element composed of tinned copper wire for use in semi-enclosed fuses

Nominal current of fuse element	Nominal diameter of wire
A	mm
3	0,15
5	0,20
10	0,35
15	0,50
20	0,60
25	0,75
30	0,85
45	1,25
60	1,53
80	1,80
100	2,00

## Spacing of supports for cables in accessible positions

Overall diameter of cable*	Maximum spacing of clips			
	Non-armoured rubber, PVC or lead sheathed cables		Armoured Cables	
	Horizontal <sup>†</sup>	Vertical <sup>†</sup>	Horizontal <sup>†</sup>	Vertical <sup>†</sup>
mm	mm	mm	mm	mm
Not exceeding 9	250	400	-	-
Exceeding 9 and not exceeding 15	300	400	350	450
Exceeding 15 and not exceeding 20	350	450	400	550
Exceeding 20 and not exceeding 40	400	550	450	600

\*Taken as the measurement of the major axis, in the case of flat cables.

<sup>†</sup>The spacings stated for the horizontal runs may be applied also to runs at an angle of more than 30° from the vertical. For runs at an angle of 30° or less from the vertical, the vertical spacings are applicable.

For the spacing of supports for cables of overall diameter exceeding 40mm and for single core cables having conductors of nominal area 300mm<sup>2</sup> and larger, the manufacturer's recommendations should be observed.

For a number of reasons, for instance as a result of improvements in design, in methods of manufacture or experience in the use or as permitted by the relevant British Standards specification, the products as supplied at any one time may differ from the descriptions given in this publication.

E. & O.E.