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 Near ( UET ) Swami Nager Lahore, Pakistan.  
 Phone Number: 0092-42-36827799, 36112822  
 Fax Number: +92-42-36827789, 031-36827799  
 E-mail [info@leo.com.pk](mailto:info@leo.com.pk) Web [www.leo.com.pk](http://www.leo.com.pk)

### COPPER CONDUCTOR CABLES CURRENT CARRYING CAPACITY DATA SHEET ACCORDING TO BRITISH STANDARD

#### Current Carrying Capacity Single Core Cables -BS 6004

#### **CURRENT CARRYING CAPACITY: SINGLE CORE CABLES-COPPER CONDUCTORS TO BS 6004**

CONDUCTOR	REFERENCE METHOD 4		REFERENCE METHOD 3		REFERENCE METHOD 1		REFERENCE METHOD 11		REFERENCE METHOD 12 (FREE AIR)		
	enclosed in conduit in	thermally insulating wall etc	enclosed in conduit on a wall or in trunking etc		clipped direct		on a perforated cable tray	horizontal	vertical		
CROSS SECTIONAL AREA					2 cables	3 or 4	2 cables	3 or 4	flat spaced	spaced	trefoil
	2 cables	3 or 4	2 cables	3 or 4	single phase	cables three	single phase	cables three	single phase	single phase	trefoil
	single phase	cables three	single phase	cables three	AC or DC	phase AC	AC or DC	phase AC	AC or DC or 3	AC or DC or 3	three phase
	AC or DC	phase AC	AC or DC	phase AC	flat touching	flat touching	flat touching	flat touching	cable tree phase	cable tree phase	AC
						or trefoil		or trefoil			
mm2	A	A	A	A	A	A	A	A	A	A	A
1	11	10.5	13.5	12	15.5	14	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	126	112	146	130	110
35	99	89	125	110	141	129	156	141	181	162	137
50	119	108	151	134	182	167	191	172	219	197	167
70	151	136	192	171	234	214	246	223	281	254	216
95	182	164	232	207	284	261	300	273	341	311	264



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120	210	188	269	239	330	303	349	318	396	362	308
150	240	216	300	262	381	349	404	369	456	419	356
185	273	245	341	296	436	400	463	424	521	480	409
240	320	286	400	346	515	472	549	504	615	569	485
300	367	328	458	394	594	545	635	584	709	659	561
400	-	-	546	467	694	634	732	679	852	795	656
500	-	-	626	533	792	723	835	778	982	920	749
630	-	-	720	611	904	826	953	892	1138	1070	855
800	-	-	-	-	1030	943	1086	1020	1265	1188	971
1000	-	-	-	-	1154	1058	1216	1149	1420	1337	1079

REFERENCE METHODS OF INSTALLATION ARE DESCRIBED IN IEEE REGULATIONS & B.S. 7671

Current Carrying Capacity of Flexible cables to BS 6004, 6500 and HR PVC Cables to BS 6231 would be same as above when used in FIXED INSTALLATIONS.

### Current Carrying Capacity Single Core Cables -BS 7211

#### **CURRENT CARRYING CAPACITY: SINGLE CORE CABLES-COPPER CONDUCTORS TO BS 7211 & 7889**

CONDUCTOR	REFERENCE METHOD 4		REFERENCE METHOD 3		REFERENCE METHOD 1		REFERENCE METHOD 11		REFERENCE METHOD 12 (FREE AIR)		
CROSS SECTIONAL AREA	enclosed in conduit in thermally insulating wall etc		enclosed in conduit on a wall or in trucking etc		clipped direct		on a perforated cable tray		horizontal	vertical flat	Trefoil
	2 cables	3 or 4 cables	2 cables	3 or 4 cables	single phase	cables three	single phase	cables three	2 cables	2 cables	3 cable
	single phase	single phase	single phase	single phase	AC or DC	phase AC	AC or DC	phase AC	flat spaced	spaced	trefoil
	A.C or D.C	phase AC	A.C or D.C	phase AC	flat touching	flat touching	flat touching	flat touching	flat spaced	spaced	trefoil
						or trefoil		or trefoil			
mm <sup>2</sup>	A	A	A	A	A	A	A	A	A	A	A
1	14	13	17	15	19	17.5	-	-	-	-	-
1.5	18	17	22	19	25	23	-	-	-	-	-



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2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	124	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	683	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936
630	-	-	900	764	1130	1033	1191	1115	1423	1338	1069
800	-	-	-	-	1288	1179	1358	1275	1581	1485	1214
1000	-	-	-	-	1443	1323	1520	1436	1775	1671	1349

REFERENCE METHODS OF INSTALLATION ARE DESCRIBED IN IEEE REGULATIONS & B.S. 7671

Current Carrying Capacity of Flexible cables to BS 7211 would be same as above when used in FIXED INSTALLATIONS.

## Current Carrying Capacity Multi Core Cables -BS 6004

### **CURRENT CARRYING CAPACITY: MULTI-CORE CABLES-COPPER CONDUCTORS TO BS 6004**

CONDUCTOR	REFERENCE METHOD 4	REFERENCE METHOD 3	REFERENCE METHOD 1	REFERENCE METHOD 11OR 13
CROSS SECTIONAL	enclosed in conduit in	enclosed in conduit on a	clipped direct	on a perforated cable tray
AREA	thermally insulating wall etc	wall or in trunking etc		OR Free AIR
			2 cables	3 or 4
	2 cables	3 or 4	single	2 cables
		2 cables	3 or 4	3 or 4
			single	cables
				single
				cables



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	single phase	cables three	single phase	cables three	phase AC or DC	three phase AC	phase AC or DC	three phase AC
	AC or DC	phase AC	AC or DC	phase AC	flat touching	flat touching or trefoil	flat touching	flat touching or trefoil
mm <sup>2</sup>	A	A	A	A	A	A	A	A
1	11	10	13	11.5	15	13.5	17	14.5
1.5	14	13	16.5	15	19.5	17.5	22	18.5
2.5	18.5	17.5	23	20	27	24	30	25
4	25	23	30	27	36	32	40	34
6	32	29	38	34	46	41	51	43
10	43	39	52	46	63	57	70	60
16	57	52	69	62	85	76	94	80
25	75	68	90	80	112	96	119	101
35	92	83	111	99	138	119	148	126
50	110	99	133	118	168	144	180	153
70	139	125	168	149	213	184	232	196
95	167	150	201	179	258	223	282	238
120	192	172	232	206	299	259	328	276
150	219	196	258	225	344	299	379	319
185	248	223	294	255	392	341	434	364
240	291	261	344	297	461	403	514	430
300	334	298	394	339	530	464	593	497
400	-	-	470	402	634	557	715	597

REFERENCE METHODS OF INSTALLATION ARE DESCRIBED IN IEEE REGULATIONS & B.S. 7671

THESE ARE ALSO APPLICABLE TO CABLES WITH/WITHOUT CIRCUIT PROTECTIVE CONDUCTOR.



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### Current Carrying Capacity Flexible Cables -BS 6004 & BS 6500

NOMINAL CROSS-SECTION AREA OF CONDUCTOR	CURRENT-CARRYING CAPACITY ) AMPERES		VOLT DROP (mill volts per ampere per meter)		MAXIMUM MASS SUPPORTABLE BY TWIN FLEXIBLE CORD (see regulation 552-08-06)
	D.C. OR SINGLE PHASE A.C.	THREE PHASE A.C.	D.C. OR SINGLE PHASE A.C.	THREE PHASE A.C.	
mm <sup>2</sup>	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
2.5	25	20	19	16	5
4.0	32	25	12	10	5

AWG gauge	Conductor Diameter Inches	Conductor Diameter mm	Ohms per 1000 ft.	Ohms per km	Maximum amps for chassis wiring	Maximum amps for power transmission	Maximum frequency for 100% skin depth for solid conductor copper
0000	0.46	11.684	0.049	0.16072	380	302	125 Hz
000	0.4096	10.40384	0.0618	0.202704	328	239	160 Hz
00	0.3648	9.26592	0.0779	0.255512	283	190	200 Hz
0	0.3249	8.25246	0.0983	0.322424	245	150	250 Hz
1	0.2893	7.34822	0.1239	0.406392	211	119	325 Hz
2	0.2576	6.54304	0.1563	0.512664	181	94	410 Hz
3	0.2294	5.82676	0.197	0.64616	158	75	500 Hz
4	0.2043	5.18922	0.2485	0.81508	135	60	650 Hz
5	0.1819	4.62026	0.3133	1.027624	118	47	810 Hz
6	0.162	4.1148	0.3951	1.295928	101	37	1100 Hz
7	0.1443	3.66522	0.4982	1.634096	89	30	1300 Hz
8	0.1285	3.2639	0.6282	2.060496	73	24	1650 Hz
9	0.1144	2.90576	0.7921	2.598088	64	19	2050 Hz
10	0.1019	2.58826	0.9989	3.276392	55	15	2600 Hz
11	0.0907	2.30378	1.26	4.1328	47	12	3200 Hz
12	0.0808	2.05232	1.588	5.20864	41	9.3	4150 Hz
13	0.072	1.8288	2.003	6.56984	35	7.4	5300 Hz



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14	0.0641	1.62814	2.525	8.282	32	5.9	6700 Hz
15	0.0571	1.45034	3.184	10.44352	28	4.7	8250 Hz
16	0.0508	1.29032	4.016	13.17248	22	3.7	11 k Hz
17	0.0453	1.15062	5.064	16.60992	19	2.9	13 k Hz
18	0.0403	1.02362	6.385	20.9428	16	2.3	17 kHz
19	0.0359	0.91186	8.051	26.40728	14	1.8	21 kHz
20	0.032	0.8128	10.15	33.292	11	1.5	27 kHz
21	0.0285	0.7239	12.8	41.984	9	1.2	33 kHz
22	0.0254	0.64516	16.14	52.9392	7	0.92	42 kHz
23	0.0226	0.57404	20.36	66.7808	4.7	0.729	53 kHz
24	0.0201	0.51054	25.67	84.1976	3.5	0.577	68 kHz
25	0.0179	0.45466	32.37	106.1736	2.7	0.457	85 kHz
26	0.0159	0.40386	40.81	133.8568	2.2	0.361	107 kHz
27	0.0142	0.36068	51.47	168.8216	1.7	0.288	130 kHz
28	0.0126	0.32004	64.9	212.872	1.4	0.226	170 kHz
29	0.0113	0.28702	81.83	268.4024	1.2	0.182	210 kHz
30	0.01	0.254	103.2	338.496	0.86	0.142	270 kHz
31	0.0089	0.22606	130.1	426.728	0.7	0.113	340 kHz
32	0.008	0.2032	164.1	538.248	0.53	0.091	430 kHz
Metric 2.0	0.00787	0.200	169.39	555.61	0.51	0.088	440 kHz
33	0.0071	0.18034	206.9	678.632	0.43	0.072	540 kHz
Metric 1.8	0.00709	0.180	207.5	680.55	0.43	0.072	540 kHz
34	0.0063	0.16002	260.9	855.752	0.33	0.056	690 kHz
Metric 1.6	0.0063	0.16002	260.9	855.752	0.33	0.056	690 kHz
35	0.0056	0.14224	329	1079.12	0.27	0.044	870 kHz
Metric 1.4	.00551	.140	339	1114	0.26	0.043	900 kHz
36	0.005	0.127	414.8	1360	0.21	0.035	1100 kHz
Metric 1.25	.00492	0.125	428.2	1404	0.20	0.034	1150 kHz
37	0.0045	0.1143	523.1	1715	0.17	0.0289	1350 kHz
Metric 1.12	.00441	0.112	533.8	1750	0.163	0.0277	1400 kHz

