



**Current Ratings – Table 4E3A Single core at 90°C armoured thermosetting insulated cables (non-magnetic armour)  
(Copper conductors)**

**Current – carrying capacity (amperes):**

Ambient temperature: 30°C , Conductor operating temperature: 90°C

Notes:

1. 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).
2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D3A) must be used (see regulation 523.1).

Conductors cross-sectional area	Reference method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray, horizontal or vertical)								
			Touching			Spaced by one cable diameter					
	2 cables single-phase a.c or d.c flat	3 or 4 cables, three phase a.c flat	2 cables single pahse a.c or d.c flat	3 cables single phase a.c glat	3 cables three phase a.c trefoil	2 cables, d.c		2 cables, single-phase a.c		3 or 4 cables, three phase a.c	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm <sup>2</sup> )	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	237	220	253	232	222	284	270	282	266	288	266
70	303	277	322	293	285	356	349	357	337	358	331
95	367	333	389	352	346	446	426	436	412	425	393
120	425	383	449	405	402	519	497	504	477	485	449
150	488	437	516	462	463	600	575	566	539	549	510
185	557	496	587	524	529	688	680	643	614	618	574
240	656	579	689	612	625	815	782	749	714	715	666
300	755	662	792	700	720	943	906	842	805	810	755
400	853	717	899	767	815	1137	1094	929	889	848	797
500	962	791	1016	851	918	1314	1266	1032	989	923	871
630	1082	861	1146	935	1027	1528	1474	1139	1092	992	940
800	1170	904	1246	987	1119	1809	1744	1204	1155	1042	978
1000	1261	961	1345	1055	1214	2100	2026	1289	1238	1110	1041

**Voltage Drop (per ampere per metre)**

Conductor operating temperature: 90°C

TABLE 4E3B

Conductor cross-sectional area 1 mm <sup>2</sup>	2 cables d.c 2 (mV/A/m)	Reference Methods C&F (clipped direct, on tray or in free air)														
		2 cables, single –phase a.c						3 or 4 cables, three phase a.c								
	Touching - 3 (mV/A/m)		Spaced* - 4 (mV/A/m)		Trefoil & touching – 5 (mV/A/m)			Flat & touching – 6 (mV/A/m)			Flat & spaced* - 7 (mV/A/m)					
	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	
50	0.98	0.99	0.21	1.00	0.98	0.29	1.0	0.86	0.180	0.87	0.84	0.25	0.88	0.84	0.33	0.90
70	0.67	0.68	0.200	0.71	0.69	0.29	0.75	0.59	0.170	0.62	0.60	0.25	0.65	0.62	0.32	0.70
95	0.49	0.51	0.195	0.55	0.53	0.28	0.60	0.44	0.170	0.47	0.46	0.24	0.52	0.49	0.31	0.58
120	0.39	0.41	0.190	0.45	0.43	0.27	0.51	0.35	0.165	0.39	0.38	0.24	0.44	0.41	0.30	0.51
150	0.31	0.33	0.185	0.38	0.36	0.27	0.45	0.29	0.160	0.33	0.31	0.23	0.39	0.34	0.29	0.45
185	0.25	0.27	0.185	0.33	0.30	0.26	0.40	0.23	0.160	0.28	0.26	0.23	0.34	0.29	0.29	0.41
240	0.195	0.21	0.180	0.28	0.24	0.26	0.35	0.180	0.155	0.24	0.21	0.22	0.30	0.24	0.28	0.37
300	0.155	0.170	0.175	0.25	0.195	0.25	0.32	0.145	0.150	0.21	0.170	0.22	0.28	0.20	0.27	0.34
400	0.115	0.145	0.170	0.22	0.180	0.24	0.30	0.125	0.150	0.195	0.160	0.21	0.27	0.20	0.27	0.33
500	0.093	0.125	0.170	0.21	0.165	0.24	0.29	0.105	0.145	0.180	0.145	0.20	0.25	0.190	0.24	0.31
630	0.073	0.105	0.165	0.195	0.150	0.23	0.27	0.092	0.135	0.170	0.135	0.195	0.24	0.175	0.23	0.29
800	0.056	0.090	0.160	0.190	0.145	0.23	0.27	0.086	0.130	0.165	0.130	0.180	0.23	0.175	0.195	0.26
1000	0.045	0.092	0.155	0.180	0.140	0.21	0.25	0.080	0.125	0.155	0.125	0.170	0.21	0.165	0.180	0.24

Note: \* spacing's larger than one cable diameter will result in larger volt drop

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