

Standard laying conditions		Other laying conditions	
Soil thermal resistivity	1.2K.m/W	$I_{standard}$ = Standard current rating in ducts or pipes	
Depth of burial	800mm	$I_{rated} = I_{standard} \times k_1 \times k_2 \times k_3 \times k_4$	
Soil temperature	25°C	$k_1$ = Table 1 $k_2$ = Table 2 $k_3$ = Table 3 $k_4$ = Table 4 to Table 5	

Table 1 – Rating factor for variation in soil temperature ( $k_1$ )

Soil temperature °C						
10	15	20	25	30	35	40
1.11	1.07	1.04	1.00	0.96	0.92	0.88

Table 2 – Rating factors for variation in soil thermal resistivity ( $k_2$ )

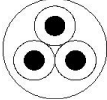
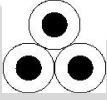
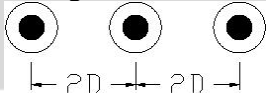
	Conductor size	Soil thermal resistivity K.m/W								
		mm <sup>2</sup>	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5
3 Core cable 	16–70	1.16	1.12	1.09	1.06	1.00	0.93	0.84	0.77	0.72
	95–150	1.18	1.13	1.09	1.06	1.00	0.93	0.83	0.76	0.71
	185–300	1.18	1.14	1.10	1.06	1.00	0.92	0.83	0.76	0.70
3 Single Core cables 	95–185	1.24	1.18	1.13	1.08	1.00	0.91	0.80	0.73	0.67
	240–500	1.25	1.18	1.13	1.08	1.00	0.91	0.80	0.72	0.66
	630–1000	1.27	1.20	1.14	1.09	1.00	0.90	0.79	0.71	0.65
3 Single Core cables 	95–185	1.24	1.18	1.13	1.08	1.00	0.91	0.80	0.72	0.66
	240–500	1.26	1.19	1.13	1.08	1.00	0.91	0.79	0.72	0.66
	630–1000	1.28	1.20	1.14	1.09	1.00	0.90	0.79	0.71	0.65

Table 3 – Rating factor for variation in depth of laying ( $k_3$ )

Depth of laying (m)	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Rating factor Single core	1.00	0.98	0.95	0.93	0.92	0.91	0.89
Rating factor Three core	1.00	0.98	0.96	0.95	0.94	0.93	0.91

**NOTE:**

The drying of soil or backfill was not taken in to consideration in these calculations.

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Table 4 – Group Rating factors for 3–core cables installed Direct in Ground (k<sub>4</sub>)

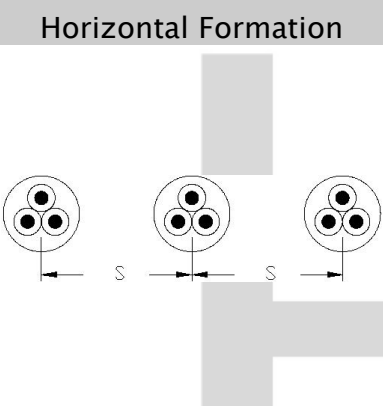
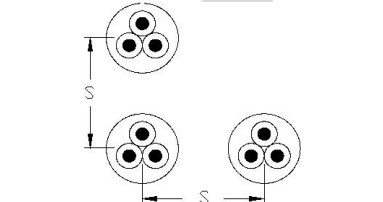
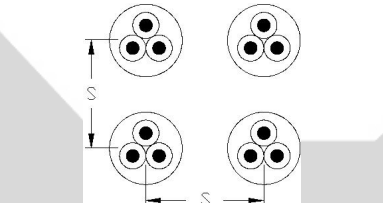
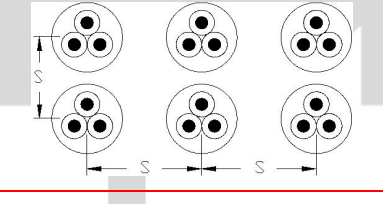
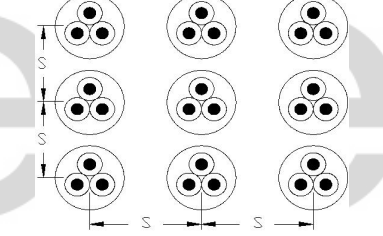
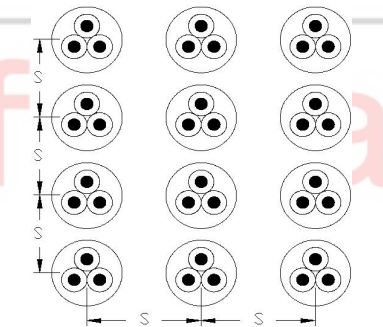
Layout of Cable Circuits	Number of Cable Circuits	Spacing of Circuits – S (mm)				
		Touching	150mm	300mm	450mm	600mm
	2	0.8	0.84	0.88	0.9	0.92
	3	0.7	0.74	0.79	0.83	0.86
	4	0.64	0.69	0.76	0.79	0.83
	5	0.59	0.65	0.72	0.77	0.8
	6	0.56	0.62	0.7	0.75	0.79
	7	0.53	0.6	0.68	0.74	0.78
	8	0.5	0.58	0.67	0.73	0.77
	9	0.48	0.57	0.66	0.72	0.76
	10	0.47	0.55	0.65	0.71	0.76
		3	0.69	0.73	0.78	0.8
		4	0.62	0.68	0.72	0.76
		6	0.53	0.58	0.64	0.67
		9	0.44	0.49	0.54	0.57
		12	0.39	0.44	0.49	0.52

Table 5 – Group Rating Factors single core cables installed Direct in Ground ( $k_4$ )

Layout of Cable Circuits	Number of Cable Circuits	Spacing of Circuits – S (mm)				
		Touching	150mm	300mm	450mm	600mm
<b>Horizontal Formation</b> 	2	0.79	0.81	0.85	0.88	0.9
	3	0.67	0.71	0.76	0.8	0.83
	4	0.61	0.65	0.72	0.76	0.8
	5	0.56	0.61	0.68	0.73	0.77
	6	0.53	0.58	0.66	0.72	0.76
	7	0.5	0.55	0.63	0.7	0.74
	8	0.48	0.53	0.62	0.69	0.74
	9	0.46	0.52	0.61	0.68	0.73
	10	0.45	0.51	0.6	0.67	0.73
	<b>Horizontal Formation</b> 	2			0.84	0.87
3				0.74	0.78	0.81
4				0.69	0.74	0.78
5				0.66	0.71	0.75
6				0.63	0.69	0.73
7				0.61	0.68	0.72
8				0.6	0.67	0.71
9				0.58	0.65	0.71
10				0.58	0.65	0.7
<b>Tier Formation</b> 		3	0.67	0.7	0.74	0.76
	4	0.6	0.63	0.68	0.72	0.74
	5	0.54	0.57	0.61	0.64	0.66
	6	0.5	0.53	0.58	0.61	0.63

*Disclaimer: The cable rating factors are designed as a guide for calculation of a wide range of cable types and cables sizes. While single rating factors remain reasonably accurate, the more factors that are applied simultaneously, larger possible variances arise. While every effort has been made to ensure the information contained herein is correct, CBI-electric: african cables disclaim responsibility for any action, proceedings, liabilities, claims, damages, costs, losses and expense in relation to, or arising out of any use of the factors. Due to continuous improvement CBI-electric: african cables reserves the right to change the above without notice.*