Low Voltage Distribution Cables
Rating Factors for Cables Laid Direct in Air

Standard laying conditions	Other laying conditions
Air temperature 30°C	$I_{standard}$ = Standard current rating in air $I_{rated} = I_{standard} \times k_1 \times k_2 \times k_3 \times k_4$ k_1 = Table 1 k_2 = Table 2 k_3 = Table 3 to Table 4 k_4 = Table 5

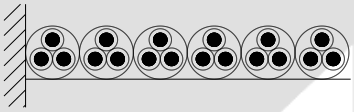
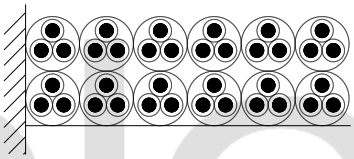
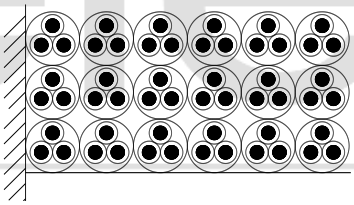
Table 1 – Rating factor for variation in temperature of air (k1)

Insulation Type	Maximum conductor temperature, °C	Air temperature, °C						
		15	20	25	30	35	40	45
PVC D2	70	1.17	1.12	1.07	1.00	0.93	0.86	0.77
XLPE	90	1.13	1.09	1.04	1.00	0.95	0.91	0.86
PVC D5	105	1.12	1.08	1.03	1.00	0.96	0.92	0.88

Table 2 – Rating factors for cables, laid in direct sunlight (k2)

Rating factors for direct solar radiation (cables installed in direct sunlight)	Conductor size, mm²			
	1.5–16	25–95	120–185	240–1000
	0.65	0.55	0.50	0.45

Table 3 – Group Rating factors for twin or multicore cables installed in air on ladder racks or perforated cable trays (k3)

Number of Circuits in Layer	1	2	3	4	5	7	10
1.1.1 Single layer 	0.95	0.84	0.8	0.77	0.76	0.74	0.73
Two layers 				0.71	0.66	0.59	0.53
More than two layers 				0.71	0.64	0.55	0.48

NOTE : No derating needs to be applied when cables are installed in a single layer and spaced one cable diameter appart.

CBI-electric: african cables

B-BBEE Level 2 contributor

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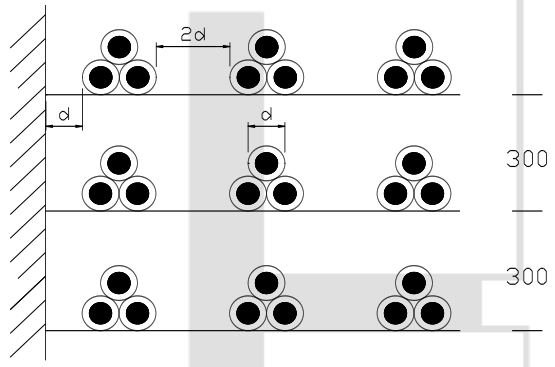
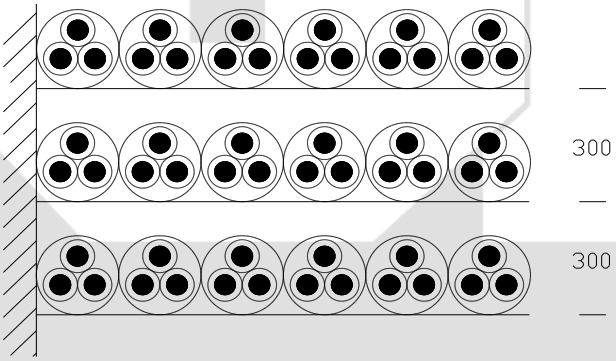
Table 4 – Group rating factor for trefoil groups of three single core cables installed in air on ladder racks or perforated cable tray (k3)



Cable spaced as shown

Number of cable circuits on a tray or rack	Number of Racks or Trays		
	1	2	3
1	1.00	0.98	0.96
2	1.00	0.95	0.93
3	1.00	0.94	0.92
6	1.00	0.93	0.90

Table 5 – Additional rating factor to be applied to the single layer factors of Table 3, when two or more racks or trays are installed one above the other with 300mm vertical spacing (k4)



Cables installed touching

Number of Racks or Trays	Additional rating factor
2	0.95
3	0.93
6	0.90