Medium Voltage XLPE Insulated 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
	$I_{rated} = I_{standard} \times k_1 \times k_2$
	k_1 = Table 1 k_2 = Table 2 to Table 4 k_3 = Table 5

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

Air temperature °C								
10	15	20	25	30	35	40	45	50
1.17	1.13	1.09	1.04	1.00	0.95	0.91	0.86	0.81

Table 2 – Group Rating factors for trefoil grouped cables in horizontal formation, installed direct in air (k2)

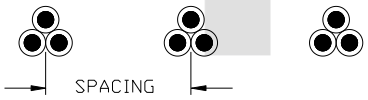
Number of Cable Circuits					
	Touching	150mm	300mm	450mm	600mm
2	0.79	0.81	0.85	0.88	0.90
3	0.67	0.71	0.76	0.80	0.83
4	0.61	0.65	0.72	0.76	0.80
5	0.56	0.61	0.68	0.73	0.77
6	0.53	0.58	0.66	0.72	0.76
7	0.50	0.55	0.63	0.70	0.74
8	0.48	0.53	0.62	0.69	0.74
9	0.46	0.52	0.61	0.68	0.73
10	0.45	0.51	0.60	0.67	0.73

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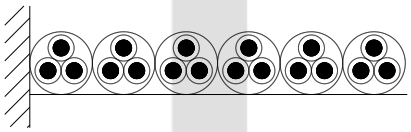
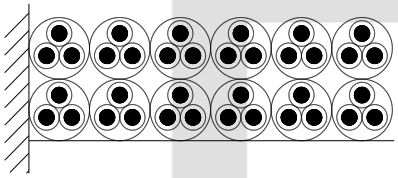
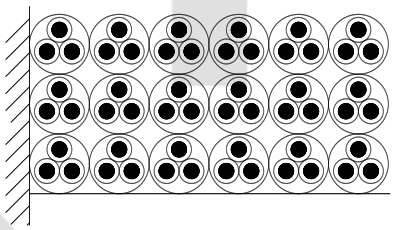
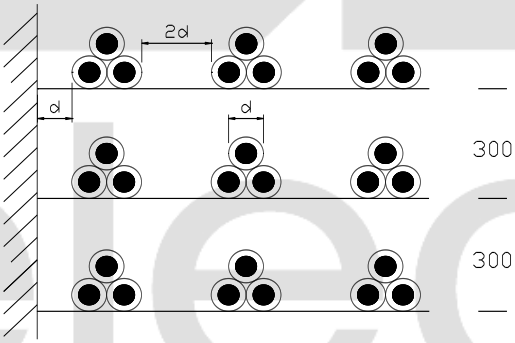
Table 3 – Group Rating factors for 3-core cables installed in air on ladder racks or perforated cable trays (k2)

Number of Cable Circuits in a Layer	1	2	3	4	5	7	10
Single layer 	0.95	0.84	0.80	0.77	0.76	0.74	0.73
Two layers 				0.71	0.66	0.59	0.53
More than two layers 				0.70	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 apart.

Table 4 – Group rating factor for trefoil groups of three single core cables installed in air on ladder racks or perforated cable tray (k2)



Cable spaced as shown

Number of cable circuits on racks or trays	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

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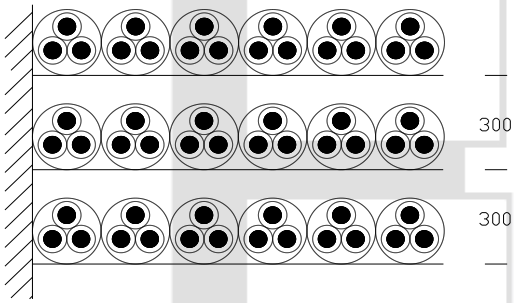
Table 5 – Additional rating factor to be applied to the single layer factors of Table 3, when two or more racks or trays are installed one above the other with a 300mm vertical spacing (k3)

Cable Circuits installed touching	Number of Cable Circuits on Racks or Trays	Number of Racks or Trays				
		1	2	3	6	9
	1	0.95	0.84	0.80	0.75	0.73
	2	0.95	0.80	0.76	0.71	0.69
	3	0.95	0.78	0.74	0.70	0.68
	6	0.95	0.76	0.72	0.68	0.66