Medium Voltage Paper Insulated Cables
Rating Factors for Cables Laid Direct in Ducts

Standard laying conditions		Other laying conditions
Soil thermal resistivity	1.2K.m/W	$I_{standard}$ = Standard current rating in ducts
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

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

Max. Conductor Temperature °C	Soil teperature °C							
	10	15	20	25	30	35	40	45
70	1.15	1.11	1.05	1.00	0.94	0.88	0.82	0.74
80	1.13	1.09	1.04	1.00	0.95	0.90	0.85	0.80

Table 2 – Rating factor for variation in thermal resistivity of soil (k_2)

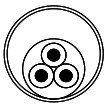
	Conductor size	Soil thermal resistivity K.m/W								
	mm²	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0
3 Core cable 	16-35	1.07	1.06	1.04	1.03	1.00	0.96	0.91	0.86	0.82
	50-120	1.09	1.07	1.05	1.03	1.00	0.96	0.89	0.84	0.80
	150-300	1.11	1.08	1.06	1.04	1.00	0.95	0.89	0.82	0.77
3 Single Core cables 	150-240	1.14	1.11	1.08	1.05	1.00	0.94	0.86	0.79	0.74
	300-500	1.15	1.12	1.09	1.06	1.00	0.93	0.85	0.78	0.72
	630-1000	1.17	1.13	1.09	1.06	1.00	0.93	0.83	0.77	0.71

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

Depth of laying (m)	0.8	1.00	1.25	1.50	1.75	2.00	2.50	≥ 3.00
Single core	1.00	0.98	0.95	0.93	0.92	0.90	0.89	0.88
Three core	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92

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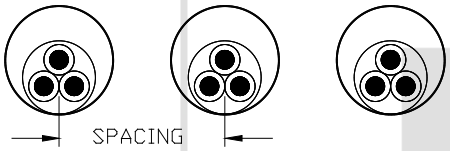
Table 4 – Group Rating factors installed in single way Ducts, horizontal formation (k_4)

Cable Voltage	Number of Cable Circuits							
		Touching	300mm	450mm	600mm	Touching	450mm	600mm
Up to 22000 V	2	0.88	0.91	0.93	0.94	0.85	0.88	0.90
	3	0.80	0.84	0.87	0.89	0.75	0.80	0.83
	4	0.75	0.81	0.84	0.87	0.70	0.76	0.80
	5	0.71	0.77	0.82	0.85	0.67	0.73	0.77
	6	0.69	0.75	0.80	0.84	0.64	0.71	0.76
33000 V	2	0.87	0.89	0.92	0.93	0.85	0.88	0.90
	3	0.78	0.82	0.85	0.87	0.76	0.80	0.83
	4	0.73	0.78	0.82	0.85	0.71	0.76	0.80
	5	0.69	0.75	0.79	0.83	0.67	0.73	0.77
	6	0.67	0.73	0.78	0.82	0.65	0.71	0.76