$$I = \left[\frac{\Delta\theta - W_d \left[0{,}5\ T_1 + n\ (T_2 + T_3 + T_4)\right]}{RT_1 + nR\ (1+\lambda_1)\ T_2 + nR\ (1+\lambda_1+\lambda_2)\ (T_3 + T_4)} \right]^{0{,}5}$$

1.4.1.1 from IEC 287-1-1

Wd is negligible and ignored as per Table 3 of IEC 287-1-1
λ2 is zero since cable is unarmoured
T2 is zero since cable is unarmoured
n is considered number of active conductors in ductbank (i.e. 1 cable is active n = 3, 8 cables are active n = 24)
T1, T3, and T4 are calculated in K.m/W as per IEC 287-2-1
R is Rac90 in ohm/m as per Saudi Cables Catalouge
Δϴ is the conductor temperature rise above the ambient temperature in °K (ambient temperature of medium in duct or earth?)
λ1 is not calculated and compensated by 15% decrease in calculated ampacity output considering cable bonded at both ends (ask stefan)

2.1.1.1 from IEC 287-2-1

$$T_1 = \frac{\rho_T}{2\pi} \ln\left[1 + \frac{2\ t_1}{d_c}\right]$$

c.s.a.	dc	Rot	t1	T1
70	9,90	3,5	4,5	0,360
95	11,80	3,5	4,5	0,316
120	13,30	3,5	4,5	0,288
150	14,70	3,5	4,5	0,266
185	16,40	3,5	4,5	0,244
300	20,80	3,5	4,5	0,200

2.1.3 from IEC 287-1-1

$$T_3 = \frac{1}{2\pi}\ \rho_T \ln\left(1 + \frac{2\ t_3}{D'_a}\right)$$

c.s.a.	D'a	Rot	t3	T3
70	23,40	6	1,8	0,137
95	24,40	6	1,8	0,131
120	26,20	6	1,9	0,129
150	28,20	6	1,9	0,121
185	30,00	6	2	0,120
300	34,80	6	2,1	0,109

2.2.7.1 from IEC 287-2-1

$$T'_4 = \frac{U}{1 + 0{,}1\,(V + Y\theta_m)\,D_e}$$

c.s.a.	De	T'4
70	58	0,481
95	60	0,468
120	65	0,444
150	69	0,423
185	73	0,403
300	84	0,361

2.2.7.2 from IEC 287-2-1

$$T''_4 = \frac{1}{2\pi}\ \rho_T \ln\left(\frac{D_o}{D_d}\right)$$

T"4	0,062

T'"4 = Te + Tc

2.2.7.3 from IEC 287-2-1
algerbic correction for T'"4 for cables in ducts
N: number of loaded cables!

$$\frac{N}{2\pi}(\rho_e - \rho_c) \ln\left(u + \sqrt{u^2 - 1}\right)$$

u	3,215

N	Te	N	Te
1	0,292	3	0,877
2	0,584	6	1,753
3	0,877	9	2,630
4	1,169	12	3,506
5	1,461	15	4,383
6	1,753	18	5,259
7	2,045	21	6,136
8	2,337	24	7,012

2.2.7.3 External thermal resistance of the duct (or pipe) T'''_4

This shall be determined for single-way duct(s) not embedded in concrete in the same way as for cable, using the appropriate formulae from 2.2.1, 2.2.2, 2.2.3 or 2.2.4, and the external radius of the duct or pipe including any protective covering thereon, replacing the external radius of the cable. When the ducts are embedded in concrete, the calculation of the thermal resistance outside the ducts is first of all made assuming a uniform medium outside the ducts having a thermal resistivity equal to the concrete. A correction is then added algebraically to take account of the difference, if any, between the thermal resistivities of concrete and soil for that part of the thermal circuit exterior to the duct bank.

$$T_4 = \frac{1}{2\pi}\rho_T \ln\left\{\left(u + \sqrt{u^2 - 1}\right)\left[\left(\frac{d'_{p1}}{d_{p1}}\right)\left(\frac{d'_{p2}}{d_{p2}}\right) \cdots \left(\frac{d'_{pk}}{d_{pk}}\right) \cdots \left(\frac{d'_{pq}}{d_{pq}}\right)\right]\right\}$$

2.2.3.2 from IEC 287-2-1
Tc for multiple cables in duct not touching

u	18,750

No. of cables	Tc
1	0,577
2	1,029
3	1,481
4	1,868
5	2,255
6	2,560
7	2,881
8	3,186

Note. Cable is 3x1 single-core conductor