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Product Catalogue

General Wiring



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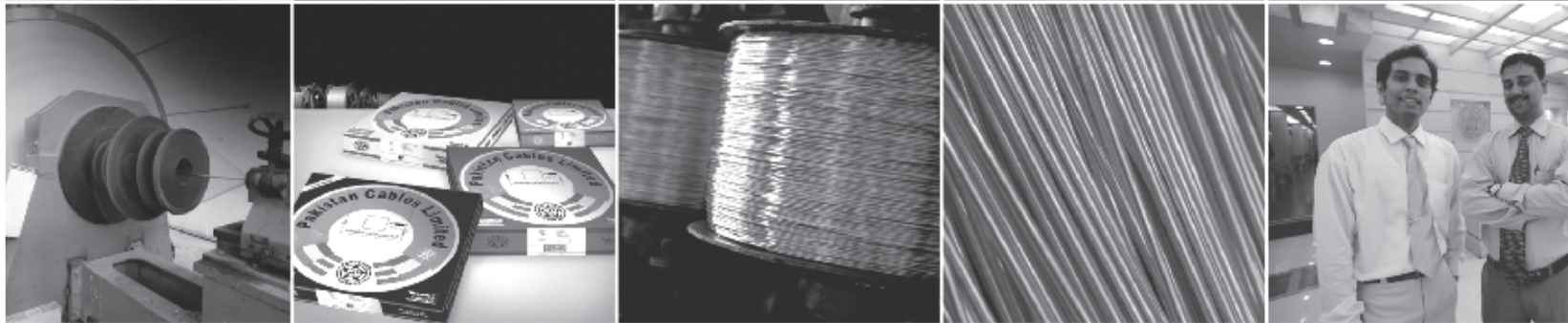
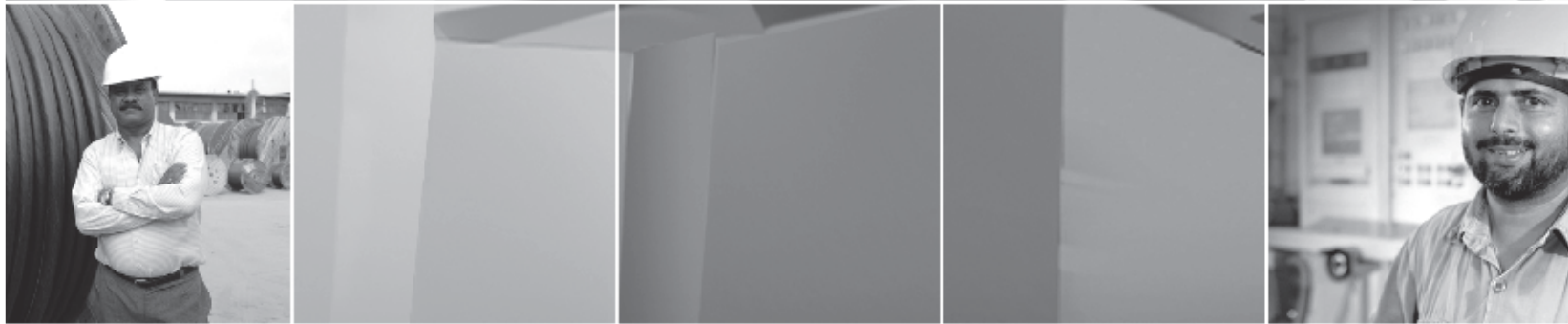
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Specification and Construction

Specifications:

General Wiring Cables are manufactured to BS 6004 “PVC insulated, non-armoured cables for voltage up to and including 450/750 V, for electric power, lighting and internal wiring” and BS 6500 “Insulated Flexible Cords & Cables”.

Conductor:

The conductors in our General Wiring Cables are of high conductivity copper to meet the requirements of BS EN 60228 “Conductors of Insulated Cables”. Conductors are either solid, circular, compacted or flexible as mentioned in relevant tables.

Insulation:

All cables are insulated with PVC compounds conforming to BS 7655/BSEN 50363 suitable for a maximum operating temperature of 70°C.

Core Identification:

a) Cables with rigid conductors:

Number of cores	Colours
Single	Red, Black or Green/Yellow
Two	Red & Black
Three	Red, Yellow & Blue
Four	Red, Yellow, Blue & Black

Black denotes the neutral, other colours for phase conductors in two, three or four core cables. Green/Yellow for earthing conductors.

Following colour identification is also offered provided the quantities are economical.

Number of cores	Colours
Single	Blue, Brown or Green/Yellow
Two	Blue, Brown
Three	Brown, Black, Grey
Four	Brown, Black, Grey, Blue

Blue denotes the neutral and other colours for phase conductors in two, three and four core cables. Green/Yellow for earthing conductors.

b) For cables with Flexible Conductors:

Number of cores	Colours
Two	Blue & Brown
Three	Blue, Brown & Green
Four	Blue, Brown, Green & Black

Inner Covering:

Inner covering of soft PVC compound is provided in case of multi-core cables to BS 6004 in order to provide circularity and prevent insulation from adhering to PVC sheath.

Outer Covering:

The standard form of protection for cables is an extruded PVC over sheath to BS 7655.



Conductor Data

Conductors for Single-core and Multi-core cables

Table 1

Nominal cross-sectional area mm ²	Minimum number of wires in the conductor		Maximum resistance of conductor at 20° C
	Circular Conductor Cu	Circular Compacted Conductor Cu	Plain Annealed Copper Conductor Ω/km
1.0	1	-	18.1
1.5	7	6	12.1
2.5	7	6	7.41
4	7	6	4.61
6	7	6	3.08
10	7	6	1.83
16	7	6	1.15
25	7	6	0.727
35	7	6	0.524
50	19	6	0.387
70	19	12	0.268

Class 5 Flexible copper conductors for Single-core and Multi-core cables

Table 2

Nominal cross-sectional area mm ²	Maximum diameter of wires in conductor mm	Maximum resistance of conductor at 20° C
		Plain wires Ω/km
0.75	0.21	26.0
1.5	0.26	13.3
2.5	0.26	7.98
4	0.31	4.95

Dimensions & Weights



PVC Insulated Cables 450/750 Volts to BS 6004

Table 3
Single Core

Nominal Cross-section area of ^ conductor	Minimum number of wires in conductor	Radial thickness of insulation	Mean overall diameter		Approximate Weight of Cable
			Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	kg/100m
* 1.5	6	0.7	2.70	3.30	2.0
* 2.5	6	0.8	3.30	4.00	3.5
* 4	6	0.8	3.80	4.60	5.0
6	6	0.8	4.30	5.20	7.0
10	6	1.0	5.60	6.70	12.0
16	6	1.0	6.40	7.80	17.0
25	6	1.2	8.10	9.70	26.0
35	6	1.2	9.00	10.90	35.5
50	6	1.4	10.60	12.80	48.0
70	12	1.4	12.10	14.60	67.0

* Can also be supplied, if desired with single solid conductor

^ Circular/Circular compacted conductor



Circular PVC Insulated PVC Sheathed 300/500 Volts to BS 6004

Table 4
Single Core

Nominal Cross-section area of conductor	Minimum number of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	mm	kg/100m
* 1.0	1	0.6	0.80	3.80	4.50	2.5
# ^ 1.5	6	0.7	0.80	4.55	4.90	3.0
# ^ 2.5	6	0.8	0.80	5.30	5.80	5.0
^ 4.0	6	0.8	0.90	5.40	6.80	7.5
^ 6.0	6	0.8	0.90	6.00	7.40	10.0
^ 10.0	6	1.0	0.90	7.20	8.80	15.0

* Solid Conductors

These sizes are also offered with solid conductors

^ Circular/Circular Conductors

Dimensions & Weights



Circular PVC Insulated PVC Sheathed 300/500 Volts to BS 6004

Table 5
Two Core

Nominal Cross-section area of conductor	Minimum number of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	mm	kg/100m
* 1.0	1	0.6	0.80	6.40	8.00	9.0
# ^ 1.5	6	0.7	1.20	8.40	10.50	12.0
# ^ 2.5	6	0.8	1.20	9.60	12.00	17.0
^ 4.0	6	0.8	1.20	10.50	13.00	22.0
^ 6.0	6	0.8	1.20	11.50	14.00	29.0
^ 10.0	6	1.0	1.40	15.00	17.50	43.0

* Solid Conductors

These sizes are also offered with solid conductors

^ Circular/Circular Compacted Conductors



Circular PVC Insulated PVC Sheathed 300/500 Volts to BS 6004

Table 6
Three Core

Nominal Cross-section area of conductor	Minimum number of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	mm	kg/100m
* 1.0	1	0.6	1.20	6.30	8.40	11.0
# ^ 1.5	6	0.7	1.20	8.80	11.00	15.0
# ^ 2.5	6	0.8	1.20	10.00	12.50	21.0
^ 4.0	6	0.8	1.20	11.00	13.50	28.0
^ 6.0	6	0.8	1.40	12.50	15.50	38.0
^ 10.0	6	1.0	1.40	15.50	19.00	58.0

* Solid Conductors

These sizes are also offered with solid conductors

^ Circular/Circular Compacted Conductors

Dimensions & Weights



Circular PVC Insulated PVC Sheathed 300/500 Volts to BS 6004

Table 7
Four Core

Nominal Cross-section area of conductor	Minimum number of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	mm	kg/100m
* 1.0	1	0.6	0.9	7.70	9.40	13.5
# ^ 1.5	6	0.7	1.2	9.60	12.00	18.0
# ^ 2.5	6	0.8	1.2	11.00	13.50	25.5
^ 4.0	6	0.8	1.4	12.50	15.00	36.0
^ 6.0	6	0.8	1.4	14.00	17.00	48.0
^ 10.0	6	1.0	1.4	17.00	20.50	73.0

* Solid Conductors

These sizes are also offered with solid conductors

^ Circular/Circular Compacted Conductors



PVC Insulated PVC Sheathed (Flat) 300/500 Volts to BS 6004

Table 8
Two Core

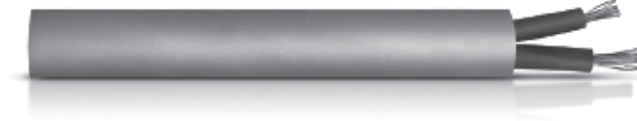
Nominal Cross-section area of conductor	Minimum number of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall dimensions		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	No.	mm	mm	mm	mm	kg/100m
* 1.0	1	0.6	0.90	4.0 x 6.2	4.7 x 7.4	5.5
# ^ 1.5	6	0.7	0.90	4.9 x 8.0	5.4 x 8.4	7.0
# ^ 2.5	6	0.8	1.00	5.6 x 9.2	6.2 x 9.8	11.0
^ 4.0	6	0.8	1.00	5.6 x 9.6	7.2 x 11.5	15.5
^ 6.0	6	0.8	1.10	6.4 x 10.5	8.0 x 13.0	20.0
^ 10.0	6	1.0	1.20	7.8 x 13.0	9.6 x 16.0	32.0

* Solid Conductors

These sizes are also offered with solid conductors

^ Circular/Circular Compacted Conductors

Dimensions & Weights



PVC Insulated PVC Sheathed (Flexible) 300/500 Volts to BS 6500

Table 9
Two Core

Nominal Cross-section area of conductor	Maximum diameter of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	kg/100m
0.75	0.21	0.6	0.80	6.00	7.60	6.0
1.5	0.26	0.7	0.80	7.40	9.00	10.0
2.5	0.26	0.8	1.00	8.90	11.00	12.5
4.0	0.31	0.8	1.10	10.10	12.00	18.0



PVC Insulated PVC Sheathed (Flexible) 300/500 Volts to BS 6500

Table 10
Three Core

Nominal Cross-section area of conductor	Maximum diameter of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	kg/100m
0.75	0.21	0.6	0.80	6.40	8.00	7.0
1.5	0.26	0.7	0.90	8.00	9.80	12.0
2.5	0.26	0.8	1.10	9.60	12.00	16.5
4.0	0.31	0.8	1.20	11.00	13.00	21.0

Dimensions & Weights



PVC Insulated PVC Sheathed (Flexible) 300/500 Volts to BS 6500

Table 11
Four Core

Nominal Cross-section area of conductor	Maximum diameter of wires in conductor	Radial thickness of insulation	Radial thickness of Sheath	Mean overall diameter		Approximate Weight of Cable
				Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	kg/100m
0.75	0.21	0.6	0.80	6.80	8.60	9.5
1.5	0.26	0.7	1.00	9.00	11.00	15.5
2.5	0.26	0.8	1.10	10.50	13.00	22.0
4.0	0.31	0.8	1.20	12.00	14.00	32.0

Current Rating, Voltage Drop, Short Circuit Rating:

- Current Carrying Capacity and Voltage Drop of Cables mentioned in this catalogue are taken from BS 7671, 17th Edition of IEE Wiring Regulations. The correction factors for temperature and groupings are also taken from IEE Wiring Regulations (BS 7671). Appendix 4 of BS 7671 may be referred to for details on methods of Installation and Overload Protection.
- Short Circuit Ratings of Copper Conductor can be calculated using the following formula:

$$ISC = 115 \times S/\sqrt{t} \text{ Amperes}$$

$$S = \text{Cross section Area of conductor (mm}^2\text{)}$$

$$t = \text{Duration of short circuit (seconds)}$$

Bending Radius:

The radius of every bend shall be such that conductor or cable do not suffer damage and terminals not stressed. The internal radius at bend for cables mentioned in this catalogue should exceed 4 x Diameter of Cable. However, it is recommended that wherever possible, higher bending radius is adopted.



Table 12

TABLE 4D1A — Single-core 70°C PVC Insulated cables, non-armoured with or without sheath (COPPER CONDUCTORS)

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature: 30°C
Conductor operating temperature: 70°C

Conductor cross-sectional area	Reference Method B (enclosed in conduit on a wall or in trunking etc.)		Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray horizontal or vertical)				
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, three-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, three-phase a.c. flat and touching or trefoil	Touching			Spaced By one diameter	
					2 cables, single-phase a.c. or d.c. flat	3 cables, three-phase a.c. flat	3 cables, three-phase a.c. trefoil	2 Cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat	
1	2	3	4	5	6	7	8	Horizontal	Vertical
(mm ²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	13.5	12	15.5	14	-	-	-	-	-
1.5	17.5	15.5	20	18	-	-	-	-	-
2.5	24	21	27	25	-	-	-	-	-
4	32	28	37	33	-	-	-	-	-
6	41	36	47	43	-	-	-	-	-
10	57	50	65	59	-	-	-	-	-
16	76	68	87	79	-	-	-	-	-
25	101	89	114	104	131	114	110	146	130
35	125	110	141	129	162	143	137	181	162
50	151	134	182	167	196	174	167	219	197
70	192	171	234	214	251	225	216	281	254

Table 13

TABLE 4D1B — Single-core 70°C PVC Insulated cables, non-armoured with or without sheath (COPPER CONDUCTORS)

VOLTAGE DROP (per ampere per metre):

Conductor operating temperature: 70°C

Conductor cross-sectional area 1	2 Cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, three-phase a.c.																	
		Reference Method B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)			Reference Method B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air),														
		3			4			5			6			7			8			9					
(mm ²)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)					
1	44	44			44			44			38			38			38			38					
1.5	29	29			29			29			25			25			25			25					
2.5	18	18			18			18			15			15			15			15					
4	11	11			11			11			9.5			9.5			9.5			9.5					
6	7.3	7.3			7.3			7.3			6.4			6.4			6.4			6.4					
10	4.4	4.4			4.4			4.4			3.8			3.8			3.8			3.8					
16	2.8	2.8			2.8			2.8			2.4			2.4			2.4			2.4					
25	1.75	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
35	1.25	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.175	1.50	1.50	0.25	1.55	1.50	0.32	1.55	1.50	0.32	1.15
50	0.93	1.30	0.31	1.30	1.25	0.195	1.25	1.25	0.28	1.30	1.10	0.27	1.10	1.10	0.170	1.10	1.10	0.24	1.10	1.10	0.32	1.15	1.10	0.32	0.86
70	0.63	0.95	0.30	1.00	0.93	0.190	0.95	0.93	0.28	0.97	0.81	0.26	0.85	0.80	0.165	0.82	0.80	0.24	0.84	0.80	0.32	0.86	0.80	0.32	0.63
		0.65	0.29	0.72	0.63	0.185	0.66	0.63	0.27	0.69	0.56	0.25	0.61	0.55	0.160	0.57	0.55	0.24	0.60	0.55	0.31	0.63	0.55	0.31	0.63

Note: *Spacing larger than one cable diameter will result in a larger voltage drop.



Table 14

TABLE 4D2A — Multi-core 70°C PVC Insulated and PVC Sheathed cables, Non-armoured (COPPER CONDUCTORS)

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature: 30°C
Conductor operating temperature: 70°C

Conductor cross-sectional area	Reference Method B (enclosed in conduit on a wall or in trunking etc.)		Reference Method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc. horizontal or vertical)	
	1 two-core cable,* sing-phase a.c. or d.c.	1 three-core cable,* or 1 four-core cable, three-phase a.c.	1 two-core cable,* sing-phase a.c. or d.c.	1 three-core cable,* or 1 four- core cable, three- phase a.c.	1 two-core cable,* sing-phase a.c. or d.c.	1 three-core cable,* or 1 four- core cable, three- phase a.c.
1	2	3	4	5	6	7
(mm ²)	(A)	(A)	(A)	(A)	(A)	(A)
1	13	11.5	15	13.5	17	14.5
1.5	16.5	15	19.5	17.5	22	18.5
2.5	23	20	27	24	30	25
4	30	27	36	32	40	34
6	38	34	46	41	51	43
10	52	46	63	57	70	60

Table 15

TABLE 4D2B - Multicore 70°C PVC insulated and PVC sheathed cables, Non-armoured (COPPER CONDUCTORS)

VOLTAGE DROP (per ampere per metre):

Conductor operating temperature: 70°C

Conductor cross-sectional area	Two-core cable, d.c.	Two-core cable, single-phase a.c.	Three or four-core cable, three-phase a.c.
1	2	3	4
(mm ²)	(mV/A/m)	(mV/A/m)	(mV/A/m)
1	44	44	38
1.5	29	29	25
2.5	18	18	15
4	11	11	9.5
6	7.3	7.3	6.4
10	4.4	4.4	3.8

Table 16

TABLE 4F3A — Flexible cords, non-armoured PVC Insulated and PVC Sheathed cables, (COPPER CONDUCTOR)

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature: 30°C
Conductor operating temperature: 60°C

Conductor cross-sectional area 1 [mm ²]	Current-carrying capacity	
	Single-phase a.c. 2 [A]	Three-phase a.c. 3 [A]
0.75	6	6
1.5	16	16
2.5	25	20
4	32	25

Rating Factor for Ambient Temperature

Ambient Temperature°C	Rating Factor
35	0.91
40	0.82
45	0.71
50	0.58
55	0.41

Table 17

TABLE 4F3B - Flexible cords, non-armoured PVC insulated and PVC sheathed cables, (COPPER CONDUCTOR).

VOLTAGE DROP (per ampere per metre):

Conductor operating temperature: 60°C

Conductor cross-sectional area 1 [mm ²]	d.c. or single-phase a.c. 2 [mV/A/m]	Three-phase a.c. 3 [mV/A/m]
	0.75	62
1.5	32	27
2.5	19	16
4	12	10



CORRECTION FACTORS:

Table 18

TABLE 4B1 — Rating factors for ambient air temperature other than 30°C to be applied to the current carrying-capacities for cables in free air

Ambient Temperature°C	Rating Factor
25	1.03
30	1.00
35	0.94
40	0.87
45	0.79
50	0.71
55	0.61

Table 19

TABLE 4C1 — Rating factors for one circuit or one Multi-core cable or for a group of circuits, or a group of Multi-core cables, to be used with current - carrying capacities.

Arrangement (cables touching)	Number of circuits or multicore cables												To be used with current-carrying capacities, Reference
	1	2	3	4	5	6	7	8	9	12	16	20	
Bunched in air, on a surface, embedded or enclosed	1.00	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.45	0.41	0.38	Methods A to F
Single layer on wall or floor	1.00	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.70	0.70	Method C
Single layer multicore on a perforated horizontal or vertical cable tray system	1.00	0.88	0.82	0.77	0.75	0.73	0.73	0.72	0.72	0.72	0.72	0.72	Methods E and F
Single layer multicore on cable ladder system or cleats etc.	1.00	0.87	0.82	0.80	0.80	0.79	0.79	0.78	0.78	0.78	0.78	0.78	

Note 1: These factors are applicable to uniform groups of cables, equally loaded.

Note 2: Where horizontal clearances between adjacent cables exceed twice their overall diameter, no rating factor needs to be applied.

Note 3: The same factors are applied to:

- Groups of two or three single-core cables;
- Multicore cables

Note 4: If a system consists of both two and three-core cables, the total number of cables is taken as the number of circuits, and the corresponding factor is applied to the tables for two loaded conductors for the two-core cables and to the tables for three loaded conductors for the three-core cables.

Note 5: If a group consists of n single-core cables, it may either be considered as n/2 circuits of two loaded conductors or n/3 circuits of three loaded conductors.

Note 6: The rating factors given have been averaged over the range of conductor sizes and types of installation included in tables mention. This catalogue overall accuracy of tabulated values is within 5%.

Note 7: For some installations and for other methods not provided for in the above table, it may be appropriate to use factors calculated for specific cases, see for example tables 4C4 and 4C5.

Note 8: When cables having different conductor operating temperature are grouped together, the current rating is to be based upon the lowest operating temperature of any cable in the group.

Note 9: If due to known operating conditions, a cable is expected to carry not more than 30% of its grouped rating, it may be ignored for the purpose of obtaining the rating factor for the rest of the group.

Table 4C4 — Rating factors for groups of more than one Multi-core cable, to be applied to reference current-carrying capacities for Multi-core cables in free air — Reference Method E

Installation Method in Table 4A2		Number of trays or ladders	Number of cables per tray or ladder						
			1	2	3	4	6	9	
Perforated cable tray systems (Note 3)	31		1	See item 4 of Table 4C1					
			2	1.00	0.87	0.80	0.77	0.73	0.68
			3	1.00	0.86	0.79	0.76	0.71	0.66
			6	1.00	0.84	0.77	0.73	0.68	0.64
			1	1.00	1.00	0.98	0.95	0.91	-
			2	1.00	0.99	0.96	0.92	0.87	-
3	1.00		0.98	0.95	0.91	0.85	-		
Vertical perforated cable tray systems (Note 4)	31		1	See item 4 of Table 4C1					
			2	1.00	0.88	0.81	0.76	0.71	0.70
			1	1.00	0.91	0.89	0.88	0.87	-
			2	1.00	0.91	0.88	0.87	0.85	-
			3	1.00	0.91	0.88	0.87	0.85	-
			6	1.00	0.91	0.88	0.87	0.85	-
Unperforated cable tray systems	30		1	0.97	0.84	0.78	0.75	0.71	0.68
			2	0.97	0.83	0.76	0.72	0.68	0.63
			3	0.97	0.82	0.75	0.71	0.66	0.61
			6	0.97	0.81	0.73	0.69	0.63	0.58
			1	1.00	1.00	1.00	1.00	1.00	-
			2	1.00	0.99	0.98	0.97	0.96	-
Cable ladder systems, cleats, wire mesh tray, etc. (Note 3)	32, 33, 34		1	See item 4 of Table 4C1					
			2	1.00	0.86	0.80	0.78	0.76	0.73
			3	1.00	0.85	0.79	0.76	0.73	0.70
			6	1.00	0.84	0.77	0.73	0.68	0.64
			1	1.00	1.00	1.00	1.00	1.00	-
			2	1.00	0.99	0.98	0.97	0.96	-
3	1.00	0.98	0.97	0.96	0.93	-			

Note 1: Values given are averages for the cable types and range of conductor sizes. The spread of values is generally less than 5%.

Note 2: Factors apply to single layer groups of cables as shown above and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.

Note 3: Values are given for vertical spacing between cable trays of 300 mm and at least 20 mm between cable trays and wall. For closer spacing the factors should be reduced.

Note 4: Values are given for horizontal spacing between cable trays of 225 mm with cable trays mounted back to back. For closer spacing the factors should be reduced.

Table 21

Table 4C5 — Rating factors for groups of one or more circuits of Single-core cables to be applied to reference current-carrying capacity for one circuit of Single-core in free air — Reference Method F

Installation Method in Table 4A2		Number of trays or ladders	Number of three-phase circuits per tray or ladder			Use as a multiplier or rating for	
			1	2	3		
Perforated cable tray systems (Note 3)	31		1	0.98	0.91	0.87	Three cables in horizontal formation
			2	0.96	0.87	0.81	
			3	0.95	0.85	0.78	
Vertical perforated cable tray systems (Note 4)	31		1	0.96	0.86	-	Three cables in vertical formation
			2	0.95	0.84	-	
Cable ladder systems, cleats, wire mesh tray, etc. (Note 3)	32 33 34		1	1.00	0.97	0.96	Three cables in horizontal formation
			2	0.98	0.93	0.89	
			3	0.97	0.90	0.86	
Perforated cable tray systems (Note 3)	31		1	1.00	0.98	0.96	Three cables in trefoil formation
			2	0.97	0.93	0.89	
			3	0.96	0.92	0.86	
Vertical perforated cable tray systems (Note 4)	31		1	1.00	0.91	0.89	Three cables in trefoil formation
			2	1.00	0.90	0.86	
Cable ladder systems, cleats, wire mesh tray, etc. (Note 3)	32 33 34		1	1.00	1.00	1.00	Three cables in trefoil formation
			2	0.97	0.95	0.93	
			3	0.96	0.94	0.90	

Note 1: Values given are averages for the cable types and range of conductor sizes. The spread of values is generally less than 5%.

Note 2: Factors apply to single layer groups of cables (or trefoil groups) as shown above and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.

Note 3: Values are given for vertical spacing between cable trays of 300 mm and at least 20 mm between cable trays and wall. For closer spacing the factors should be reduced.

Note 4: Values are given for horizontal spacing between cable trays of 225 mm with cable trays mounted back to back. For closer spacing the factors should be reduced.

Note 5: For circuits having more than one cable in parallel per phase, each three-phase set of conductors is to be considered as a circuit for the purpose of this table.