

**TECHNICAL SPECIFICATION
BOOKLET**

BS.2004

**Specification for PVC
Insulated Cable – 250/440 V, 660/1100 V**

BS.6004

**Specification for PVC Insulated
Non-armoured Cable – 300/500 V, 450/750 V**

BS.6346

**Specification for PVC Insulated
Armoured & Non-armoured Cable – 600/1000 V**

TECH[®]
CABLES

SINCE 1999

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SINGLE CORE UN-ARMoured CABLES – IMPERIAL SIZES

(CU/PVC)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
Insulation : PVC Compound
Colours of Cores : Red, Yellow, Blue, Black, White And Green or Others
Specification : BS 2004 250/440 V

Table # 1

Nominal Area of Conductor	Number and Diameter of Wires	Radial Thickness of Insulation	Overall Diameter
in ²	in	in	in
0.0015	1/.044	0.035	0.110
0.0020	3/.029	0.035	0.137
0.0030	3/.036	0.035	0.153
0.0045	7/.029	0.035	0.162
0.0070	7/.036	0.040	0.193
0.0100	7/.044	0.040	0.217
0.0145	7/.052	0.040	0.241
0.0225	7/.064	0.040	0.277
0.0300	19/.044	0.045	0.315
Specification	: BS 2004		660/1100 V
0.0400	19/.052	0.050	0.365
0.0400	19/.064	0.050	0.425
0.1000	19/.083	0.055	0.535
0.1500	37/.072	0.060	0.634
0.2000	37/.083	0.065	0.721
0.3000	37/.103	0.075	0.881
0.4000	61/.093	0.085	1.017
0.5000	61/.103	0.095	1.127
0.750	91/.103	0.105	1.353

SINGLE CORE UN-ARMoured CABLES – METRIC SIZES

(CU/PVC)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
Insulation : PVC Compound
Colours of Cores : Red, Yellow, Blue, Black, White And Green or Others
Specification : BS. 6004 450/750 V

Table # 2

Conductor Area	Class of Conductor	Thickness of Insulation	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	Kg/Km
1.5	1	0.7	0.9	21
1.5	2	0.7	3.0	23
2.5	1	0.8	3.5	33
2.5	2	0.8	3.6	35
4	2	0.8	4.2	51
6	2	0.8	4.7	72
10	2	1.0	6.1	120
16	2	1.0	6.8	175
25	2	1.2	8.4	280
35	2	1.2	9.6	370
50	2	1.4	11.2	500
70	2	1.4	12.9	710
95	2	1.6	15.0	980
120	2	1.6	16.6	1220
150	2	1.8	18.4	1490
185	2	2.0	20.6	1870
240	2	2.2	23.4	2450
300	2	2.4	26.1	3070
400	2	2.6	29.3	3920
500	2	2.8	32.7	4940
630	2	2.8	36.4	6280

SINGLE CORE & MULTI-CORE UN-ARMoured CABLES –

(CU/PVC/PVC)

CONSTRUCTION

Conductor : Plain Annealed Copper

Insulation : PVC Compound

Colours of Cores : 2 Core - Red And black

: 3 Core - Red, Yellow and Blue

: 4 Core - Red, Yellow, Blue and Black

Sheath : PVC Compound (Black)

Specification: : **BS. 6004**

300/500 V

Table # 3

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
1.5	1	0.7	0.8	4.4	35
1.5	2	0.7	0.8	4.6	38
2.5	1	0.8	0.8	5.0	50
2.5	2	0.8	0.8	5.2	53
4	2	0.8	0.9	6.0	74
6	2	0.8	0.9	6.5	97
10	2	1.0	0.9	7.9	150
16	2	1.0	1.0	8.8	220
25	2	1.2	1.1	10.6	330
35	2	1.2	1.1	11.8	430

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SINGLE CORE UN-ARMoured CABLES (CONTINUED...)
(CU/PVC/PVC)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
- Insulation** : PVC Compound
- Colours of Cores** : 2 Core - Red And black
: 3 Core - Red, Yellow and Blue
: 4 Core - Red, Yellow, Blue and Black
- Sheath** : PVC Compound (Black)
- Specification** : BS. 6346 0.6/1 (1.2) KV

Table # 3

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
50	2	1.4	1.4	14.0	590
70	2	1.4	1.4	15.7	810
95	2	1.6	1.5	18.0	1100
120	2	1.6	1.5	19.6	1360
150	2	1.8	1.6	21.6	1650
185	2	2.0	1.7	24.0	2060
240	2	2.2	1.8	27.0	2670
300	2	2.4	1.9	29.9	3330
400	2	2.6	2.0	33.3	4220
500	2	2.8	2.1	36.9	5290
630	2	2.8	2.2	40.8	6690
800	2	2.8	2.3	47.3	8560
1000	2	3.0	3.5	52.6	10730

TWO CORE UN-ARMoured CABLES (CU/PVC/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	2 Core - Red And black
	:	3 Core - Red, Yellow and Blue
	:	4 Core - Red, Yellow, Blue and Black
Sheath	:	PVC Compound (Black)
Specification	:	BS. 6004 300/500 V

Table # 4

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
1.5	2	0.7	1.2	8.9	110
2.5	2	0.8	1.2	9.7	140
4	2	0.8	1.2	11.2	200
6	2	0.8	1.2	12.3	260

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TWO CORE UN-ARMoured CABLES (CONTINUED...)
(CU/PVC/PVC)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
Insulation : PVC Compound
Colours of Cores : 2 Core - Red And black
: 3 Core - Red, Yellow and Blue
: 4 Core - Red, Yellow, Blue and Black
Sheath : PVC Compound (Black)
Specification : **BS. 6346 0.6/1 (1.2) KV**

Table # 4

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
10	2	1.0	1.8	15.8	400
16	2	1.0	1.8	17.3	540
25	2	1.2	1.8	20.6	800
35	2	1.2	1.8	22.9	1040
50	2	1.4	1.8	22.5	1210
70	2	1.4	1.9	25.3	1660
95	2	1.6	2.0	29.0	2260
120	2	1.6	2.1	31.5	2790
150	2	1.8	2.2	34.7	3500
185	2	2.0	2.4	38.6	4240
240	2	2.2	2.5	43.3	5490
300	2	2.4	2.7	47.9	6850
400	2	2.6	2.9	53.4	8730

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

THREE CORE UN-ARMoured CABLES (CU/PVC/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	2 Core - Red And black
	:	3 Core - Red, Yellow and Blue
	:	4 Core - Red, Yellow, Blue and Black
Sheath	:	PVC Compound (Black)
Specification	:	BS. 6004 300/500 V

Table # 5

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
1.5	2	0.7	1.2	9.4	130
2.5	2	0.8	1.2	10.7	180
4	2	0.8	1.2	11.9	240
6	2	0.8	1.4	13.5	330

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THREE CORE UN-ARMoured CABLES (CONTINUED...)
(CU/PVC/PVC)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
Insulation : PVC Compound
Colours of Cores : 2 Core - Red And black
: 3 Core - Red, Yellow and Blue
: 4 Core - Red, Yellow, Blue and Black
Sheath : PVC Compound (Black)
Specification : **BS. 6346 0.6/1 (1.2) KV**

Table # 5

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
10	2	1.0	1.8	16.7	530
16	2	1.0	1.8	18.3	720
25	2	1.2	1.8	21.9	1080
35	2	1.2	1.8	24.4	1410
50	2	1.4	1.8	25.8	1790
70	2	1.4	1.9	29.2	2470
95	2	1.6	2.1	33.8	3380
120	2	1.6	2.2	36.8	4180
150	2	1.8	2.3	40.5	5250
185	2	2.0	2.5	45.5	6360
240	2	2.2	2.6	50.7	8240
300	2	2.4	2.8	56.2	10280
400	2	2.6	3.1	62.9	13120

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*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

FOURS CORE UN-ARMoured CABLES (CU/PVC/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours Of Cores	:	2 Core - Red And black
	:	3 Core - Red, Yellow and Blue
	:	4 Core - Red, Yellow, Blue and Black
Sheath	:	PVC Compound (Black)

Specification : BS. 6004 300/500 V

Table # 6

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
1.5	2	0.7	1.2	10.2	160
2.5	2	0.8	1.2	11.7	220
4	2	0.8	1.4	13.4	310
6	2	0.8	1.4	14.7	410

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FOURS CORE UN-ARMoured CABLES (CONTINUED...)
(CU/PVC/PVC)

CONSTRUCTION

Conductor : Plain Annealed Copper
Insulation : PVC Compound
Colours of Cores : 2 Core - Red And black
: 3 Core - Red, Yellow and Blue
: 4 Core - Red, Yellow, Blue and Black
Sheath : PVC Compound (Black)

Specification : **BS. 6346 0.6/1 (1.2) KV**

Table # 6

Conductor Area	Class of Conductor	Thickness of Insulation	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	Kg/Km
10	2	1.0	1.8	18.3	670
16	2	1.0	1.8	20.1	930
25	2	1.2	1.8	24.1	1390
35	2	1.2	1.8	26.9	1840
50	2	1.4	1.9	29.2	2440
70	2	1.4	2.0	33.1	3350
95	2	1.6	2.2	38.3	4580
120	2	1.6	2.3	41.7	5650
150	2	1.8	2.5	46.2	6910
185	2	2.0	2.6	51.2	8600
240	2	2.2	2.8	57.9	11180
300	2	2.4	3.1	64.4	13970
400	2	2.6	3.3	71.8	17750

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

FOUR CORE UN-ARMoured CABLES WITH REDUCED NEUTRAL

(3C+E) –

(CU/PVC/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	2 Core - Red And black
	:	3 Core - Red, Yellow and Blue
	:	4 Core - Red, Yellow, Blue and Black
Sheath	:	PVC Compound (Black)
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 7

Phase Conductor			Neutral Conductor			Thicknes s of sheath	Approx. Overall Diameter	Approx. Net Weight
Nominal Cross- sectional Area	Class of Conductor	Thickness of Insulation	Nominal Cross- sectional Area	Construction, Number/Wire Diameter	Thicknes s of Insulatio n			
mm ²			mm	mm	No/mm	mm	mm	mm
25	2	1.2	16	cc	1.0	1.8	24.1	1390
35	2	1.2	16	cc	1.0	1.8	26.9	1690
50	2	1.4	25	cc	1.2	1.9	29.2	2440
70	2	1.4	35	cc	1.2	2.0	33.1	3050
95	2	1.6	50	cc	1.4	2.1	38.1	4140
120	2	1.6	70	cc	1.4	2.2	41.5	5170
150	2	1.8	70	cc	1.4	2.4	46.0	6210
185	2	2.0	95	cc	1.6	2.5	51.0	7790
240	2	2.2	120	cc	1.6	2.7	57.7	10090
300	2	2.4	150	cc	1.8	2.9	64.0	12550
300	2	2.4	185	cc	2.0	2.9	64.0	12850
400	2	2.6	185	cc	2.0	3.2	71.6	15930

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

PVC SHEATHED SCREENED CABLES HAVING BETWEEN 2 TO 60 CORES

CONSTRUCTION

Conductor : Plain Annealed Flexible Copper

Insulation : PVC Compound

Colours of cores : As Per Required

Inner Sheath : PVC Compound

Breeding Screen : Plain or tinned copper wires

Sheath : PVC Compound

Specification : BS 6004 300/500 V

Table # 8

Number and Nominal Cross-Sectional Area of Conductor	Radial Thickness of Insulation	Radial Thickness of Inner Sheath	Maximum Diameter of The Wire of The Screen	Radial Thickness of Outer Sheath	Mean Overall Diameter		Maximum Insulation Resistance at 70 °C
					Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	mm	MΩ/Km
2*0.5	0.6	0.7	0.16	0.9	7.70	9.60	0.013
2*0.75	0.6	0.7	0.16	0.9	8.00	10.0	0.011
2*1	0.6	0.7	0.16	0.9	8.20	10.3	0.010
2*1.5	0.7	0.7	0.16	1.0	9.30	11.6	0.010
2*2.5	0.8	0.7	0.16	1.1	10.7	13.3	0.009
3*0.5	0.6	0.7	0.16	0.9	8.00	10.0	0.013
3*0.75	0.6	0.7	0.16	0.9	8.30	10.4	0.011
3*1	0.6	0.7	0.16	1.0	8.80	11.0	0.010
3*1.5	0.7	0.7	0.16	1.0	9.70	12.1	0.010
3*2.5	0.8	0.7	0.16	1.1	11.3	14.0	0.009
4*0.5	0.6	0.7	0.16	0.9	8.50	10.7	0.013
4*0.75	0.6	0.7	0.16	1.0	9.10	11.3	0.011
4*1	0.6	0.7	0.16	1.0	9.40	11.7	0.010
4*1.5	0.7	0.7	0.16	1.1	10.7	13.2	0.010
4*2.5	0.8	0.7	0.16	1.2	12.6	15.5	0.009
5*0.5	0.6	0.7	0.16	1.0	9.30	11.6	0.013
5*0.75	0.6	0.7	0.16	1.0	9.70	12.1	0.011
5*1	0.6	0.7	0.16	1.1	10.3	12.8	0.010
5*1.5	0.7	0.8	0.16	1.2	11.8	14.7	0.010
5*2.5	0.8	0.8	0.21	1.3	13.9	17.2	0.009

PVC SHEATHED SCREENED CABLES HAVING BETWEEN 2 TO 60 CORES (CONTINUED...)

CONSTRUCTION

Conductor	:	Plain Annealed Flexible Copper
Insulation	:	PVC Compound
Colours of cores	:	As Per Required
Inner Sheath	:	PVC Compound
Breeding Screen	:	Plain or tinned copper wires
Sheath	:	PVC Compound
Specification	:	BS 6004 300/500 V

Table # 8

Number and Nominal Cross-Sectional Area of Conductor	Radial Thickness of Insulation	Radial Thickness of Inner Sheath	Maximum Diameter of The Wire of The Screen	Radial Thickness of Outer Sheath	Mean Overall Diameter		Maximum Insulation Resistance at 70 °C
					Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	mm	MΩ/Km
6*0.5	0.6	0.7	0.16	1.0	9.90	12.4	0.013
6*0.75	0.6	0.7	0.16	1.1	10.5	13.1	0.011
6*1	0.6	0.7	0.16	1.1	11.0	13.6	0.010
6*1.5	0.7	0.8	0.16	1.2	12.7	15.7	0.010
6*2.5	0.8	0.8	0.21	1.4	15.2	18.7	0.009
7*0.5	0.6	0.7	0.16	1.1	10.8	13.5	0.013
7*0.75	0.6	0.7	0.16	1.2	11.5	14.3	0.011
7*1	0.6	0.8	0.16	1.2	12.2	15.1	0.010
7*1.5	0.7	0.8	0.21	1.3	14.1	17.4	0.010
7*2.5	0.8	0.8	0.21	1.5	16.5	20.3	0.009
12*0.5	0.6	0.8	0.21	1.3	13.3	16.5	0.013
12*0.75	0.6	0.8	0.21	1.3	13.9	17.2	0.011
12*1	0.6	0.8	0.21	1.4	14.7	18.1	0.010
12*1.5	0.7	0.8	0.21	1.5	16.7	20.5	0.010
12*2.5	0.8	0.9	0.21	1.7	19.9	24.4	0.009
18*0.5	0.6	0.8	0.21	1.3	15.1	18.6	0.013
18*0.75	0.6	0.8	0.21	1.5	16.2	19.9	0.011
18*1	0.6	0.8	0.21	1.5	16.9	20.8	0.010
18*1.5	0.7	0.8	0.21	1.7	19.6	24.1	0.010
18*2.5	0.8	0.9	0.21	2.0	23.3	28.5	0.009

PVC SHEATHED SCREENED CABLES HAVING BETWEEN 2 TO 60 CORES (CONTINUED...)

CONSTRUCTION

- Conductor** : Plain Annealed Copper
Insulation : PVC Compound
Colours of cores : As Per Required
Inner Sheath : PVC Compound
Breeding Screen : Plain or tinned copper wires
Sheath : PVC Compound
Specification : BS 6004 300/500 V

Table # 8

Number and Nominal Cross-Sectional Area of Conductor	Radial Thickness of Insulation	Radial Thickness of Inner Sheath	Maximum Diameter of The Wire of The Screen	Radial Thickness of Outer Sheath	Mean Overall Diameter		Maximum Insulation Resistance at 70 °C
					Lower Limit	Upper Limit	
mm ²	mm	mm	mm	mm	mm	mm	MΩ/Km
27*0.5	0.6	0.8	0.21	1.6	18.0	22.1	0.013
27*0.75	0.6	0.9	0.21	1.7	19.3	23.7	0.011
27*1	0.6	0.9	0.21	1.7	20.2	24.7	0.010
27*1.5	0.7	0.9	0.21	2.0	23.4	28.6	0.010
27*2.5	0.8	1.0	0.26	2.3	28.2	34.5	0.009
36*0.5	0.6	0.9	0.21	1.7	20.1	24.7	0.013
36*0.75	0.6	0.9	0.21	1.8	21.3	26.2	0.011
36*1	0.6	0.9	0.21	1.9	22.5	27.6	0.010
36*1.5	0.7	1.0	0.26	2.2	26.6	32.5	0.010
36*2.5	0.8	1.1	0.26	2.4	31.5	38.5	0.009
48*0.5	0.6	0.9	0.26	1.9	23.1	28.3	0.013
48*0.75	0.6	1.0	0.26	2.1	24.9	30.4	0.011
48*1	0.6	1.0	0.26	2.1	26.1	31.9	0.010
48*1.5	0.7	1.1	0.26	2.4	30.4	37.0	0.010
48*2.5	0.8	1.2	0.31	2.4	35.9	43.7	0.009
60*0.5	0.6	1.0	0.26	2.1	25.5	31.1	0.013
60*0.75	0.6	1.0	0.26	2.3	27.0	32.9	0.011
60*1	0.6	1.0	0.26	2.3	28.5	34.7	0.010
60*1.5	0.7	1.1	0.26	2.4	32.7	39.9	0.010
60*2.5	0.8	1.2	0.31	2.4	38.8	47.2	0.009

SINGLE CORE & MULTI-CORE ARMoured CABLES –

(CU/PVC/PVC/AWA OR SWA/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	2 Core - Red And black
	:	3 Core - Red, Yellow and Blue
	:	4 Core - Red, Yellow, Blue and Black
Bedding	:	PVC Compound (Black)
Armour	(i)	Single core – Aluminum wire
	(ii)	2, 3, 4 or 5 core – Galvanized Steel wire
Sheath	:	PVC Compound
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 9

Conductor Cross-sectional Area	Class of Conductor	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	mm	mm	Kg/Km
50	2	1.4	0.8	1.25	1.5	18.3	800
70	2	1.4	0.8	1.25	1.6	20.2	1050
95	2	1.6	0.8	1.25	1.6	22.3	1360
120	2	1.6	1.0	1.6	1.7	25.7	1730
150	2	1.8	1.0	1.6	1.7	27.5	2050
185	2	2.0	1.0	1.6	1.8	29.9	2490
240	2	2.2	1.0	1.6	1.9	32.9	3160
300	2	2.4	1.0	1.6	1.9	35.6	3850
400	2	2.6	1.2	2.0	2.1	40.4	4950
500	2	2.8	1.2	2.0	2.1	43.8	6070
630	2	2.8	1.2	2.0	2.2	47.7	7550
800	2	2.8	1.4	2.5	2.4	82.4	9590
1000	2	3.0	1.4	2.5	2.5	60.9	12060

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

TWO CORE ARMoured CABLES

(CU/PVC/PVC/SWA/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	2 Core - Red And black
Bedding	:	PVC Compound (Black)
Armour	(i)	Single core – Aluminum wire
	(ii)	2, 3, 4 or 5 core – Galv41anized Steel wire
Sheath	:	PVC Compound
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 10

Conductor cross-sectional Area	Class of Conductor	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	mm	mm	Kg/Km
1.5	1	0.6	0.8	0.90	1.4	11.9	300
2.5	2	0.7	0.8	0.90	1.4	13.1	360
4	2	0.8	0.8	0.90	1.4	14.6	440
6	2	0.8	0.8	0.90	1.5	15.9	530
10	2	1.0	0.8	1.25	1.6	19.5	850
16	2	1.0	0.8	1.25	1.6	21.0	1020
25	2	1.2	1.0	1.60	1.7	25.6	1570
35	2	1.2	1.0	1.60	1.8	28.1	1910
50	2	1.4	1.0	1.60	1.9	27.9	2080
70	2	1.4	1.0	1.60	1.9	30.5	2620
95	2	1.6	1.2	2.00	2.1	35.6	3630
120	2	1.6	1.2	2.00	2.2	38.1	4300
150	2	1.8	1.2	2.00	2.3	41.3	5040
185	2	2.0	1.4	2.50	2.4	47.4	6480
240	2	2.2	1.4	2.50	2.5	52.1	7980
300	2	2.4	1.6	2.50	2.7	57.1	9670
400	2	2.6	1.6	2.50	2.9	62.6	11810

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

THREE CORE ARMoured CABLES

(CU/PVC/PVC/SWA/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	3 Core – Red, yellow & Blue
Bedding	:	PVC Compound (Black)
Armour	(i)	2, 3, 4 or 5 core – Galvanized Steel wire
Sheath	:	PVC Compound
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 11

Conductor cross-sectional Area	Class of Conductor	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	mm	mm	Kg/Km
1.5	1	0.6	0.8	0.90	1.4	12.3	330
2.5	2	0.7	0.8	0.90	1.4	13.6	400
4	2	0.8	0.8	0.90	1.4	15.2	510
6	2	0.8	0.8	1.25	1.5	17.4	730
10	2	1.0	0.8	1.25	1.6	20.4	990
16	2	1.0	0.8	1.25	1.6	22	1230
25	2	1.2	1.0	1.60	1.7	26.9	1900
35	2	1.2	1.0	1.60	1.8	29.6	2340
50	2	1.4	1.0	1.60	1.9	31.2	2790
70	2	1.4	1.2	2.00	2.0	35.8	3870
95	2	1.6	1.2	2.00	2.1	40.2	4960
120	2	1.6	1.2	2.00	2.2	43.2	5890
150	2	1.8	1.4	2.50	2.4	49.5	7480
185	2	2.0	1.4	2.50	2.5	53.9	8940
240	2	2.2	1.6	2.50	2.6	59.9	11210
300	2	2.4	1.6	2.50	2.8	65.4	13560
400	2	2.6	1.6	2.50	3.0	71.9	16730

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

FOUR CORE ARMoured CABLES

(CU/PVC/PVC/SWA/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	3 Core – Red, yellow & Blue
Bedding	:	PVC Compound (Black)
Armour	(i)	2, 3, 4 or 5 core – Galvanized Steel wire
Sheath	:	PVC Compound
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 12

Conductor cross-sectional Area	Class of Conductor	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	mm	mm	Kg/Km
1.5	1	0.6	0.8	0.90	1.4	13.0	370
2.5	2	0.7	0.8	0.90	1.4	14.5	460
4	2	0.8	0.8	1.25	1.5	17.2	700
6	2	0.8	0.8	1.25	1.5	18.6	850
10	2	1.0	0.8	1.25	1.6	22.0	1180
16	2	1.0	1.0	1.60	1.7	25.1	1680
25	2	1.2	1.0	1.60	1.8	29.3	2310
35	2	1.2	1.0	1.60	1.9	32.3	2870
50	2	1.4	1.2	2.00	2.0	35.8	3840
70	2	1.4	1.2	2.00	2.1	39.7	4910
95	2	1.6	1.2	2.00	2.2	44.7	6350
120	2	1.6	1.4	2.50	2.4	50.7	8100
150	2	1.8	1.4	2.50	2.5	55.0	9590
185	2	2.0	1.6	2.50	2.6	60.4	11620
240	2	2.2	1.6	2.50	2.8	67.1	14560
300	2	2.4	1.6	2.50	3.0	73.4	17630
400	2	2.6	1.8	3.15	3.3	82.7	22920

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

FIVE CORE ARMoured CABLES (CU/PVC/PVC/SWA/PVC)

CONSTRUCTION

Conductor	:	Plain Annealed Copper
Insulation	:	PVC Compound
Colours of Cores	:	5 Core – Red, Yellow, Blue, Black and Green
Bedding	:	PVC Compound (Black)
Armour	(i)	Single core – Aluminum wire
	(ii)	2, 3, 4 or 5 core – Galvanized Steel wire
Sheath	:	PVC Compound
Specification	:	BS 6346 0.6/1 (1.2) KV

Table # 13

Conductor cross-sectional Area	Class of Conductor	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
mm ²		mm	mm	mm	mm	mm	Kg/Km
1.5	1	0.6	0.8	0.90	1.4	14.5	430
2.5	2	0.7	0.8	0.90	1.5	16.4	550
4	2	0.8	0.8	1.25	1.5	19.1	820
6	2	0.8	0.8	1.25	1.6	20.8	990
10	2	1.0	1.0	1.60	1.7	25.7	1570
16	2	1.0	1.0	1.60	1.7	27.7	1940
25	2	1.2	1.0	1.60	1.9	32.5	2700
35	2	1.2	1.0	1.60	1.9	35.8	3340
50	2	1.4	1.2	2.00	2.1	41.9	4630
70	2	1.4	1.2	2.00	2.2	46.7	5970

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

FOUR CORE ARMoured CABLES WITH REDUCED NEUTRAL

CABLE (3C+E) –

(CU/PVC/PVC/SWA/PVC)

CONSTRUCTION

Conductor	: Plain Annealed Copper
Insulation	: PVC Compound
Colours of Cores	: RED, YELLOW, BLUE, and Green/Yellow (Neutral)
Bedding	: PVC Compound
Armour	: Galvanized Steel Wire
Sheath	: PVC Compound (Black)
Specification	: BS 6346 0.6/1 (1.2) KV

Table # 14

Phase Conductor			Neutral Conductor			Thickness of Bedding	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
Nominal Cross-sectional Area	Class of Conductor	Thickness of Insulation	Nominal Cross-sectional Area	Construction Number/Wire Diameter	Thickness of Insulation				
mm ²			mm	mm	N0/mm	mm	mm	mm	mm
25	2	1.2	16	Cc	1.0	1.0	1.8	29.3	2240
35	2	1.2	16	Cc	1.0	1.0	1.8	32.1	2700
50	2	1.4	25	Cc	1.2	1.0	1.9	34.4	3340
70	2	1.4	35	Cc	1.2	1.2	2.0	39.5	4600
95	2	1.6	50	Cc	1.4	1.2	2.2	44.7	5930
120	2	1.6	70	Cc	1.4	1.4	2.3	50.5	7610
150	2	1.8	70	Cc	1.4	1.4	2.4	54.8	8880
185	2	2.0	95	Cc	1.6	1.4	2.5	59.8	10710
240	2	2.2	120	Cc	1.6	1.6	2.7	66.9	13460
300	2	2.4	150	Cc	1.8	1.6	2.9	73.2	16230
400	2	2.6	185	Cc	2.0	1.8	3.1	82.3	21050

*Note: Class 1 for Solid & class 2 for stranded and circular compacted conductor

AUXILIARY ARMOURED CABLES –

(CU/PVC/PVC/SWA/PVC - 1.5mm²)

CONSTRUCTION

Conductor	: Plain Annealed Copper
Insulation	: PVC Compound
Colours of Cores	: White Insulation Core with Numbering
Bedding	: PVC Compound
Armour	: Galvanized Steel Wire
Sheath	: PVC Compound (Black)
Specification	: BS 6346 0.6/1 (1.2) KV

Table # 15

Number of Cores	Nominal Cross-Sectional Area	Construction Number/ Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
	mm ²	mm	mm	mm	mm	mm	mm	mm
5	1.5	7/0.53	0.6	0.8	0.90	1.4	13.8	410
6	1.5	7/0.53	0.6	0.8	0.90	1.4	14.7	470
7	1.5	7/0.53	0.6	0.8	0.90	1.4	14.7	480
9	1.5	7/0.53	0.6	0.8	1.25	1.5	17.3	700
10	1.5	7/0.53	0.6	0.8	1.25	1.5	18.4	750
12	1.5	7/0.53	0.6	0.8	1.25	1.5	18.8	800
19	1.5	7/0.53	0.6	0.8	1.25	1.6	21.4	1060
27	1.5	7/0.53	0.6	1.0	1.60	1.7	25.9	1550
37	1.5	7/0.53	0.6	1.0	1.60	1.8	28.4	1890
48	1.5	7/0.53	0.6	1.0	1.60	1.9	31.9	2300

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AUXILIARY ARMOURED CABLES – (CU/PVC/PVC/SWA/PVC – 2.5 mm²)

CONSTRUCTION

Conductor	: Plain Annealed Copper
Insulation	: PVC Compound
Colours of Cores	: White Insulation Core with Numbering
Bedding	: PVC Compound
Armour	: Galvanized Steel Wire
Sheath	: PVC Compound (Black)
Specification	: BS 6346 0.6/1 (1.2) KV

Table # 16

Number of Cores	Nominal Cross-Sectional Area	Construction Number/Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
	mm ²	No/mm	mm	mm	mm	mm	mm	Kg/Km
5	2.5	7/0.67	0.7	0.8	0.90	1.5	15.7	530
6	2.5	7/0.67	0.7	0.8	1.25	1.5	17.4	700
7	2.5	7/0.67	0.7	0.8	1.25	1.5	17.4	720
9	2.5	7/0.67	0.7	0.8	1.25	1.6	19.7	890
10	2.5	7/0.67	0.7	0.8	1.25	1.6	21.0	970
12	2.5	7/0.67	0.7	0.8	1.25	1.6	21.6	1050
19	2.5	7/0.67	0.7	1.0	1.60	1.7	25.7	1590
27	2.5	7/0.67	0.7	1.0	1.60	1.8	29.9	2060
37	2.5	7/0.67	0.7	1.0	1.60	1.9	33.0	2540
48	2.5	7/0.67	0.7	1.2	2.00	2.1	38.6	3460

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AUXILIARY ARMOURED CABLES (CU/PVC/PVC/SWA/PVC - 4 mm²)

CONSTRUCTION

Conductor	: Plain Annealed Copper
Insulation	: PVC Compound
Colours of Cores	: White Insulation Core with Numbering
Bedding	: PVC Compound
Armour	: Galvanized Steel Wire
Sheath	: PVC Compound (Black)
Specification	: BS 6346 0.6/1 (1.2) KV

Table # 17

Number of Cores	Nominal Cross-sectional Area	Construction Number/ Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour wire	Thickness of sheath	Approx. Overall Diameter	Approx. Net Weight
	mm ²	mm	mm	mm	mm	mm	mm	Kg/Km
5	4	7/0.85	0.8	0.8	1.25	1.6	18.6	800
6	4	7/0.85	0.8	0.8	1.25	1.6	19.9	910
7	4	7/0.85	0.8	0.8	1.25	1.6	19.9	940
9	4	7/0.85	0.8	1.0	1.60	1.7	23.7	1350
10	4	7/0.85	0.8	1.0	1.60	1.7	25.3	1460
12	4	7/0.85	0.8	1.0	1.60	1.7	25.9	1580
19	4	7/0.85	0.8	1.0	1.60	1.7	29.7	2130
27	4	7/0.85	0.8	1.2	2.00	2.0	36.1	3080
37	4	7/0.85	0.8	1.2	2.00	2.1	39.9	3850
48	4	7/0.85	0.8	1.2	2.00	2.2	44.8	4690

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APPENDIX: TECHNICAL DATA

CURRENT CARRYING CAPACITY FOR SINGLE-CORE, NON-ARMOURED WITH OR WITHOUT SHEATH TO BS 6004 AND BS 6346

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

Table # 18

Conductor cross-sectional area	Current Carrying Capacity										
	Method of Installation										
	Enclosed in conduit in thermally insulated wall etc.		Enclosed in conduit on a wall or in trucking etc.		Clipped Direct		On a Perforated cable tray horizontally or vertically		In free Air		
	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	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 ac flat and touching or trefoil	2 cables, single phase a.c or d.c flat and touching	3 or 4 cables three phase ac flat and touching or trefoil	horizontal flat spaced	Vertically Flat Spaced	Trefoil
mm ²	A	A	A	A	A	A	A	A	A	A	A
1.5	15	13.5	17.5	16	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	126	112	146	130	110
35	99	89	125	110	141	129	156	141	181	162	137
50	119	108	151	134	182	167	191	172	219	197	167
70	151	136	192	171	234	214	246	223	281	254	216
95	182	164	232	207	284	261	300	273	341	311	264
120	210	188	269	239	330	303	349	318	369	362	308
150	240	216	300	262	381	349	404	369	456	419	356
185	273	245	341	296	436	400	463	424	521	480	409
240	320	286	400	346	515	472	549	504	615	569	485

CURRENT CARRYING CAPACITY FOR SINGLE-CORE, NON-ARMOURED WITH OR WITHOUT SHEATH TO BS 6004 AND BS 6346 (CONTINUED...)

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

Table # 18

Conductor cross-sectional area	Current Carrying Capacity										
	Method of Installation										
	Enclosed in conduit in thermally insulated wall etc.		Enclosed in conduit on a wall or in trucking etc.		Clipped Direct		On a Perforated cable tray horizontally or vertically		In free Air		
	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	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 ac flat and touching or trefoil	2 cables, single phase a.c or d.c flat and touching	3 or 4 cables three phase ac flat and touching or trefoil	horizontal flat spaced	Vertically Flat Spaced	Trefoil
mm ²	A	A	A	A	A	A	A	A	A	A	A
300	367	328	458	394	594	545	635	584	709	659	561
400	-	-	546	467	694	634	732	679	852	795	656
500	-	-	626	533	792	723	835	778	982	920	749
630	-	-	720	611	904	826	953	892	1138	1070	855
800	-	-	-	-	1030	943	1086	1020	1265	1188	971
1000	-	-	-	-	1154	1058	1216	1149	1420	1337	1079

CABLES

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VOLTAGE DROP FOR SINGLE CORE, NON-ARMOURD WITH OR WITHOUT SHEATH TO BS 6004 & BS 6346

Conductor operating temperature; 70 °C

Table # 19

Conductor cross-sectional area	2 cables d.c	2 Cables, single phase a.c			3 on 4 cables, three phase a.c			
		enclosed in conduit etc. in or on wall	Clipped Direct or on tray touching	In free Air (spaced)	enclosed in conduit etc. in or on a wall	Clipped Direct or on tray or in free air (in trefoil)	Clipped Direct or on trays (flat and touching)	In free air (flat spaced)
mm ²	mv/Am	mv/Am	mv/Am	mv/Am	mv/Am	mv/Am	mv/Am	mv/Am
1.5	29	29	29	29	25	25	25	25
2.5	18	18	18	19	15	15	15	15
4	11	11	11	11	9.50	9.50	9.50	9.50
6	7.30	7.30	7.30	7.30	6.40	6.40	6.40	6.40
10	4.40	4.40	4.40	4.40	3.80	3.80	3.80	3.80
16	2.80	2.80	2.80	2.80	2.40	2.40	2.40	2.40
25	1.75	1.80	1.75	1.80	1.55	1.50	1.55	1.55
35	1.25	1.30	1.25	1.30	1.10	1.10	1.10	1.15
50	0.93	1.00	0.95	0.97	0.85	0.82	0.84	0.86
70	0.63	0.72	0.66	0.69	0.61	0.57	0.60	0.63
95	0.64	0.56	0.50	0.54	0.48	0.43	0.47	0.51
120	0.36	0.47	0.41	0.45	0.41	0.36	0.40	0.44
150	0.29	0.41	0.34	0.39	0.36	0.30	0.34	0.40
185	0.23	0.37	0.29	0.35	0.32	0.26	0.31	0.36
240	0.18	0.33	0.25	0.31	0.29	0.22	0.27	0.34
300	0.145	0.31	0.22	0.29	0.27	0.19	0.25	0.32
400	0.105	0.29	0.20	0.27	0.25	0.175	0.24	0.31
500	0.086	0.28	0.185	0.26	0.25	0.160	0.23	0.30
630	0.068	0.27	0.175	0.25	0.24	0.150	0.22	0.29
800	0.053	-	0.165	0.25	-	0.145	0.22	0.29
1000	0.042	-	0.160	0.24	-	0.140	0.21	0.28

*Note: Spacing larger than those specified in free air will result voltage drop

CURRENT CARRYING CAPACITY FOR MULTICORE, NON ARMoured TO BS 6004 AND BS 6346

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

Table # 20

Conductor cross-sectional area	Current Carrying Capacity							
	Method of Installation							
	Enclosed in conduit in thermally insulated wall etc.		Enclosed in conduit on a wall or in trucking etc.		Clipped Direct		On a Perforated cable tray horizontally or vertically	
	1 two core cable single phase a.c or d.c	1 Three core or 4 core cable, Three phase a.c	1 two core cable single phase a.c or d.c	1 Three core or 4 core cable, Three phase a.c	1 two core cable single phase a.c or d.c	1 Three core or 4 core cable, Three phase a.c	1 two core cable single phase a.c or d.c	1 Three core or 4 core cable, Three phase a.c
mm ²	A	A	A	A	A	A	A	A
1.5	15	13	16	15	19	17	22	18
2.5	18	17	23	20	27	24	30	25
4	25	23	30	27	36	32	40	34
6	32	29	38	34	46	41	51	43
10	43	39	52	46	63	57	70	60
16	57	52	69	62	85	76	94	80
25	75	58	90	80	112	96	119	101
35	92	83	111	99	138	119	148	126
50	111	99	133	118	168	144	180	153
70	139	125	168	149	213	184	232	196
95	167	150	201	179	258	223	282	238
120	192	172	232	206	299	259	328	276
150	219	196	258	225	344	299	378	319
185	248	223	294	255	392	341	434	364
240	291	261	344	297	461	403	514	430
300	334	298	394	339	530	464	593	497
400	-	-	470	402	634	557	715	597

VOLTAGE DROP FOR MULTICORE, NON ARMoured TO BS 6004 AND BS 6346

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

Table # 21

Conductor cross-sectional area	Two core cable d.c	two core cable, single phase a.c	3 or 4 core cable, Three phase a.c
mm ²	mV/A/m	mV/A/m	mV/A/m
1.5	29	29	25
2.5	18	18	15
4	11	11	9.50
6	7.30	7.30	6.40
10	4.40	4.40	3.80
16	2.80	2.80	2.40
25	1.75	1.75	1.50
35	1.25	1.25	1.4
50	0.93	0.94	0.81
70	0.63	0.65	0.57
95	0.46	0.50	0.43
120	0.36	0.41	0.35
150	0.29	0.34	0.29
185	0.23	0.29	0.25
240	0.18	0.24	0.21
300	0.145	0.21	0.185
400	0.105	0.185	0.160



CABLES

SINCE 1999

CURRENT CARRYING CAPACITY FOR SINGLE CORE ARMURED TO BS 6346

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

Table # 22

Conductor cross-sectional area	Current carrying capacity											
	Method of installation											
	Clipped Direct		On a perforated cable tray		In free air							
					2 cables, Single phase a.c		2 cables 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	2 cables single phase a.c or d.c flat and touching	3 or 4 cables Three phase a.c flat and touching	Horizontal flat spaced	Vertical flat spaced	Horizontal spaced	Vertical spaced	Horizontal flat spaced	Vertical flat spaced	3 cables trefoil	
mm ²	A	A	A	A	A	A	A	A	A	A	A	
50	193	179	205	189	229	217	229	216	230	212	181	
70	245	225	259	238	287	272	294	279	286	263	231	
95	296	269	313	285	349	332	357	340	338	313	280	
120	342	309	360	327	401	383	415	396	385	357	324	
150	395	354	415	375	456	436	482	460	436	407	373	
185	447	399	469	422	511	489	548	525	490	456	425	
240	525	465	550	492	593	568	648	522	566	528	501	
300	594	515	624	547	668	640	748	719	674	632	567	
400	687	575	723	618	737	707	885	851	771	723	657	
500	763	622	805	673	810	777	1035	997	871	816	731	
630	843	669	891	728	893	856	1218	1174	971	916	809	
800	919	710	976	777	943	905	1441	1390	1171	1116	886	
1000	975	737	1041	808	1008	967	1685	1627	1371	1316	945	

CABLES

SINCE 1999

VOLTAGE DROP FOR SINGLE CORE, ARMoured TO BS 6346

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

Table # 23

Conductor cross-sectional area	2 cables d.c	2cables, single phase a.c		3 or 4 cables three phase a.c or d.c		
		clipped direct or on trays (touching)	In free air (Spaced)	Clipped direct on trays or in free air (in trefoil touching)	Clipped direct or on trays (flat and touching)	In free air (flat spaced)
mm ²	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
50	0.930	0.950	0.970	0.820	0.84	0.86
70	0.630	0.680	0.720	0.580	0.62	0.68
95	0.460	0.520	0.580	0.450	0.50	0.57
120	0.360	0.430	0.500	0.370	0.43	0.50
150	0.290	0.370	0.440	0.320	0.38	0.45
185	0.230	0.320	0.390	0.270	0.34	0.41
240	0.180	0.270	0.350	0.230	0.30	0.37
300	0.145	0.240	0.320	0.210	0.28	0.34
400	0.105	0.220	0.300	0.195	0.26	0.32
500	0.086	0.210	0.290	0.180	0.25	0.30
630	0.068	0.195	0.270	0.170	0.23	0.28
800	0.053	0.185	0.250	0.160	0.22	0.26
1000	0.042	0.180	0.240	0.155	0.21	0.24

CABLES

SINCE 1999

*Note: Spacing larger than those specified in free air will result in larger voltage drop.

CURRENT CARRYING CAPACITY FOR MULTICORE, ARMOURED TO BS 6346

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

Table # 24

Conductor cross-sectional area	Current carrying capacity			
	Method of installation			
	clipped direct		on a perforated cable tray horizontal or vertical or in free air	
	1 two core cable, single phase a.c or d.c	1 three or four core cable, three phase a.c	1 two core cable, single phase a.c or d.c	1 three or four core cable, three phase a.c
mm ²	A	A	A	A
1.5	21	18	22	19
2.5	28	25	31	26
4	38	33	41	35
6	49	42	53	45
10	67	58	72	62
16	89	77	97	83
25	118	102	128	110
35	145	125	157	135
50	175	151	190	163
70	222	192	241	207
95	269	231	291	251
120	310	267	336	290
150	356	306	386	332
185	405	348	439	378
240	476	409	516	445
300	547	469	592	410
400	621	504	683	590



SINCE 1999

VOLTAGE DROP FOR MULTICORE, ARMOURED TO BS 6346

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

Table # 25

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
mm ²	mV/A/m	mV/A/m	mV/A/m
1.5	29	29	25
2.5	18	18	15
4	11	11	9.50
6	7.30	7.30	6.40
10	4.40	4.40	3.80
16	2.80	2.80	2.40
25	1.75	1.75	1.50
35	1.25	1.25	1.10
50	0.93	0.94	0.91
70	0.63	0.65	0.57
95	0.46	0.50	0.43
120	0.36	0.41	0.35
150	0.29	0.34	0.29
185	0.23	0.29	0.25
240	0.18	0.24	0.21
300	0.145	0.21	0.185
400	0.105	0.185	0.160



CABLES

SINCE 1999

RATING FACTOR FOR GROUPS OF MORE THEN ONE CIRCUIT OF SINGLE CORE CABLES, OR MORE THEN ONE MULTICORE CABLES

Table # 26

Method of installation		Rating factor													
		Number of circuits or multicore cables													
		2	3	4	5	6	7	8	9	10	12	14	16	18	20
Enclosed or bunched and clipped direct to a non-metallic surface		0.80	0.70	0.65	0.60	0.57	0.54	0.50	0.50	0.50	0.45	0.43	0.40	0.40	0.40
Single layer Clipped to a non-metallic surface	Touching	0.85	0.79	0.75	0.73	0.72	0.72	0.70	0.70	-	-	-	-	-	-
	Spaced*	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Single layer multicore on a perforated metal cable tray, vertical or horizontal	Touching	0.86	0.81	0.77	0.75	0.74	0.73	0.70	0.72	0.70	0.70	-	-	-	-
	Spaced*	0.91	0.89	0.88	0.87	0.87	-	-	-	-	-	-	-	-	-
Single layer single core on a perforated metal cable tray, touching	Horizontal	0.90	0.85	-	-	-	-	-	-	-	-	-	-	-	-
	Vertical	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-
Single layer multicore touching on ladder support		0.86	0.82	0.80	0.79	0.78	0.78	0.80	0.77	-	-	-	-	-	-

CABLES
SINCE 1999

*NOTE: Spaced by a clearance between adjacent surface of at least one cable diameter. Where the horizontal clearance between adjacent cable exceeds twice cable diameter no correction factor needs to be applied

RATING FACTOR FOR CABLES INSTALLED IN ENCLOSED TRENCHES

Table # 27

Conductor cross-sectional area mm ²	Rating Factor									
	Trench size 450 mm wide x 300 mm deep				Trench size 450 mm wide x 600 mm deep			Trench size 600 mm wide x 760 mm deep		
	2 single core cables or 1 three or four core cables	3 single core cables 2 Two core cables	4 single core cables or 2 three or four core cables	6 single core cables, 4 two core cables or 3 three or four core cables	6 single core cables, 4 two core cables or 3 three or four core cables	8 single core cables 4 three or four core cables	12 single core cables, 8 two or 6 three or four core cables	12 single core cables, 8 two or 6 three or four core cables	18 single core cables, 12 two core cables or 9 three or four core cables	24 single core cables, 16 two core cables or 12 three or four core cables
4	0.93	0.90	0.87	0.82	0.86	0.83	0.76	0.81	0.74	0.69
6	0.92	0.89	0.86	0.81	0.86	0.82	0.75	0.80	0.73	0.68
10	0.91	0.88	0.85	0.80	0.85	0.80	0.74	0.78	0.72	0.66
16	0.91	0.87	0.84	0.78	0.83	0.78	0.71	0.76	0.70	0.64
25	0.9	0.86	0.82	0.76	0.81	0.76	0.69	0.74	0.67	0.62
35	0.89	0.85	0.81	0.75	0.80	0.74	0.68	0.72	0.66	0.60
50	0.88	0.84	0.79	0.74	0.78	0.73	0.66	0.71	0.64	0.59
70	0.87	0.82	0.78	0.72	0.77	0.72	0.64	0.70	0.62	0.57
95	0.86	0.81	0.76	0.70	0.75	0.70	0.63	0.68	0.60	0.55
120	0.85	0.80	0.75	0.69	0.73	0.68	0.61	0.66	0.58	0.53
150	0.84	0.78	0.74	0.67	0.72	0.67	0.59	0.64	0.57	0.51
185	0.83	0.77	0.73	0.65	0.70	0.65	0.58	0.63	0.55	0.49
240	0.82	0.76	0.71	0.63	0.69	0.63	0.56	0.61	0.53	0.48
300	0.81	0.74	0.69	0.62	0.68	0.62	0.54	0.59	0.52	0.46
400	0.80	0.73	0.67	0.59	0.66	0.60	0.52	0.57	0.50	0.44
500	0.78	0.72	0.66	0.58	0.64	0.58	0.51	0.56	0.48	0.43
630	0.77	0.71	0.65	0.56	0.63	0.57	0.49	0.54	0.47	0.41

*Note: When cable having different conductor operating temperature are grouped together the current rating shall be based on the lowest operating temperature of any cable in the group

RATING FACTOR FOR OTHER AMBIENT TEMPERATURE

Table # 28

Types of protection	Rating factor								
	Ambient temperature (°C)								
	25	30	35	40	45	50	55	60	65
Protected device intended to provide short circuit protection only	1.03	1	0.94	0.87	0.79	0.71	0.61	0.5	0.35
protective device is a semi-enclosed fuse BS 3036	1.03	1	0.97	0.94	0.91	0.87	0.84	0.69	0.48

METRIC CONDUCTOR SIZE AND RESISTANCE (AT 20 °C)

Table # 29

Nominal cross-sectional area mm ²	Minimum number of wire in the conductor						Maximum resistance of conductor at 20 °C		
	Circular conductor		Circular Compacted conductor		Shaped Conductor		Annealed copper conductor		Plain Aluminum conductor
	Cu	Al	Cu	Al	Cu	Al	Plain wire	metal-coated wires	
							ohm/km	ohm/km	ohm/km
1.5	7	-	6	-	-	-	12.10	12.20	-
2.5	7	-	6	-	-	-	7.410	7.56	-
4	7	7	6	-	-	-	4.610	4.70	7.41
6	7	7	6	-	-	-	3.080	3.11	4.61
10	7	7	6	-	-	-	1.830	1.84	3.08
16	7	7	6	6	-	-	1.150	1.16	1.91
25	7	7	6	6	6	6	0.727	0.734	1.20
35	7	7	6	6	6	6	0.524	0.529	0.868
50	19	19	6	6	6	6	0.387	0.391	0.641
70	19	19	12	12	12	12	0.268	0.270	0.443
95	19	19	15	15	15	15	0.193	0.195	0.320
120	37	37	18	15	18	15	0.153	0.154	0.253
150	37	37	18	15	18	15	0.124	0.126	0.206
185	37	37	30	30	30	30	0.0991	0.100	0.164
240	61	61	34	30	34	30	0.0754	0.0762	0.125
300	61	61	34	30	34	30	0.0601	0.0607	0.100
400	61	61	53	53	53	53	0.0470	0.0475	0.0778
500	61	61	53	53	53	53	0.0366	0.0369	0.0605
630	91	91	53	53	53	53	0.0283	0.0286	0.0469
800	91	91	53	53	-	-	0.0221	0.0224	0.0367
1000	91	91	53	53	-	-	0.0176	0.0177	0.0291

WIRE GAUGE

Table # 30

Gauge system		Diameter		Cross-sectional area		Weight of copper		Weight of Aluminum
A.W.G	S.W.G	mm	mil	mm ²	sq.mil	cm	kg/km	kg/km
6/0	-	14.732	580.0	170.50	264200	336400	1515	460.20
5/0	-	13.119	516.5	135.20	209500	266800	1202	365.00
-	7/0	12.700	500.0	126.70	196400	250000	1126	342.00
-	6/0	11.786	464.0	109.10	169100	215300	969.9	294.60
4/0	-	11.684	460.0	107.20	166200	211600	953.2	289.50
-	5/0	10.973	432.0	94.560	146600	186600	840.6	255.30
3/0	-	10.404	409.6	85.010	131800	167800	755.8	229.50
-	4/0	10.160	400.0	81.070	125700	160000	720.7	218.90
-	3/0	9.4490	372.0	70.120	108700	138400	623.4	189.30
2/0	-	9.2660	364.8	67.120	104500	133100	599.5	182.10
-	2/0	8.8390	348.0	61.360	95110	121100	545.5	165.70
0	-	8.2520	324.9	53.490	82910	105600	475.5	144.40
-	0	8.230	324.0	53.190	82450	105000	472.9	143.60
-	1	7.620	300.0	45.60	70690	90000	405.4	123.10
1	-	7.348	289.3	42.41	65730	83690	377.0	114.50
-	2	7.011	276.0	38.60	59830	76180	343.2	104.22
2	-	6.544	257.6	33.63	52120	66370	299.0	90.80
-	3	6.401	252.0	32.18	49880	63500	286.1	86.88
-	4	5.893	232.0	27.27	42270	53820	242.4	73.63
3	-	5.827	229.4	26.66	41330	52620	237.0	71.99
-	5	5.385	212.0	22.77	35300	44940	202.4	61.49
4	-	5.189	204.3	21.15	32780	41730	188.0	57.10
-	6	4.877	192.0	18.68	28950	36860	166.1	10.43
5	-	4.621	181.9	16.77	26000	33100	159.1	45.28
-	7	4.470	176.0	15.69	24320	30970	139.5	42.37
6	-	4.115	162.0	13.30	20620	26250	118.3	35.92
-	8	4.064	160.0	12.97	20110	25600	115.3	35.20
7	-	3.665	144.3	10.55	16350	20820	93.75	28.48



WIRE GAUGE (CONTINUED...)

Table # 30

Gauge system		Diameter		Cross-sectional area		Weight of copper		Weight of Aluminum
A.W.G	S.W.G	mm	mil	mm ²	sq.mil	cm	kg/km	kg/km
-	9	3.658	144	10.85	16290	20740	93.41	28.37
8	-	3.264	128.5	8.367	12970	16510	74.39	22.59
-	10	3.251	128	8.602	12870	16380	73.8	22.42
-	11	2.946	116	6.818	10570	13460	60.61	18.41
9	-	2.906	114.4	6.633	10280	13090	58.56	17.91
-	12	2.642	104	5.481	8495	10820	48.72	14.8
10	-	2.588	101.9	5.261	8155	10380	66.77	14.21
-	13	2.337	92	4.289	6648	8465	38.13	11.58
11	-	2.305	90.74	4.172	6467	8234	37.09	11.26
12	-	2.053	80.81	3.309	5129	6531	29.42	8.935
-	14	2.032	80	3.243	5027	6400	28.83	8.756
-	15	1.829	72	2.627	4072	5185	23.35	7.093
13	-	1.828	71.96	2.624	4067	5178	23.33	7.085
14	-	1.628	64.08	2.081	3225	4107	18.5	5.618
-	16	1.626	64	2.075	3217	4096	18.45	5.604
15	-	1.45	57.07	1.65	2558	3257	14.67	4.456
-	17	1.422	56	1.589	2463	3136	14.13	4.29
16	-	1.291	50.82	1.309	2029	2583	11.63	3.534
-	18	1.219	48	1.167	1810	2304	10.38	3.152
17	-	1.15	45.26	1.038	1609	2048	9.226	2.802
18	-	1.024	40.3	0.8227	1275	1624	7.314	2.221
-	19	1.016	40	0.8107	1257	1600	7.207	2.189
-	20	0.9144	36	0.6567	1018	1296	5.838	1.773
19	-	0.9117	35.89	0.6529	1012	1288	5.804	1.763
-	21	0.8128	32	0.5189	804.2	1024	4.613	1.401
20	-	0.8116	31.95	0.5174	801.9	1021	4.6	1.397
21	-	0.723	28.46	0.4105	636.3	810.1	3.649	1.108

WIRE GAUGE (CONTINUED...)

Table # 30

Gauge system		Diameter		Cross-sectional area		Weight of copper		Weight of Aluminum
A.W.G	S.W.G	mm	mil	mm ²	sq.mil	cm	kg/km	kg/km
-	22	0.7112	28	0.3979	615.8	784	3.532	1.073
22	-	0.6439	25.35	0.3256	504.7	642.6	2.895	0.8792
-	23	0.6096	24	0.2919	452.4	576	2.595	0.788
23	-	0.5733	22.57	0.2581	400.1	509.4	2.295	0.697
-	24	0.5588	22	0.2452	380.1	484	2.18	0.6622
24	-	0.5106	20.1	0.2047	317.3	404	1.82	0.5528
-	25	0.508	20	0.2027	314.2	400	1.802	0.5472
-	26	0.4572	18	0.1642	254.5	324	1.46	0.4433
25	-	0.4546	17.9	0.1623	251.6	320.4	1.443	0.4383
-	27	0.4166	16.4	0.1363	211.3	269	1.212	0.368
26	-	0.4049	15.94	0.1288	199.6	254.1	1.145	0.3477
-	28	0.3759	14.8	0.111	172	219	0.9867	0.2997
27	-	0.3606	14.2	0.1021	158.3	201.5	0.9477	0.2757
-	29	0.3454	13.6	0.09372	145.3	185	0.8332	0.253
28	-	0.3211	12.64	0.08097	125.5	159.8	0.7198	0.2186
-	30	0.315	12.4	0.07791	120.8	153.8	0.6926	0.2104
-	31	0.2947	11.6	0.06819	105.7	134.6	0.6062	0.1841
29	-	0.286	11.26	0.06422	99.54	126.7	0.5709	0.1734
-	32	0.2743	10.8	0.05908	91.58	116.6	0.5252	0.1595
30	-	0.2548	10.03	0.05097	79.01	100.6	0.4531	0.1376
-	33	0.254	10	0.05067	78.54	100	0.4505	0.1368
-	34	0.2337	9.2	0.04289	66.48	84.64	0.3813	0.1158
31	-	0.2268	8.928	0.04039	62.6	79.71	0.359	0.109
-	35	0.2134	8.4	0.03575	55.42	70.56	0.3178	0.09653
32	-	0.2019	7.95	0.03203	49.64	63.2	0.2847	0.08647
-	36	0.193	7.6	0.02927	45.36	57.76	0.2602	0.07902
33	-	0.1798	7.08	0.0254	39.37	50.13	0.2258	0.06858
-	37	0.1727	6.8	0.02343	36.32	46.24	0.2083	0.06326
34	-	0.1602	6.305	0.02014	31.22	39.75	0.1791	0.05439

WIRE GAUGE (CONTINUED...)

Table # 30

Gauge system		Diameter		Cross-sectional area		Weight of copper		Weight of Aluminum
A.W.G	S.W.G	mm	mil	mm ²	sq.mil	cm	kg/km	kg/km
-	38	0.1524	6	0.01824	28.27	36	0.1622	0.04925
35	-	0.1426	5.615	0.01597	24.76	31.53	0.142	0.04313
-	39	0.1321	5.2	0.0137	21.24	27.04	0.1218	0.037
36	-	0.127	5	0.01267	19.63	25	0.1126	0.0342
-	40	0.1219	4.8	0.01167	18.1	32.04	0.1038	0.03152
37	-	0.1131	4.453	0.01005	15.57	19.83	0.08931	0.02713
-	41	0.1118	4.4	0.00981	15.21	19.36	0.08721	0.02649
-	42	0.1016	4	0.00811	12.57	16	0.07207	0.02189
38	-	0.1007	3.965	0.00797	12.35	15.72	0.03048	0.02151
-	43	0.0914	3.6	0.00657	10.18	12.96	0.05438	0.01773
39	-	0.0897	3.531	0.00632	9.794	12.47	0.05618	0.01706
-	44	0.08128	3.2	0.00519	8.042	10.24	0.04613	0.01401
40	-	0.07988	3.145	0.00501	7.768	9.891	0.04456	0.01353
41	45	0.07113	2.8	0.00397	6.159	7.842	0.03532	0.01073
42	-	0.06334	2.494	0.00315	4.884	6.219	0.02801	0.008508
-	46	0.6069	2.4	0.00292	45240	5.76	0.02595	0.00788
43	-	0.05641	2.221	0.0025	3.873	4.932	0.02222	0.006747
-	47	0.0508	2	0.00203	3.142	4	0.01802	0.005472
44	-	0.05023	1.978	0.00198	3.072	3.911	0.01762	0.005351
45	-	0.04474	1.761	0.00157	2.436	3.102	0.01397	0.004244
-	48	0.04064	1.6	0.0013	2.011	2.56	0.01153	0.003502
46	-	0.03984	1.568	0.00125	1.932	2.46	0.01108	0.003365
47	-	0.03548	1.397	0.00099	1.532	1.951	0.008787	0.002669
48	-	0.03159	1.244	0.00078	1.215	1.547	0.006968	0.002116
-	49	0.03048	1.2	0.00073	1.131	1.44	0.006487	0.00197
49	-	0.02813	1.108	0.00062	0.9635	1.227	0.005526	0.001678
-	50	0.0254	1	0.00051	0.7854	1	0.004505	0.001368
50	-	0.02505	0.986	0.00049	0.7641	1.973.0	0.004382	0.001331

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COMMON CONVERSION FACTOR

Table # 31

Equivalent			Reciprocal		
Mass					
1	cwt	=	50.802	kg	0.0197
1	oz	=	28.349	gm	0.0352
1	ib	=	0.4536	kg	2.2046
1	ib	=	0.00454	ton (metric)	220.26
1	ton (Long)	=	1.016	ton (metric)	0.09842
Length					
1	in	=	25.4	mm	0.03937
1	ft	=	0.3048	m	3.2808
1	yd	=	0.9144	m	1.0936
1	mile	=	1.6093	km	0.6214
Area					
1	in ²	=	645.16	mm ²	0.00155
1	ft ²	=	0.0929	m ²	10.7642
1	yd ²	=	0.8361	m ²	1.194
Volume					
1	in ³	=	16.387	cm ³ (ml or cc)	0.061
1	ft ³	=	0.0283	m ³	35.3335
1	ft ³	=	6.229	gal (Imp)	0.1605
1	ft ³	=	28.328	l	0.0353
1	yd ³	=	0.7645	m ³	1.3079
1	gal (USA)	=	0.8327	gal (Imp)	1.2009
Force					
1	ibf	=	0.4535	kgf	2.2046
1	kgf	=	9.8065	N	0.1019
1	ton (Long) f	=	9.964	KN	0.10036
Pressure & Stress					
1	atm	=	0.1013	MPa	9.869
1	atm	=	1.0133	bar	0.9869
1	ibf/in ² (psi)	=	6.894	kN/mm ² (kPa)	0.145
1	bar	=	1.0197	kgf/cm ²	0.09806
Energy (Work & Heat)					
1	HP.h	=	2544.5	Btu	0.00393
1	Btu	=	0.000293	KW.h	3413.00
1	Btu	=	1.0551	KJ	0.9478
1	Btu	=	107.59	kgf.m	0.00929
1	cal	=	4.187	J	0.239

1 mil = 0.001 in = 0.0254 mm

1 CM (circular mil) = 0.7854 x 10⁻⁶ in² = 0.5067 x 10⁻³ mm²

FORMULA FOR ELECTRIC CALCULATION

To Calculate	Given	D.C	A.C Single Phase	A.C Three Phase
Current (A)	KW	$A = \frac{1000 \times kw}{V}$	$A = \frac{1000 \times kw}{V \times Pf}$	$A = \frac{1000 \times kw}{1.73 \times V \times Pf}$
Current (A)	KVA	---	$A = \frac{1000 \times KVA}{V}$	$A = \frac{1000 \times kw}{1.73 \times V}$
Current (A)	Hp	$A = \frac{746 \times hp}{V \times eff}$	$A = \frac{746 \times hp}{V \times eff \times Pf}$	$A = \frac{746 \times hp}{1.73 \times eff \times Pf}$
Power (KW)	VA	$KW = \frac{A \times V}{1000}$	$KW = \frac{A \times V \times Pf}{1000}$	$KW = \frac{1.73 \times A \times V \times Pf}{1000}$
Apparent Power (KVA)	VA	---	$KVA = \frac{A \times V}{1000}$	$KW = \frac{1.73 \times A \times V}{1000}$

- Pf = Power factor of equipment or system under consideration
- Eff = Efficiency of motor or machinery
- V = Line voltage

CABLES

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