

# WIRES & WIRING CABLES





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# Introduction

Mark Cables FZE is a Cable Manufacturer processing both Copper and Aluminium Rods as input raw material to produce wire and cable as finished product. We are located in Jebel Ali Freezone Dubai – UAE.

Mark Cables is privately owned with sister companies in Angola, Rwanda, South Africa where the group has interests in Wire & Cable, Steel Forming, Paints, Household plastic products manufacturing. Our partner companies are:

- Milbridge Holding SA (Secursal em Angola) (Steel Forming, Wire & Cable, Paints)
- Primeplast Lda – Angola – Plastic Products Manufacturing
- Afriprecast – Rwanda (Precast Concrete Solutions)
- Casasteel Pty Ltd – South Africa – Steel Products Trading Company

Our team is committed to providing our customers value by offering high levels of industry experience, superior customer service, and a large selection of quality cables in both copper and aluminium wires, building wires, flexible cables, control cables, low voltage power cables, overhead conductors and underground cables.

## Vision, Mission & Core Values

**Our Vision:** To be a Leading Quality Manufacturer of Cables and Related Products in the Middle East and Africa.

**Our Mission:** We are committed to developing and improving manufacturing methods to ensure the highest possible level of value, quality and products to meet our clients' needs through being a responsible and dependable manufacturer

**Our Core Values:** Our corporate values center on four core elements explained below:

### Ownership

- We trust our employees to make every effort to do right by the company, and we make every effort to do right by employees in return

### Integrity

- We treasure loyalty, uphold honesty, and practice good business ethics.

### Reliability

- We uphold service excellence, take pride in our product quality and ensure commitments are duly fulfilled and are consistently upheld.

### Teamwork

- We embrace teamwork, harmony and mutual respect with our customers, suppliers, and employees

# Company Quality Policy

Mark Cables FZE is committed to supplying products and services to its clients that fully satisfy their requirements and expectations. Quality permeates our entire process all the way from procurement of raw materials, production, quality testing, delivery and after sales backup services to the customer. Our products are manufactured to international standards. Our cables are individually tested in our laboratory to ensure that the products meet the highest standards. Certificates of Conformity are available upon request for each shipment.

The cables manufactured by Mark Cables FZE are clearly marked with the company name, cable size details and voltage ratings.

The management of Mark Cables are committed to implementing the following policy:-

- **Customers:** Provide products and services that comply with the requirements and expectations of our customers.
- **Owners:** Provide products that will deliver a profit to the organization without compromise to quality and the necessary resources for Organizational, Operational support management of the business.
- **Employees:** Provide a safe working environment; develop our team to improve our core competencies and their development and job satisfaction.
- **Suppliers:** Select our suppliers and partners fairly and without prejudice to our stakeholders.
- **Community:** Engage in charitable works for the benefit of our community and society.
- **Statutory/Regulatory Requirements:** Comply with applicable legal and statutory requirements



## CU/PVC WIRES 450/750 VOLTS (ROUND SOLID)

Copper Conductor PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V-U as per BS EN 50525-2-31 (BS 6004) Type IEC 01 as per IEC 60227

Conductor: Round Solid (Class 1)

Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227

Based on special request, PVC insulation rated 85°C and 90°C (105°C for reduced duration) can also be provided.



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Solid)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm <sup>2</sup>		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	1	1.38	0.7	2.8	20	12.1	100 Yards
1 x 2.5	1	1.78	0.8	3.4	32	7.41	100 Yards
1 x 4	1	2.25	0.8	3.9	47	4.61	100 Yards
1 x 6	1	2.76	0.8	4.4	65	3.08	100 Yards
1 x 10	1	3.57	1.0	5.6	110	1.83	100 Yards

Color: green/yellow blue black green red yellow brown grey orange white

Packing: 100 Yards in Coils or Spools

Based on specific requirement, wires can also be supplied in km lengths in wooden or steel drums.

## CU/PVC WIRES 450/750 VOLTS (ROUND STRANDED)

Copper Conductor, PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V-R as per BS EN 50525-2-31 (BS 6004), Type IEC 01 as per IEC 60227

Conductor: Round Stranded (Class 2)

Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227

Based on special request, PVC insulation rated 85°C and 90°C (105°C for reduced duration) can also be provided.



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Stranded)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm <sup>2</sup>		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	7	1.56	0.7	3.0	21	12.1	100 Yards
1 x 2.5	7	1.98	0.8	3.6	33	7.41	100 Yards
1 x 4	7	2.52	0.8	4.1	48	4.61	100 Yards
1 x 6	7	3.12	0.8	4.7	68	3.08	100 Yards
1 x 10	7	4.01	1.0	6.0	113	1.83	100 Yards
1 x 16	7	5.03	1.0	7.0	170	1.15	100 Yards
1 x 25	7	6.30	1.2	8.7	265	0.727	100 Yards
1 x 35	7	7.44	1.2	9.8	361	0.524	100 Yards
1 x 50	19	8.10	1.4	10.9	470	0.387	3000 Drum
1 x 70	19	9.70	1.4	12.5	660	0.268	3000 Drum
1 x 95	19	11.40	1.6	14.6	920	0.193	3000 Drum
1 x 120	37	12.90	1.6	16.1	1140	0.0601	2000 Drum
1 x 150	37	14.30	1.8	17.9	1410	0.153	2000 Drum
1 x 185	37	16.00	2.0	20.0	1770	0.124	2000 Drum
1 x 240	61	18.40	2.2	22.8	2320	0.0991	1000 Drum
1 x 300	61	20.40	2.4	25.2	2900	0.0754	1000 Drum
1 x 400	61	23.20	2.6	28.4	3700	0.0470	500 Drum
1 x 500	61	26.70	2.8	32.3	4730	0.0366	500 Drum
1 x 630	61	30.40	2.8	36.0	6050	0.0283	500 Drum

Color: green/yellow blue black green red yellow brown grey orange white

Based on specific requirement, wires can also be supplied in km lengths in wooden or steel drums.

## CU/PVC WIRES 450/750 VOLTS (ROUND FLEXIBLE)

Copper Conductor PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V-K as per BS EN 50525-2-31 (BS 6004) Type IEC 02 as per IEC 60227

Conductor: Flexible (Class 5)

Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227

*Based on special request, PVC insulation rated 85°C and 90°C (105°C for reduced duration) can also be provided.*



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Round Flexible)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Numbers of Wires in Conductor	Diameter of Conductor Approx.					
mm <sup>2</sup>	No x mm	mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	27 x 0.25	1.55	0.7	3.0	20	13.3	100 C
1 x 2.5	45 x 0.25	2.00	0.8	3.6	30	7.98	100 C
1 x 4	50 x 0.30	2.51	0.8	4.2	45	4.95	100 C
1 x 6	76 x 0.30	3.09	0.8	4.7	65	3.30	100 C
1 x 10	74 x 0.40	4.07	1.0	6.1	110	1.91	100 C
1 x 16	118 x 0.40	5.08	1.0	7.1	165	1.21	100 C
1 x 25	182 x 0.40	6.35	1.2	9.0	255	0.780	100 C
1 x 35	257 x 0.40	7.50	1.2	10.0	345	0.554	100 C
1 x 50	371 x 0.40	8.95	1.4	12.0	495	0.386	1000 D
1 x 70	336 x 0.50	10.70	1.4	14.0	690	0.272	1000 D
1 x 95	444 x 0.50	12.30	1.6	16.0	910	0.206	1000 D
1 x 120	568 x 0.50	14.00	1.6	17.2	1150	0.161	1000 D
1 x 150	708 x 0.50	15.60	1.8	19.2	1435	0.129	1000 D
1 x 185	864 x 0.50	17.20	2.0	21.2	1745	0.106	1000 D
1 x 240	1134 x 0.50	20.00	2.2	24.4	2265	0.0801	1000 D
1 x 300	1414 x 0.50	22.00	2.4	27.0	2815	0.0641	1000 D

Color: green/yellow blue black green red yellow brown grey orange white



## CU/LSZH WIRES 450/750 VOLTS (ROUND SOLID)

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z-U as per BS EN 50525-3-41 (BS 7211)

Conductor: Round Solid (Class 1)

Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 DC earth.

Nominal Cross Section	Conductor (Solid)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm <sup>2</sup>		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	1	1.38	0.7	3.0	20	12.1	100 Yards
1 x 2.5	1	1.78	0.8	3.5	32	7.41	100 Yards
1 x 4	1	2.25	0.8	4.0	47	4.61	100 Yards
1 x 6	1	2.76	0.8	5.0	65	3.08	100 Yards
1 x 10	1	3.57	1.0	6.0	110	1.83	100 Yards

Color: green/yellow blue black green red yellow brown grey orange white

## CU/LSZH WIRES 450/750 VOLTS (ROUND STRANDED)

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z-R as per BS EN 50525-3-41 (BS 7211)

Conductor: Round Solid (Class 2)

Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Round Stranded)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Numbers of Wires in Conductor	Approx. Diameter of Conductor.					
mm <sup>2</sup>	No	mm	mm	mm	Kg / Km	Ohm / Km	Yards
1 x 1.5	7	1.56	0.7	3.0	21	12.1	100 C
1 x 2.5	7	1.98	0.8	3.6	33	7.41	100 C
1 x 4	7	2.52	0.8	4.1	48	4.61	100 C
1 x 6	7	3.12	0.8	4.7	68	3.08	100 C
1 x 10	7	4.01	1.0	6.0	113	1.83	100 C
1 x 16	7	5.03	1.0	7.0	170	1.15	100 C
1 x 25	7	6.30	1.2	8.7	265	0.727	100 C
1 x 35	7	7.44	1.2	9.8	360	0.524	100 C
1 x 50	19	8.10	1.4	10.9	470	0.387	3000 D
1 x 70	19	9.70	1.4	12.5	663	0.268	3000 D
1 x 95	19	11.40	1.6	14.6	920	0.193	3000 D
1 x 120	37	12.90	1.6	16.1	1140	0.153	2000 D
1 x 150	37	14.30	1.8	17.9	1410	0.124	2000 D
1 x 185	37	16.00	2.0	20.0	1770	0.0991	2000 D
1 x 240	61	18.40	2.2	22.8	2320	0.0754	1000 D
1 x 300	61	20.40	2.4	25.2	2900	0.0601	1000 D
1 x 400	61	23.20	2.6	28.4	3700	0.0470	500 D
1 x 500	61	26.70	2.8	32.3	4730	0.0366	500 D
1 x 630	61	30.40	2.8	36.0	6050	0.0283	500 D

Color: green/yellow    blue    black    green    red    yellow    brown    grey    orange    white

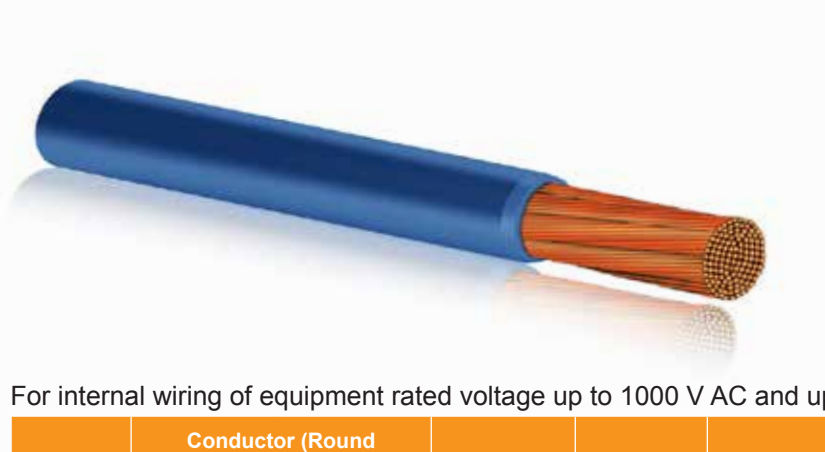
## CU/LSZH WIRES 450/750 VOLTS (ROUND FLEXIBLE)

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z-K as per BS EN 50525-3-41 (BS 7211)

Conductor: Round Flexible (Class5)

Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)



For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Round Flexible)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Numbers of Wires in Conductor	Approx. Diameter of Conductor					
mm <sup>2</sup>	No x mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
1 x 1.5	27 x 0.25	1.55	0.7	3.0	20	13.3	100 C
1 x 2.5	45 x 0.25	2.00	0.8	3.6	30	7.98	100 C
1 x 4	50 x 0.30	2.51	0.8	4.1	45	4.95	100 C
1 x 6	76 x 0.30	3.09	0.8	4.7	65	3.30	100 C
1 x 10	74 x 0.40	4.07	1.0	6.1	110	1.91	100 C
1 x 16	118 x 0.40	5.08	1.0	7.1	165	1.21	100 C
1 x 25	182 x 0.40	6.35	1.2	9.0	255	0.780	100 C
1 x 35	257 x 0.40	7.50	1.2	10.0	345	0.554	100 C
1 x 50	371 x 0.40	8.95	1.4	12.0	495	0.386	1000 D
1 x 70	336 x 0.50	10.70	1.4	14.0	690	0.272	1000 D
1 x 95	444 x 0.50	12.30	1.6	16.0	910	0.206	1000 D
1 x 120	568 x 0.50	14.00	1.6	17.2	1150	0.161	1000 D
1 x 150	708 x 0.50	15.60	1.8	19.2	1435	0.129	1000 D
1 x 185	864 x 0.50	17.20	2.0	21.2	1745	0.106	1000 D
1 x 240	1134 x 0.50	20.0	2.2	24.4	2265	0.0801	1000 D
1 x 300	1414 x 0.50	22.0	2.4	27.0	2815	0.0641	1000 D

Color: green / yellow blue black green red yellow brown grey orange white

# CU/PVC/PVC CABLES 300/500 VOLTS (ROUND SOLID)

Copper Conductor PVC insulated and PVC Sheathed - IEC 60227

H05VV-U, IEC 60227  
TYPE 60227 IEC 10



Nominal Cross Section	Numbers of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
mm <sup>2</sup>		mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 1.5	1	1.38	0.7	1.2	8.0	94	12.1	100 C
2 x 2.5	1	1.78	0.8	1.2	9.2	133	7.41	100 C
2 x 4	1	2.25	0.8	1.2	10.1	176	4.61	100 C
2 x 6	1	2.76	0.8	1.2	11.1	227	3.08	100 C
2 x 10	1	3.57	1.0	1.4	13.9	367	1.83	1000/2000
3 x 1.5	1	1.38	0.7	1.2	8.4	113	12.1	100 C
3 x 2.5	1	1.78	0.8	1.2	10.0	163	7.41	100 C
3 x 4	1	2.25	0.8	1.2	10.7	219	4.61	100 C
3 x 6	1	2.76	0.8	1.4	12.2	298	3.08	100 C
3 x 10	1	3.57	1.0	1.4	15.0	467	1.83	1000/2000
4 x 1.5	1	1.38	0.7	1.2	9.1	138	12.1	100 C
4 x 2.5	1	1.78	0.8	1.2	10.6	201	7.41	100 C
4 x 4	1	2.25	0.8	1.4	12.1	284	4.61	100 C
4 x 6	1	2.76	0.8	1.4	13.3	372	3.08	1000/2000
4 x 10	1	3.57	1.0	1.4	16.3	594	1.83	1000/2000
5 x 1.5	1	1.38	0.7	1.2	10.0	165	12.1	100 C
5 x 2.5	1	1.78	0.8	1.2	11.5	242	7.41	100 C
5 x 4	1	2.25	0.8	1.4	13.2	343	4.61	100 C
5 x 6	1	2.76	0.8	1.4	15.0	452	3.08	1000/2000
5 x 10	1	3.57	1.0	1.4	17.8	734	1.83	1000/2000

**Colour of Insulation:**

2 cores: Red, Black

3 cores: Red, Yellow and Blue

4 cores: Red, Yellow, Blue and Black

5 cores: Red, Yellow, Blue, Black and Green

Colour of Outer sheath – Grey.

**Note:** Colour code as per BS Standards shall only be provided based on specific request which is as follows:

2 cores: brown and blue

3 cores: green/yellow, blue, brown

4 cores: green/yellow, blue, brown, black

5 cores: green/yellow, blue, brown, black and grey

## CU/PVC/PVC CABLES 300/500 VOLTS (ROUND STRANDED)

Copper Conductor PVC insulated and PVC Sheathed and IEC 60227

H05VV-R, IEC 60227  
TYPE 60227 IEC 10



Cross Section	Numbers of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
mm <sup>2</sup>		mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 1.5	7	1.56	0.7	1.2	8.3	100	12.1	100 C
2 x 2.5	7	1.98	0.8	1.2	9.6	140	7.41	100 C
2 x 4	7	2.52	0.8	1.2	10.7	190	4.61	100 C
2 x 6	7	3.12	0.8	1.2	11.8	246	3.08	100 C
2 x 10	7	4.01	1.0	1.4	14.8	396	1.83	1000/2000
2 x 16	7	5.03	1.0	1.4	16.9	555	1.15	1000/2000
2 x 25	7	6.30	1.2	1.4	20.0	830	0.727	1000
2 x 35	7	7.44	1.2	1.6	23.0	1210	0.524	1000
3 x 1.5	7	1.56	0.7	1.2	8.8	121	12.1	100 C
3 x 2.5	7	1.98	0.8	1.2	10.2	170	7.41	100 C
3 x 4	7	2.52	0.8	1.2	11.4	235	4.61	100 C
3 x 6	7	3.12	0.8	1.4	13.0	320	3.08	100 C
3 x 10	7	4.01	1.0	1.4	16.0	500	1.83	1000/2000
3 x 16	7	5.03	1.0	1.4	18.0	714	1.15	1000/2000
3 x 25	7	6.30	1.2	1.6	22.0	1100	0.727	1000
3 x 35	7	7.44	1.2	1.6	24.0	1440	0.524	1000
4 x 1.5	7	1.56	0.7	1.2	9.6	148	12.1	100 C
4 x 2.5	7	1.98	0.8	1.2	11.1	215	7.41	100 C
4 x 4	7	2.52	0.8	1.4	12.8	304	4.61	100 C
4 x 6	7	3.12	0.8	1.4	14.2	399	3.08	1000/2000
4 x 10	7	4.01	1.0	1.4	17.3	635	1.83	1000/2000
4 x 16	7	5.03	1.0	1.4	19.8	912	1.15	1000/2000
4 x 25	7	6.30	1.2	1.6	24.0	1400	0.727	1000
4 x 35	7	7.44	1.2	1.6	27.0	1980	0.524	1000
5 x 1.5	7	1.56	0.7	1.2	10.4	176	12.1	100 C
5 x 2.5	7	1.98	0.8	1.2	12.2	250	7.41	100 C
5 x 4	7	2.52	0.8	1.4	14.0	360	4.61	100 C
5 x 6	7	3.12	0.8	1.4	15.5	484	3.08	1000/2000
5 x 10	7	4.01	1.0	1.4	19.0	786	1.83	1000/2000
5 x 16	7	5.03	1.0	1.6	22.2	1153	1.15	1000/2000
5 x 25	7	6.30	1.2	1.6	27.0	1740	0.727	1000
5 x 35	7	7.44	1.2	1.6	30.0	2310	0.524	1000

### Colour of Insulation:

2 cores: Red, Black  
3 cores: Red, Yellow and Blue  
4 cores: Red, Yellow, Blue and Black  
5 cores: Red, Yellow, Blue, Black and Green

Colour of Outer sheath – Grey.

**Note:** Colour code as per BS Standards shall only be provided based on specific request which is as follows:

2 cores: brown and blue  
3 cores: green/yellow, blue, brown  
4 cores: green/yellow, blue, brown, black  
5 cores: green/yellow, blue, brown, black and grey

## CU/PVC/PVC CABLES 300/500 VOLTS

Flexible Copper Conductor PVC insulated and Sheathed, BS EN 50525-2-II (BS 6500) and IEC 60227

H05VV-F, IEC 60227 & BS EN 50525-2-11 (BS 6500)  
 TYPE 60227 IEC 53  
 H05V2V2-F Heat Resistant Cables can be made on special request.



Nominal Cross Section	Numbers & diameter of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
mm <sup>2</sup>	no x mm	mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 0.75	22 x 0.20	1.20	0.6	0.8	6.4	56	26.0	100
2 x 1	29 x 0.20	1.30	0.6	0.8	6.6	63	19.5	100
2 x 1.5	27 x 0.25	1.55	0.7	0.8	7.5	83	13.3	100
2 x 2.5	45 x 0.25	2.00	0.8	1.0	9.2	128	7.98	100
2 x 4	50 x 0.3	2.51	0.8	1.1	10.4	175	4.95	100
3 x 0.75	22 x 0.20	1.20	0.6	0.8	6.78	67	26.0	100
3 x 1	29 x 0.20	1.30	0.6	0.8	7.0	75	19.5	100
3 x 1.5	27 x 0.25	1.55	0.7	0.9	8.2	105	13.3	100
3 x 2.5	45 x 0.25	2.00	0.8	1.1	9.8	160	7.98	100
3 x 4	50 x 0.3	2.51	0.8	1.2	11.3	225	4.95	100
4 x 0.75	22 x 0.20	1.20	0.6	0.8	7.4	81	26.0	100
4 x 1	29 x 0.20	1.30	0.6	0.9	7.8	95	19.5	100
4 x 1.5	27 x 0.25	1.55	0.7	1.0	9.1	132	13.3	100
4 x 2.5	45 x 0.25	2.00	0.8	1.1	11.0	197	7.98	100
4 x 4	50 x 0.3	2.51	0.8	1.2	12.4	275	4.95	100
5 x 0.75	22 x 0.20	1.20	0.6	0.9	8.3	101	26.0	100
5 x 1	29 x 0.20	1.30	0.6	0.9	8.5	114	19.5	100
5 x 1.5	27 x 0.25	1.55	0.7	1.1	10.2	163	13.3	100
5 x 2.5	45 x 0.25	2.00	0.8	1.2	12.1	243	7.98	100
5 x 4	50 x 0.3	2.51	0.8	1.4	13.9	345	4.95	100

### Colour of Insulation:

2 cores: blue, brown.  
 3 cores: green/yellow, blue, brown.  
 4 cores: green/yellow, blue, brown black.  
 5 cores: green/yellow, blue, brown, black, grey.

Colour of Outer sheath – White.

# PVC INSULATION, NON-SHEATHED CORDS FOR INTERNAL WIRING

## Single Core and Twisted Twin

COPPER CONDUCTOR: BS EN 50525-2-11 (BS 6500) and IEC 60227, 300 / 500 VOLTS H05V-K, TYPE 60227 IEC 06



CONDUCTOR		Radial Thickness of insulation	Mean overall diameter (upper limit) single	Maximum Conductor DC Resistance at 20°C	Approximate Weight	
Nom. cross sectional area	Nom. diameter of strand				Single	Twin
mm <sup>2</sup>	mm	mm	mm	Ω / Km	Kg / Km	Kg / Km
0.5	0.20	0.6	2.4	39.0	9	19
0.75	0.20	0.6	2.6	26.0	12	24
1.0	0.20	0.6	2.8	19.5	15	29

### Construction:

- Annealed Copper conductor as per BS EN 60228 (BS 6360) or IEC 60228, Class 5 ( Class 1 and Class 2 conductors can be provided based on special request)
- PVC Insulation Type T1 1

## 380 V NYFAF – PVC INSULATION, NON-SHEATHED FLEXIBLE CORDS FOR INTERNAL WIRING Single, Three and Four

Nominal Cross Section	CONDUCTOR		Nominal Thickness of Insulation	Overall Dimension max	Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
	Max. Diameter of Wire in Conductor	Approx. Diameter of Conductor				
mm <sup>2</sup>	mm	mm	mm	mm	Ω / Km	Kg / Km
1 x 0.50	0.21	0.9	0.6	2.4	37.1	9
1 x 0.75	0.21	1.1	0.6	2.6	24.7	12
3 x 0.50	0.21	0.9	0.6	5.2	39.0	27
3 x 0.75	0.21	1.1	0.6	5.6	26.0	36
4 x 0.50	0.21	0.9	0.6	5.8	39.0	36
4 x 0.75	0.21	1.1	0.6	6.2	26.0	48

### Construction:

Annealed copper conductor  
PVC Insulation.

# PVC INSULATION, NON-SHEATHED FLEXIBLE CORDS FOR INTERNAL WIRING – PARALLEL TWIN COPPER CONDUCTOR

H03VH-H 300/300 VOLTS - IEC 60227



CONDUCTOR		Radial Thickness of Insulation	Mean overall dimensions		Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
Nom. Cross Sectional area	Maximum diameter of Wire		Lower Limit	Upper Limit		
mm <sup>2</sup>	mm	mm	mm	mm	Ω / Km	Kg / Km
2 x 0.50	0.16	0.8	2.4 x 4.9	3.0 x 5.9	39.0	22
2 x 0.75	0.16	0.8	2.6 x 5.2	3.1 x 6.3	26.0	28

## Construction:

- Annealed Copper conductor as per BS EN 60228 (BS 6360) or IEC 60228 Class 6.
- The conductors shall be laid parallel and covered with PVC insulation.
- The insulation shall be provided with a groove on each side between the conductors to facilitate separation of the cores.



# PVC INSULATED, PVC SHEATHED CABLES SINGLE CORE, FLAT TWIN AND FLAT THREE CORES WITHOUT EARTH CONTINUITY CONDUCTOR

COPPER CONDUCTOR – STANDARD: BS EN 50525-2-31 (BS 6004) – 300 / 500 VOLTS



No. & Cross Sectional area of conductor	Number of Wires in Conductor	Radial Thickness of insulation	Radial Thickness of Sheath	Mean overall dimensions		Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
				Lower Limit	Upper Limit		
mm <sup>2</sup>	mm	mm	mm	mm	mm	Ω / Km	Kg / Km
1 x 1.0	1	0.6	0.8	3.8	4.5	18.1	27
1 x 1.5	1	0.7	0.8	4.2	4.9	12.1	34
1 x 2.5	1	0.8	0.8	4.8	5.8	7.41	48
1 x 4	7	0.8	0.9	5.4	6.8	4.61	70
1 x 6	7	0.8	0.9	6.0	7.4	3.08	91
1 x 10	7	1.0	0.9	7.2	8.8	1.83	142
1 x 16	7	1.0	1.0	8.4	10.5	1.15	209
1 x 25	7	1.2	1.1	10.0	12.5	0.727	318
1 x 35	7	1.2	1.1	11.0	13.5	0.524	418
2 x 1.0	1	0.6	0.9	4.0 x 6.2	4.7 x 7.4	18.1	50
2 x 1.5	1	0.7	0.9	4.4 x 7.0	5.4 x 8.4	12.1	67
2 x 2.5	1	0.8	1.0	5.2 x 8.4	6.2 x 9.8	7.41	101
2 x 4	7	0.8	1.0	5.6 x 9.6	7.2 x 11.5	4.61	142
2 x 6	7	0.8	1.1	6.4 x 10.5	8.0 x 13.0	3.08	190
2 x 10	7	1.0	1.2	7.8 x 13.0	9.6 x 16.0	1.83	304
2 x 16	7	1.0	1.3	9.0 x 15.5	11.0 x 18.5	1.15	437
3 x 1.0	1	0.6	0.9	4.0 x 8.4	4.7 x 9.8	18.1	72
3 x 1.5	1	0.7	0.9	4.4 x 9.8	5.4 x 11.5	12.1	101
3 x 2.5	1	0.8	1.0	5.2 x 11.5	6.2 x 13.5	7.41	152
3 x 4	7	0.8	1.1	5.8 x 13.5	7.4 x 16.5	4.61	218
3 x 6	7	0.8	1.1	6.4 x 15.0	8.0 x 18.0	3.08	285
3 x 10	7	1.0	1.2	7.8 x 19.0	9.6 x 22.5	1.83	451
3 x 16	7	1.0	1.3	9.0 x 22.0	11.0 x 26.5	1.15	655

### Construction:

Plain annealed copper conductor Class 1 or Class 2 as per BS EN 60228 (BS 6360).

- PVC Insulation Type TI 1
- PVC Sheath Type 6
- The sheath shall be closely fitting but shall not adhere to the cores and in the case of twin and three-core the cores shall be laid parallel.

### Colour of Insulation as per BS EN 50525-2-31 (BS 6004):

Single : Brown or Blue  
 Twin : Brown and Blue  
 Three-core: Brown, Black (center), Grey

### Colour of Insulation General

Single : Black  
 Twin : Red, Black  
 Three-core: Red, Yellow, Blue

**Color of Sheath:** Grey

# PVC INSULATION, PVC SHEATHED CABLES,

With Earth Continuity Conductor, Flat Twin and Flat Three Cores



No. & Cross Sectional area of conductor	Number of Wires in Conductor	Radial Thickness of Insulation	Radial Thickness of Sheath	Mean overall dimensions		Earth continuity conductor cross section	Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
				Lower Limit	Upper Limit			
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm <sup>2</sup>	Ω / Km	Kg / Km
2 x 1.0	1	0.6	0.9	4.0 x 7.2	4.7 x 8.6	1.0	18.1	65
2 x 1.5	1	0.7	0.9	4.4 x 8.2	5.4 x 9.6	1.0	12.1	83
2 x 2.5	1	0.8	1.0	5.2 x 9.8	6.2 x 11.5	1.5	7.41	128
2 x 4	7	0.8	1.0	5.6 x 10.5	7.2 x 13.0	1.5	4.61	161
2 x 6	7	0.8	1.1	6.4 x 12.5	8.0 x 15.0	2.5	3.08	228
2 x 10	7	1.0	1.2	7.8 x 15.5	9.6 x 19.0	4	1.83	361
2 x 16	7	1.0	1.3	9.0 x 18.0	11.0 x 22.5	6	1.15	522
3 x 1.0	1	0.6	0.9	4.0 x 9.6	4.7 x 11.0	1.0	18.1	85
3 x 1.5	1	0.7	0.9	4.4 x 10.5	5.4 x 12.5	1.0	12.1	114
3 x 2.5	1	0.8	1.0	5.2 x 12.5	6.2 x 14.5	1.0	7.41	171
3 x 4	7	0.8	1.1	5.8 x 14.5	7.4 x 18.0	1.5	4.61	237
3 x 6	7	0.8	1.1	6.4 x 16.5	8.0 x 20.0	2.5	3.08	313
3 x 10	7	1.0	1.2	7.8 x 21.0	9.6 x 25.5	4	1.83	513
3 x 16	7	1.0	1.3	9.0 x 24.5	11.0 x 29.5	6	1.15	731

## Construction:

Plain annealed copper conductor Class 1 or Class 2 as per BS EN 60228 (BS 6360).

- PVC Insulation Type TI 1
- PVC Sheath Type 6
- The sheath shall be closely fitting but shall not adhere to the cores which shall be laid parallel with un-insulated earth continuity conductor.

## Colour of Insulation as per BS EN 50525-2-31 (BS 6004):

Single : Brown or Blue  
 Twin : Brown and Blue  
 Three-core: Brown, Black (center), Grey

## Colour of Insulation General

Single : Black  
 Twin : Red, Black  
 Three-core: Red, Yellow, Blue

**Color of Sheath:** Grey

# Current Rating of CU/PVC Wires

**TABLE 1**

Current carrying capacity and associated voltage drop for single core PVC insulated cables, non-armoured, with or without sheath  
 CU/PVC 450 / 750 V Wires - BS EN 50525-2-31 (BS 6004) & BS 6231

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

Conductor		Reference Method A (enclosed in conduit in the thermally insulating wall etc.)				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.		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				Space 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		Horiz		Vert			
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
mm <sup>2</sup>	A	A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	
1.0	11	44	10.5	38	13.5	44	12	38	15.5	44	14	38	-	44	-	38	-	38	-	-	-	44	38	-	-	44	38
1.5	14.5	29	13.5	25	17.5	29	15.5	25	20	29	18	25	-	29	-	25	-	25	-	-	-	29	25	-	-	29	25
2.5	20	18	18	15	24	18	21	15	27	18	25	15	-	18	-	15	-	15	-	-	-	18	15	-	-	18	15
4	26	11	24	9.5	32	11	28	9.5	37	11	33	9.5	-	11	-	9.5	-	9.5	-	-	-	11	9.5	-	-	11	9.5
6	34	7.3	31	6.4	41	7.3	36	6.4	47	7.3	43	6.4	-	7.3	-	6.4	-	6.4	-	-	-	7.3	6.4	-	-	7.3	6.4
10	46	4.4	42	3.8	57	4.4	50	3.8	65	4.4	59	3.8	-	4.4	-	3.8	-	3.8	-	-	-	4.4	3.8	-	-	4.4	3.8
16	61	2.8	56	2.4	76	2.8	68	2.4	87	2.8	79	2.4	-	2.8	-	2.4	-	2.4	-	-	-	2.8	2.4	-	-	2.8	2.4
25	80	1.80a	73	1.55	101	1.80	89	1.55	114	1.75	104	1.55	131	1.80	114	1.55	110	1.50	146	130	180	1.80	1.55	-	-	130	1.80
35	99	1.30a	89	1.10	125	1.30	110	1.10	141	1.25	129	1.10	162	1.30	143	1.10	137	1.10	181	162	130	1.15	1.15	-	-	162	1.30
50	119	1.00a	108	0.85	151	1.00	134	0.85	182	0.95	167	0.84	196	1.00	174	0.84	167	0.82	219	197	130	0.86	0.86	-	-	197	1.00
70	151	0.72a	136	0.61	192	0.72	171	0.61	234	0.66	214	0.60	251	0.72	225	0.60	216	0.57	281	254	130	0.63	0.63	-	-	254	0.72
95	182	0.56 a	164	0.48	232	0.56	207	0.48	284	0.50	261	0.47	304	0.56	275	0.47	264	0.43	341	311	130	0.51	0.51	-	-	311	0.56
120	210	0.47a	188	0.41	269	0.47	239	0.41	330	0.41	303	0.40	352	0.47	321	0.40	308	0.36	396	362	130	0.44	0.44	-	-	362	0.47
150	240	0.41a	216	0.36	300	0.41	262	0.36	381	0.34	349	0.34	406	0.41	372	0.34	356	0.30	456	419	130	0.40	0.40	-	-	419	0.41
185	273	0.37a	245	0.32	341	0.37	296	0.32	436	0.29	400	0.31	463	0.37	427	0.31	409	0.26	521	480	130	0.36	0.36	-	-	480	0.37
240	321	0.33a	286	0.29	400	0.33	346	0.29	515	0.25	472	0.27	546	0.33	507	0.27	485	0.22	615	569	130	0.34	0.34	-	-	569	0.33
300	367	0.31a	328	0.27	458	0.31	394	0.27	594	0.22	545	0.25	629	0.31	587	0.25	561	0.190	709	659	130	0.32	0.32	-	-	659	0.31
400	-	0.29a	-	0.25	546	0.29	467	0.25	694	0.20	634	0.24	754	0.29	689	0.24	656	0.175	852	795	130	0.31	0.31	-	-	795	0.29
500	-	0.28a	-	0.25	626	0.28	533	0.25	792	0.185	723	0.23	868	0.28	789	0.23	749	0.160	982	920	130	0.30	0.30	-	-	920	0.28
630	-	0.27a	-	0.24	720	0.27	611	0.24	904	0.175	826	0.22	1005	0.27	905	0.22	855	0.150	1138	1070	130	0.29	0.29	-	-	1070	0.27
800	-	-	-	-	-	-	-	-	1030	0.165	943	0.22	1086	-	1020	0.22	971	0.145	1265	1188	130	0.29	0.29	-	-	1188	0.22
1000	-	-	-	-	-	-	-	-	1154	0.160	1058	0.21	1216	-	1149	0.21	1079	0.140	1420	1337	130	0.28	0.28	-	-	1337	0.21

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4D1A and 4D1B of BS 7671.

**Notes:**

1. The current carrying capacities in columns 2 & 4 are also applicable to flexible cables to BS EN 50525-2-31 (BS 6004) (HO7V-K) where the cables are used in fixed installations.
2. Spacing larger than one cable diameter will result in a larger voltage drop.
3. Cables to BS 6231 when installed in conduit or trunking are rated for 70 °C

**Correction Factors**

**For Ambient Temperature**

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C  
 Correction Factor 1.03 1.0 0.94 0.87 0.79 0.71 0.61 0.50

# Current Rating of CU/LSZH Wires

**TABLE 2**

Current carrying capacity and associated voltage drop for single core XLPE insulated cables, non-armoured, with or without sheath  
CU/LSZH 450 / 750 V Wires - BS EN 50525-3-41 (BS 7211)

Conductor operating temperature: 90°C Ambient temperature: 30°C

Conductor	Reference Method A (enclosed in conduit in thermally insulating wall etc.)				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)						Reference Method G (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 a.c. flat and touching or trefoil		Touching						Space 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. flat		3 cables, three phase a.c. flat		3 cables, three phase a.c. trefoil		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		Horiz		Vert		Single phase		Three phase			
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
1.0	14	46	13	40	17	46	15	40	19	46	17.5	40	-	46	-	40	-	40	-	-	46	40								
1.5	19	31	17	27	23	31	20	27	25	31	23	27	-	31	-	27	-	27	-	-	31	27								
2.5	26	19	23	16	31	19	28	16	34	19	31	16	-	19	-	16	-	16	-	-	19	16								
4	35	12	31	10	42	12	37	10	46	12	41	10	-	12	-	10	-	10	-	-	12	10								
6	45	7.9	40	6.8	54	7.9	48	6.8	59	7.9	54	6.8	-	7.9	-	6.8	-	6.8	-	-	7.9	6.8								
10	61	4.7	54	4.0	75	4.7	66	4.0	81	4.7	74	4.0	-	4.7	-	4.0	-	4.0	-	-	4.7	4.0								
16	81	2.9	73	2.5	100	2.9	88	2.5	109	2.9	99	2.5	-	2.9	-	2.5	-	2.5	-	-	2.9	2.5								
25	106	1.90	95	1.65	133	1.90	117	1.65	143	1.85	130	1.60	135	1.85	141	1.60	135	1.60	182	161	1.85	1.65								
35	131	1.35	117	1.15	164	1.35	144	1.15	176	1.35	161	1.15	169	1.35	176	1.15	169	1.15	226	201	1.35	1.20								
50	158	1.05	141	0.90	198	1.05	175	0.90	228	1.00	209	0.87	207	1.00	216	0.87	207	0.87	275	246	1.00	0.89								
70	200	0.75	179	0.65	253	0.75	222	0.65	293	0.71	268	0.61	246	0.71	279	0.62	268	0.61	353	318	0.73	0.65								
95	241	0.58	216	0.50	306	0.58	269	0.50	355	0.52	326	0.45	328	0.52	342	0.46	328	0.45	430	389	0.56	0.49								
120	278	0.48	249	0.42	354	0.48	312	0.42	413	0.43	379	0.37	383	0.43	400	0.38	383	0.37	500	454	0.47	0.42								
150	318	0.43	285	0.37	393	0.43	342	0.37	476	0.36	436	0.31	444	0.36	464	0.32	444	0.31	577	527	0.41	0.37								
185	362	0.37	324	0.32	449	0.37	384	0.32	545	0.30	500	0.26	510	0.30	533	0.28	510	0.26	661	605	0.36	0.33								
240	424	0.33	380	0.29	528	0.33	450	0.29	644	0.25	590	0.22	607	0.25	634	0.24	607	0.22	781	719	0.31	0.29								
300	486	0.31	435	0.27	603	0.31	514	0.27	743	0.22	681	0.195	703	0.22	736	0.21	703	0.195	902	833	0.29	0.27								
400	-	0.29	-	0.25	683	0.29	584	0.25	868	0.20	793	0.175	823	0.20	868	0.195	823	0.175	1085	1008	0.27	0.26								
500	-	0.28	-	0.24	783	0.28	666	0.24	990	0.185	904	0.160	946	0.185	998	0.180	946	0.160	1253	1169	0.26	0.25								
630	-	0.27	-	0.23	900	0.27	764	0.23	1130	0.175	1033	0.150	1088	0.175	1151	0.170	1088	0.150	1454	1362	0.25	0.24								
800	-	-	-	-	-	-	-	-	1288	0.170	1179	0.145	1214	0.170	1275	0.165	1214	0.145	1581	1485	0.25	0.24								
1000	-	-	-	-	-	-	-	-	1443	0.165	1323	0.140	1349	0.165	1436	0.165	1349	0.140	1775	1671	0.24	0.24								

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4E1A and 4E1B of BS 7671.

Notes:

- Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671
- Spacing larger than those specified in Method C (Table 4A) will result in a larger voltage drop.

## Correction Factors For Ambient Temperature

Ambient Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
Correction Factor	1.03	1.0	0.94	0.87	0.79	0.71	0.61	0.50	0.65	0.58	0.50	0.41

# Current Rating of CU/PVC/PVC 300/500 V Cables

**TABLE 3**

Current carrying capacity for Multicore PVC insulated, PVC sheathed, non-armoured cables as per BS EN 50525-2-31 (BS 6004)

Conductor operating temperature: 70°C Ambient temperature: 30°C For Installation required to comply with BS 7671

Conductor	Reference Method A (enclosed in conduit in the thermally insulating wall etc.)				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 etc, horizontal or vertical)			
	1 two-core cable, single-phase a.c. or d.c.		1 three-core or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core cable or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core cable or 1 four-core cable, three phase a.c.	
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
mm <sup>2</sup>	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m
1.0	11	44	10	38	13	44	11.5	38	15	44	13.5	38	17	44	14.5	38
1.5	14	29	13	25	16.5	29	15	25	19.5	29	17.5	25	22	29	18.5	25
2.5	18.5	18	17.5	15	23	18	20.	15	27	18	24	15	30	18	25	15
4	25	11	23	9.5	30	11	27	9.5	36	11	32	9.5	40	11	34	9.5
6	32	7.3	29	6.4	38	7.3	34	6.4	46	7.3	41	6.4	51	7.3	43	6.4
10	43	4.4	39	3.8	52	4.4	46	3.8	63	4.4	57	3.8	70	4.4	60	3.8
16	57	2.8	52	2.4	69	2.8	62	2.4	85	2.8	76	2.4	94	2.8	80	2.4
25	75	1.75	68	1.50	90	1.75	80	1.50	112	1.75	96	1.50	119	1.75	101	1.50
35	92	1.25	83	1.10	111	1.25	99	1.10	138	1.25	119	1.10	148	1.25	126	1.10
50	110	0.94	99	0.81	133	0.94	118	0.81	168	0.94	144	0.81	180	0.94	153	0.81
70	139	0.65	125	0.57	168	0.65	149	0.57	213	0.65	184	0.57	232	0.65	196	0.57
95	167	0.50	150	0.43	201	0.50	179	0.43	258	0.50	223	0.43	282	0.50	238	0.43
120	192	0.41	172	0.35	232	0.41	206	0.35	299	0.41	259	0.35	328	0.41	276	0.35
150	219	0.34	196	0.29	258	0.34	225	0.29	344	0.34	299	0.29	379	0.34	319	0.29
185	248	0.29	223	0.25	294	0.29	255	0.25	392	0.29	341	0.25	434	0.29	364	0.25
240	291	0.24	261	0.21	344	0.24	297	0.21	461	0.24	403	0.21	514	0.24	430	0.21
300	334	0.21	298	0.185	394	0.21	339	0.185	530	0.21	464	0.185	593	0.21	497	0.185
400	-	0.185	-	0.160	470	0.185	402	0.160	634	0.185	557	0.160	715	0.185	597	0.160

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4D2A and 4D2B of BS 7671.

**Correction Factors  
For Ambient Temperature**

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C  
 Correction Factor 1.03 1.0 0.94 0.87 0.79 0.71 0.61 0.50  
 For grouping refer to Table 4C1 of BS 7671

## Current Rating for Flat Cables

**TABLE 4**

Current carrying capacity and associated voltage drop for thermoplastic (PVC) insulated and Sheathed flat cable with protective earth continuity conductor for CU/PVC/PVC Cables

BS EN 50525-2-31 (BS 6004)

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

For installation required to comply with BS 7671

Conductor	Reference method 100 (above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in thickness)	Reference method 101 (above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in thickness)	Reference method 102 (in a stud wall with thermal insulation with cable touching the inner surface wall)	Reference method 103 (in a stud wall with thermal insulation with cable not touching the inner surface wall)	Reference method C (slipped direct)	Reference method A (enclosed in conduit in an insulated wall)	Voltage drop
1	2	3	4	5	6	7	8
mm <sup>2</sup>	A	A	A	A	A	A	mV/A/m
1	13	10.5	13	8	16	11.5	44
1.5	16	13	16	10	20	14.5	29
2.5	21	17	21	13.5	27	20	18
4	27	22	27	17.5	37	26	11
6	34	27	35	23.5	47	32	7.3
10	45	36	47	32	64	44	4.4
16	57	46	63	42.5	85	57	2.8

**Notes:**

Wherever practicable a cable is to be fixed in a position such that it will not be covered with thermal insulation, reference should be made to Table 4D5 of BS 7671

**Correction Factors**

**For Alternative Ambient Temperatures**

Ambient Temperature 25°C 30°C 35°C 40°C 45°C 50°C 55°C 60°C

Correction Factor 1.03 1.0 0.94 0.87 0.79 0.71 0.61 0.50

## Current Rating Guidelines

### *Reference Methods as per BS 7671*

The Reference Methods are those methods of installation for which the current-carrying capacity has been determined by test or calculation.

Reference Method A, for example, Installation Methods 1 and 2 (non-sheathed cables and multicore cables in conduit in a thermally insulated wall).

The wall consists of an outer weatherproof skin, thermal insulation and an inner skin of wood or wood-like material having a thermal conductance of at least  $10 \text{ W/m}^2\text{K}$ . The conduit is fixed such that it is close to, but not necessarily touching, the inner skin. Heat from the cables is assumed to escape through the inner skin only. The conduit can be metal or plastic.

Reference Method B, for example, Installation Method 4 of Table 2 (non-sheathed cables in conduit mounted on a wooden or masonry wall) and installation Method 5 (multicore cable in conduit on a wooden or masonry wall).

The conduit is mounted on a wooden wall such that the gap between the conduit and the surface is less than 0.3 times the conduit diameter. The conduit can be metal or plastic. Where the conduit is fixed to a masonry wall the current-carrying capacity of the non-sheathed or sheathed cable may be higher.

Reference Method C (clipped direct), for example, Installation Method 20 (single-core or multicore cable on a wooden or masonry wall)

Cable mounted on a wooden wall so that the gap between the cable and surface is less than 0.3 times the cable diameter. Where the cable is fixed to or embedded in a masonry wall the current-carrying capacity may be higher.

**NOTE:** The term “masonry” is taken to include brickwork, concrete, plaster and similar (but excluding thermally insulating materials)

### *Installation methods specifically for flat twin with earth continuity conductor cables in thermal insulation*

Method 100 – Installation methods for flat twin and earth cable clipped direct to a wooden joist above a plasterboard ceiling with a minimum U value of  $0.1 \text{ W/m}^2\text{K}$  and with thermal insulation no exceeding 100mm in thickness.

Method 101 - Installation methods for flat twin and earth cable clipped direct to a wooden joist above a plasterboard ceiling with a minimum U value of  $0.1 \text{ W/m}^2\text{K}$  and with thermal insulation exceeding 100mm in thickness.

Method 102 - Installation methods for flat twin and earth cable in a stud wall with thermal insulation with a minimum U value of  $0.1 \text{ W/m}^2\text{K}$  with the cable touching the inner wall surface.

Method 103 - Installation methods for flat twin and earth cable in a stud wall with thermal insulation with a minimum U value of  $0.1 \text{ W/m}^2\text{K}$  with the cable not touching the inner wall surface.

Wherever practicable, a cable is to be fixed in a position such that it will not be covered with thermal insulation. Regulation 523.7, BS 5803-5: Appendix C: Avoidance of overheating of electric cables, Building Regulations Approved document B and Thermal insulation: avoiding risk. BR 262, BRE, 2001 refer.



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